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Research Article

Risk, Return, and Anomalies in Islamic Equity Markets: A Post-2020 Review

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ABSTRACT: *Background:* The rapid growth of the Islamic capital market has spurred significant academic interest in developing and validating asset pricing models that adhere to Shariah principles. Traditional models like the Capital Asset Pricing Model (CAPM) are often inadequate due to their reliance on interest-based risk-free rates and assumptions that may not hold in Shariah-compliant contexts.

Objective: This study conducts a systematic literature review of academic research published between 2021 and 2025 complemented by seminal pre-2021 benchmark studies, to synthesize the current state of knowledge on asset pricing models for Shariah-compliant stocks. It aims to identify the dominant models, key pricing factors, and persistent anomalies, while highlighting methodological trends and research gaps.

Methods: Following the PRISMA 2020 statement, reproducible searches of Scopus and Web of Science identified 209 records, from which 46 studies met the inclusion criteria. The review focuses on studies examining the efficacy of various pricing models, including the Shariah-Compliant Asset Pricing Model (SCAPM), multi-factor models (*e.g.*, Fama-French), and the Arbitrage Pricing Theory (APT), as well as the influence of behavioral factors, ESG criteria, and downside risk.

Results: The review reveals a clear shift from traditional CAPM towards multi-factor models, with the Fama-French five-factor model emerging as the most widely adopted and generally best-performing benchmark, although its advantage is not unconditional. There is evidence of at least partial market segmentation, suggesting that Islamic-specific factors better explain the cross-section of returns than market-wide factors. Key themes emerging from recent literature include the outperformance of Islamic indices during crisis periods, the significance of value and momentum premiums, and the growing influence of ESG and behavioral factors in pricing Islamic equities.

Conclusion: The asset pricing landscape for Shariah-compliant stocks is evolving towards more sophisticated, multi-factor frameworks that incorporate both financial and ethical considerations. Future research should focus on developing more robust Islamic-specific pricing factors, exploring the impact of new screening methodologies, and examining the integration of Islamic markets with the global financial system. The review contributes a critical comparison of competing models and sets out implications for Islamic financial institutions, portfolio managers, regulators and Shariah supervisory boards.

Keywords: Islamic Asset Pricing, Shariah-Compliant Stocks, Systematic Literature Review, Fama-French Five-Factor Model, Shariah-Compliant Asset Pricing Model (SCAPM), Market Segmentation, Asset Pricing Anomalies, Behavioral Finance, ESG Integration, Islamic Capital Markets.

1. INTRODUCTION

The global financial landscape has witnessed a remarkable transformation over the past two decades, marked by the exponential growth of the Islamic finance industry. From a niche market with assets of just US$10 billion in 1985, the sector has burgeoned into a formidable force, with assets of US$2.88 trillion in 2019 and projected to reach US$3.69 trillion by 2024 [1]. This

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expansion is not confined to Muslim-majority countries; it has garnered significant interest from conventional investors and non-Muslim nations, drawn by its ethical underpinnings and demonstrated resilience, particularly during periods of financial turmoil [2]. At the heart of this industry lies the Islamic capital market (ICM), which operates in adherence with Shariah principles, prohibiting interest (riba), uncertainty (gharar), and investment in forbidden (haram) industries.

This adherence to a unique set of ethical and financial principles necessitates a distinct approach to asset pricing. The foundational models of modern finance, such as the Capital Asset Pricing Model (CAPM), are built on assumptions—notably the existence of a risk-free rate derived from interest-bearing government securities—that are fundamentally incompatible with Islamic finance [3]. This incompatibility creates a significant problem statement: how can investors and portfolio managers accurately price risk and estimate expected returns for Shariah-compliant equities in a manner that is both theoretically sound and empirically valid?

The research gap emerges from the ongoing debate about whether Islamic equity markets are integrated with or segmented from their conventional counterparts. If markets are integrated, conventional asset pricing models with minor adjustments might suffice. However, if they are segmented, as a growing body of evidence suggests, then unique, Islamic-specific risk factors are required to explain the cross-section of returns accurately [4]. While numerous studies have compared the performance of Islamic and conventional indices [2], a systematic synthesis of the literature on the *pricing models* themselves, particularly in the post-2020 period, remains less developed.

This study aims to address this gap by answering the following research questions:

1. What are the dominant asset pricing models being applied to Shariah-compliant stocks in the recent literature (2021-2025)?
2. How effective are these models, from modified CAPM to multi-factor frameworks, in explaining the cross-section of Islamic equity returns?
3. What are the key risk factors, anomalies, and market characteristics that define the pricing of Shariah-compliant stocks?

The primary objective of this paper is to conduct a systematic literature review of recent, high-impact research on the asset pricing of Shariah-compliant stocks. By synthesizing the findings of studies published between 2021 and 2025, this review provides a comprehensive overview of the current state of the field. Ultimately, this paper provides a crucial resource for academics, portfolio managers, and investors seeking to understand the unique risk and return dynamics of the burgeoning Islamic equity market.

The contribution of this work is multifaceted, specifically designed to bridge the gap between traditional Shariah-compliant asset pricing and the emerging paradigm of digital finance. First, unlike earlier reviews that survey the Islamic capital market broadly [5, 6], it focuses specifically on asset pricing models and offers a structured, critical comparison of the CAPM, SCAPM, APT, Carhart and Fama–French models within the Islamic equity universe. Second, it consolidates the empirical evidence on market segmentation and the existence of a distinct “Islamic risk premium”. Third, it explicitly highlights the relevance of these asset pricing insights for FinTech-enabled sustainable finance, demonstrating how tools like AI, predictive analytics, and blockchain are critical for integrating dynamic ESG criteria and real-time Shariah compliance. Finally, it identifies critical research gaps at the intersection of asset pricing, sustainability, and financial technology to guide future inquiry, and translates the evidence into practical implications for Islamic financial institutions, portfolio managers, regulators and Shariah supervisory boards.

2. LITERATURE REVIEW

The academic discourse on asset pricing within Islamic finance has evolved significantly, moving from early attempts to adapt traditional models to the development of more nuanced, Shariah-compliant frameworks. This review synthesizes the literature from 2021 to 2025, focusing on the critical evaluation of pricing models, the debate between market integration and segmentation, and the exploration of new risk factors.

2.1. The Limitations of Traditional Models and the Rise of SCAPM

The unsuitability of the conventional Capital Asset Pricing Model (CAPM) in an Islamic context is a foundational theme in the literature. The model's reliance on an interest-based risk-free rate is in direct contradiction to the Shariah prohibition of *riba* (interest). This has led to the development of the Shariah-Compliant Asset Pricing Model (SCAPM), which seeks to replace the risk-free rate with a Shariah-compliant alternative. A prominent

approach, as empirically tested by Faisol *et al*. (2022), involves using a profit-sharing (*mudharabah*) variable as a substitute for the risk-free rate. Their study on the Indonesian energy sector found a significant risk-return relationship using this SCAPM approach, concluding that *mudharabah* can serve as a viable alternative to the traditional risk-free rate [7]. However, the SCAPM itself is not without critics, as it still retains the single-factor (market risk) structure of the original CAPM, which has been shown to be insufficient in explaining the full spectrum of stock returns.

2.2. The Superiority of Multi-Factor Models

A significant trend in recent research is the move towards multi-factor models, which provide a more robust explanation of the cross-section of equity returns. The Fama-French three-factor and, more recently, the five-factor models have been extensively tested in Islamic markets. Zaremba *et al*. (2020), in a comprehensive study of 167 anomalies across more than 1,500 Middle Eastern stocks over 1997–2017, found that the Fama-French five-factor model (incorporating market, size, value, profitability, and investment factors) outperformed all other models, including the CAPM, the three-factor model, and the Carhart four-factor model [4]. This finding is influential, although it predates the core review window and is confined to a single region (see Section 3.2).

Similarly, Safiullah and Shamsuddin (2021) utilized the Fama-French five-factor model to compare Islamic equity portfolios with their non-Islamic counterparts, finding that Islamic portfolios generally outperform after controlling for the five factors. Their research also highlighted a critical methodological point: comparing Islamic indices to broad conventional indices can yield spurious results, as the latter contain a mix of compliant and non-compliant stocks. A direct comparison of purified portfolios is therefore essential for accurate analysis [8]. At the same time, their GRS tests indicate that even the five-factor model does not fully price either Islamic or non-Islamic portfolios [8, 9].

2.3. Market Segmentation vs. Integration

The debate over whether Islamic capital markets are segmented from or integrated with global conventional markets is a central question in the literature. The answer has profound implications for asset pricing and portfolio diversification. If markets are segmented, then local, Islamic-specific factors should have greater explanatory power. Zaremba *et al*. (2020) provide strong evidence for at least partial market segmentation. Their analysis revealed that pricing factors derived solely from a universe of Islamic stocks explained the cross-section of returns more effectively than market-wide factors. They conclude that local models based on Islamic stocks are more appropriate for the Shariah-compliant universe, as pricing is determined by a set of uncorrelated return factors [4]. This suggests the existence of a unique "Islamic risk factor" that is not captured by conventional models.

2.4. Anomalies, Behavioral Finance, and New Risk Factors

While multi-factor models have improved explanatory power, research continues to explore other variables that influence Islamic stock prices. The persistence of market anomalies, such as the value and momentum effects, is well-documented. Zaremba *et al*. (2020) found that among 167 potential anomalies, the most significant and profitable were concentrated in value, reversal, and trend-following strategies, supporting the view that "value and momentum are everywhere" [4]. Using US Dow Jones Islamic index constituents over 1996–2012, Dewandaru *et al*. (2015) combined momentum, value, and quality factors, suggesting that such strategies can help Islamic equity investors outperform the market [10].

More recently, the literature has begun to incorporate insights from behavioral finance. Cheema and Fianto (2024) examined the impact of investor sentiment on stock market anomalies in the advanced Islamic finance jurisdictions of Malaysia and Indonesia, indicating that psychological biases play a role in asset pricing [11]. Furthermore, the importance of downside risk, as opposed to standard deviation, is gaining traction. Ali *et al*. (2021) investigated downside risk in Dow Jones Islamic equity indices, particularly during the COVID-19 crisis, finding that gold served as an effective hedge, decreasing the downside risk of most Islamic equity portfolios [12].

Finally, the convergence of Islamic finance and Environmental, Social, and Governance (ESG) investing represents a major new frontier. Given the inherent ethical screens in Shariah compliance, there is a natural alignment with ESG principles. Alghafes *et al*. (2024) evaluated how ESG practices impact the performance of Islamic banks in the GCC, while Azmi *et al*. (2019) found that investors do not have to sacrifice returns for investing in either Islamic or sustainable equity indices, and that combining the two can be beneficial [13, 14]. This suggests that ESG factors may soon become a standard component of Islamic asset pricing models.

In summary, the literature from 2021-2025 shows a clear progression towards sophisticated, multi-factor asset pricing models for Shariah-compliant stocks. There is a strong consensus on the inadequacy of the traditional CAPM and growing evidence supporting the Fama-French five-factor model as a superior framework. The findings of partial market segmentation underscore the need for Islamic-specific risk factors. Future research is likely to focus on integrating behavioral and ESG factors into these models to further enhance their explanatory power.

2.5. The Intersection of FinTech and Islamic Asset Pricing

The rapid integration of Financial Technology (FinTech) is fundamentally reshaping the landscape of Islamic asset pricing and portfolio management [15]. A critical development is the use of Artificial Intelligence (AI) and machine learning to automate and enhance Shariah-compliant stock screening [16]. Traditional screening methods often rely on static, periodic audits; however, AI systems can process massive datasets, including financial reports, news sources, and market movements, in real-time to continuously monitor compliance with dynamic financial ratios [17]. Furthermore, AI-driven robo-advisors are increasingly utilized to optimize portfolio allocations while strictly adhering to Islamic ethical norms, ensuring funds avoid prohibited sectors like gambling or interest-based products [16].

In the realm of risk assessment and asset pricing, the application of big data analytics has proven transformative [18]. Big data enables Islamic financial institutions to process vast amounts of both structured and unstructured information, facilitating highly accurate, predictive risk evaluations and real-time market anomaly detection [19]. By employing predictive learning and AI-powered algorithms, investors can better forecast future trends and mitigate uncertainties (*gharar*), leading to the development of more resilient and dynamic pricing models [18, 19].

Additionally, blockchain technology and distributed ledgers are addressing the critical need for transparency and trust in Islamic equity markets [20]. Smart contracts provide immutable records of transactions, ensuring that complex financial products automatically comply with Shariah law [21]. When integrated with Environmental, Social, and Governance (ESG) criteria, FinTech platforms facilitate the reliable tracking of sustainability metrics, while AI-driven analytics provide real-time reporting on ESG performance [22]. Together, these FinTech applications not only streamline operational efficiency but also reinforce the ethical and religious foundations of Islamic finance [15, 22].

3. METHODOLOGY

This study employs a Systematic Literature Review (SLR) to synthesize and critically appraise the existing body of knowledge on asset pricing models for Shariah-compliant stocks. In the absence of a primary dataset, an SLR provides a rigorous, replicable, and transparent method for summarizing the findings of a large volume of research, identifying consistencies, contradictions, and areas for future inquiry [23]. The methodology for this review was guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 statement, which ensures a structured and comprehensive approach to the review process [24, 25].

Table 1: Database search strings and filters

Database	Search string	Filters applied	Records
Scopus	TITLE-ABS-KEY ((shariah OR sharia OR syariah OR islamic) W/3 (stock* OR equit* OR share* OR index OR indices OR portfolio* OR "capital market*")) AND TITLE-ABS-KEY ("asset pricing" OR "pricing model*" OR capm OR scapm OR "Fama-French" OR "Fama and French" OR "factor model*" OR multifactor OR "multi-factor" OR "arbitrage pricing" OR carhart OR "risk premi*" OR anomal* OR momentum OR "investor sentiment" OR "downside risk" OR esg)	PUBYEAR > 2020 AND PUBYEAR < 2026; document type: article, review; language: English	111
Web of Science Core Collection (SSCI, SCI-EXPANDED, ESCI)	TS=(((shariah OR sharia OR syariah OR islamic) NEAR/3 (stock* OR equit* OR share* OR index OR indices OR portfolio* OR "capital market*")) AND ("asset pricing" OR "pricing model*" OR CAPM OR SCAPM OR "Fama-French" OR "Fama and French" OR "factor model*" OR multifactor OR "multi-factor" OR "arbitrage pricing" OR Carhart OR "risk premi*" OR anomal* OR momentum OR "investor sentiment" OR "downside risk" OR ESG))	Publication years: 2021–2025; document types: article, review article; language: English	98

Note: Searches run on 16 November 2026. Strings were adapted only for database-specific syntax (W/3 in Scopus; NEAR/3 in Web of Science). Web of Science assigns early-access articles to their year of online publication, so nine of its records first published online in 2024–2025 carry 2026 issue dates.

3.1. Search Strategy and Selection Criteria

The search was conducted in two leading bibliographic databases, Scopus and Web of Science Core Collection, which were chosen for their extensive coverage of high-impact, peer-reviewed journals in the fields of finance, economics, and business. The core search covered articles published between January 2021 and December 2025 and was run on 16 November 2026. The search strings combined three blocks of keywords and their variants, corresponding to the core concepts of the research questions and summarised below. The exact database-specific strings, field codes and filters are reported in Table **1** so that the search can be reproduced.

- **Population**: "Shariah-compliant stock", "Islamic equity", "Islamic capital market"
- **Intervention/Exposure**: "asset pricing", "pricing model", "CAPM", "Fama-French", "APT", "multi-factor model"
- **Outcomes**: "risk premium", "anomalies", "market efficiency", "investor sentiment", "ESG"

Inclusion criteria for the selection of studies were as follows:

1. Peer-reviewed journal articles (including review articles) published in English.
2. Published between January 2021 and December 2025 (core sample; see Section 3.2 for the treatment of earlier studies).
3. Primary focus on asset pricing models, priced risk factors, anomalies, or risk-adjusted performance of Shariah-compliant equities or Islamic equity indices.
4. Published in journals indexed in Scopus or the Web of Science Core Collection; journal quartile (SJR/JCR) was recorded during data extraction rather than used as a filter.

Exclusion criteria included:

1. Conference proceedings, book chapters, dissertations, working papers, and other non-peer-reviewed material.
2. Studies focusing solely on other Islamic financial instruments (*e.g.*, *sukuk*, *takaful*) without a direct link to equity pricing.
3. Studies in which Shariah-compliant equities, or the market valuation of Islamic firms, are not the central focus of the analysis.

3.2. Treatment of Pre-2021 Studies and Supplementary Sources

The core evidence base consists only of studies published between 2021 and 2025 that passed the screening described in Section 3.3. However, a review of a cumulative literature cannot be interpreted without reference to the studies on which recent work builds. Following standard practice in systematic reviews, backward citation searching (snowballing) was therefore applied to the reference lists of the included studies [24]. A pre-2021 study was retained only if it met every substantive inclusion criterion other than the publication window and provides an empirical or theoretical benchmark against which the 2021–2025 evidence is interpreted. Four studies met this condition: Dewandaru *et al*. (2015), Derbali *et al*. (2017), Azmi *et al*. (2019) and Zaremba *et al*. (2020); the last of these was first published online in 2018 and assigned to a 2020 journal issue.

These seminal studies are reported separately (Panel B of Table **2**), are excluded from the PRISMA counts in Figure **1**, and are used to contextualise rather than to establish the review's conclusions; where a conclusion rests mainly on a pre-2021 study, this is stated explicitly in the text. Canonical theoretical works that define the models under review, such as the CAPM, the APT and the Fama–French models, are cited as foundations and are likewise not part of the sample.

Citation searching also identified one study published within the review window that the database strings did not retrieve, because its title, abstract and keywords do not place an Islamic or Shariah term within three words of an equity term: Faisol *et al*. (2022) [7]. It meets all inclusion criteria and is included in the core sample; it is marked in Table **2** and shown separately in Figure **1**. Cheema and Fianto (2024), which was also identified in this way, examines all listed stocks in Malaysia and Indonesia rather than Shariah-screened stocks [11]. It therefore does not meet the third inclusion criterion and is cited as contextual evidence only.

Finally, peer-reviewed asset pricing research on FinTech applications in Islamic equity markets is still scarce. The discussion of FinTech, artificial intelligence and blockchain (Sections 2.5, 4.4 and 4.5) therefore draws on a supplementary set of recent sources identified through a targeted search of Google Scholar. These sources, some of which are conference papers or book chapters, are used for contextual discussion only and do not form part of the systematic sample. The same applies to bank-

Table 2: Characteristics of the reviewed studies

Study	Country / market	Sample period	Sample and data source	Methodology	Principal findings	Research gap identified
Panel A. Core sample, 2021–2025 (n = 46)						
Asset pricing models and risk factors (n = 17)						
Safiullah & Shamsuddin (2021) [8]	Global equity market segments	1996–2017	42 Dow Jones Islamic and matched non-Islamic indices (22 aggregate, 20 global sector); Datastream	FF5; interest-rate- and liquidity-augmented FF5; GRS test	Islamic portfolios outperform after FF5 controls; cost of equity about 2.77 pp lower for Islamic firms	GRS rejections: existing models do not fully price either universe
Özer *et al*. (2021) [28]	Pakistan, Malaysia, Indonesia, Turkey	2012–2020	Top 30 firms of the KMI, KLCI, JII and Participation indices	FF5 vs. FF5 with inflation replacing the risk-free rate	The two specifications perform almost identically; small firms earn higher excess returns	Small samples per market
Faisol *et al*. (2022)† [7]	Indonesia (energy sector)	2016–2020	One stock (Adaro Energy), daily returns; 12-month mudharabah deposit return; Investing.com	SCAPM with zakat, estimated by ARX(1,1)-GARCH(1,1)	Significant risk–return relation (beta about 1.15); mudharabah return is a viable substitute for the risk-free rate	Single stock and single-factor structure
Hasnie *et al*. (2022) [29]	Pakistan	2002–2016	Up to 546 PSX stocks; Islamic and conventional financial-sector portfolios; PSX and Bloomberg	CAPM; FF3; conditional volatility	Risk premia lower for Islamic stocks, with a stronger risk–return relation	Financial sector only
Pramono *et al*. (2022) [30]	Indonesia	2016–2018	24 Investor33 and 17 JII stocks	CAPM-based optimal portfolios	JII optimal portfolio offers lower return and higher risk than Investor33	Descriptive; single-factor model
Puspitasari *et al*. (2022) [31]	Indonesia	2015–2019	164 ISSI stocks	SCAPM variants (inflation, zakat, SBIS); MAD and MSE	SBIS-based SCAPM predicts expected returns most accurately	Single-factor; forecast accuracy only
Subekti *et al*. (2022a) [32]	Indonesia	2009–2021	11 JII70 stocks; Yahoo Finance	Mean–variance and SCAPM with zakat and purification (sukuk rate); Fama–MacBeth second pass	SCAPM with zakat and purification is valid; Shariah versions give higher Sharpe ratios	Single-factor model; small stock sample
Subekti *et al*. (2022b) [33]	Indonesia	2009–2019	Six JII70 stocks	Black–Litterman with SCAPM (zakat, purification)	BL-SCAPM portfolio has a higher Sharpe ratio than BL-CAPM	Portfolio performance only; six stocks
Subekti *et al*. (2022c) [34]	Indonesia	2014–2019; evaluated to September 2020	Six JII stocks; Yahoo Finance	Black–Litterman with inflation-based SCAPM	BL-SCAPM outperforms mean–variance and BL-CAPM portfolios and loses less during the COVID-19 crisis	Portfolio performance only; one SCAPM variant
Abdul Halim (2023) [35]	United States	2000–2019	NYSE, NASDAQ and IEX stocks screened for Shariah compliance	CAPM vs. FF5	Pricing differs between Shariah-compliant and conventional samples and across Shariah groups; FF5 more suitable than CAPM	Factor premia depend on the screening methodology
Li *et al*. (2023) [36]	Indonesia	1991–2022	Stock-level data; 152 candidate factors	Bayesian factor framework	Size and value work across all stocks; quality and profitability alphas exist only among non-Sharia stocks; momentum insignificant	Why factor premia differ under Shariah screening
Qadeer *et al*. (2023) [37]	Pakistan	2016–2021	74 non-financial firms in the KMI All Share Index; Bloomberg	CAPM (Fama–MacBeth); FF3; liquidity-augmented three- and four-factor models; FF5; GRS test	CAPM not validated; multifactor models pass the GRS test; value premium muted in FF5	Risk factors insignificant for several portfolios; small sample
Raza *et al*. (2023) [38]	61 international markets	1996–2018	Stock-level data; DJIM screening rules	Political-risk-tilted portfolios	Shariah-compliant portfolio outperforms its conventional peer by about 8% a year when tilted on political risk	Political risk not tested as a formal factor
Dharani *et al*. (2024) [39]	Indonesia	2018–2023	544 listed stocks	Panel regressions; Shariah risk factor	Shariah portfolio earns higher abnormal returns; a Shariah factor helps explain returns	Short sample; single market

Effendie *et al*. (2025) [40]	Indonesia	2015–2023	Jakarta Islamic Index (JII)	Shariah-adapted Fama–French model	Proposes an updated Shariah-compliant Fama–French model as an alternative to the SCAPM	Single index; model still being refined
Hanif (2025) [41]	Pakistan	2010–2023	KMI-30 and KSE-100 indices; macroeconomic series; State Bank of Pakistan	Johansen cointegration; Granger causality	Islamic index is tied to industrial production and the exchange rate, not to interest rates; the two indices are not cointegrated	Long-run macro factors only; no cross-sectional test
Yunita & Ganesan (2025) [42]	Indonesia	2021–2022	30 JII stocks	APT expected returns; Markowitz optimisation	Fourteen JII stocks enter the optimal portfolio	Short crisis window; no out-of-sample test
Anomalies and return predictability (n = 10)						
AlKhazali *et al*. (2022) [43]	Global, Europe, Asia-Pacific, United States	1996–2019	Islamic equity size indices	Ascending and descending stochastic dominance	A size anomaly exists, but its direction varies by region and investor risk preference	Index-level; no factor adjustment
Hasan *et al*. (2022) [44]	Bangladesh	2011–2020	DSEX and DSEX Shariah indices	GARCH-type models	Most calendar anomalies appear in one or both indices; no Ramadan effect	Index-level; single market
Qamar *et al*. (2022) [45]	Pakistan	2014–2018	57 KMI-30 and KSE-30 firms; 374 dividend announcements; PSX and Business Recorder	Event study (market, market-adjusted and mean-adjusted models)	Returns rise on dividend increases and fall on decreases; Shariah-compliant and conventional stocks react alike	Short event windows; single market
Akbar *et al*. (2024) [46]	Global and regional	1996–2020	Nine Dow Jones Islamic and MSCI conventional indices	Martingale difference tests (adaptive markets)	Return predictability varies over time; no difference between Islamic and conventional indices	Index-level
Almaida *et al*. (2024) [47]	Eight countries in Asia, the Gulf and Africa	2012–2022	Islamic and conventional index returns	GARCH	Islamic events are positively linked to Islamic stock returns in five of eight countries	Event dummies only
Kalimuthu & Shaik (2024) [48]	India	2016–2022	Nifty Shariah indices	OLS; GARCH	Tuesday returns are highest; Ramadan lowers volatility	Index-level
Abdul Halim & Abd Sukor (2025) [49]	United States	1993–2023	Shariah-screened NYSE, AMEX and NASDAQ stocks; 25 size–dividend portfolios	CAPM, FF3, FF5, FF6; local vs. Fama–French factors	Most portfolios show insignificant alphas, with exceptions among larger firms; extra factors add little to the CAPM	Local factors raise explanatory power but leave more significant intercepts
Khurram *et al*. (2025) [50]	Pakistan	2003–2019	All PSX-listed firms, with Shariah-compliant classification; PSX and State Bank of Pakistan	Portfolio sorts; Fama–MacBeth regressions; mispricing-augmented factor models	Idiosyncratic-volatility effect is weak; the premium is positive for Shariah-compliant stocks and any negative effect is confined to non-compliant stocks	Single market; no stock-level investor-type data
Widodo *et al*. (2025) [51]	Indonesia	2008–2022	JII daily returns	ARMA; EGARCH, TARCH and PARCH with calendar dummies	Day-of-week, Monday and week-four effects present; COVID-19 did not change the pattern	Index-level; mixed prior evidence
Ghallabi *et al*. (2026; online 2024) [52]	Indonesia	2000–2022	Jakarta Composite and Jakarta Islamic indices	GJR-GARCH	Monday and positive Ramadan effects only in the Islamic index; turn-of-the-month effect in both	Index-level
Investor sentiment and behavioural pricing (n = 5)						
Al Hashfi *et al*. (2021) [53]	Indonesia	2012–2018	203 IDX firms (105 Islamic); firm-level sentiment index (PCA); Thomson Reuters and CEIC	Fama–MacBeth regressions with Hausman–Taylor estimation	Islamic stocks are less exposed to sentiment-based mispricing than non-Islamic stocks	Single market
Albaity *et al*. (2024) [54]	16 MENA countries	2020–2021	137 listed Islamic and conventional banks	Unconditional quantile regression	Sentiment and policy uncertainty lower bank returns; Islamic bank stocks outperform across quantiles	Bank stocks only; pandemic window
Jawadi *et al*. (2024) [55]	United States	1996–2021	Dow Jones Islamic Market US and Dow Jones Sustainability US indices; Bloomberg	Time-series tests; quantile regression	Sentiment and consumer confidence drive ethical stock returns, asymmetrically and nonlinearly	Index-level

Usman *et al*. (2024) [56]	Indonesia	2015–2020	11 JII firms; Google search volume	Panel regression	Investor attention raises liquidity but not returns; inflation and the exchange rate lower returns	Small sample
Yas *et al*. (2024) [57]	Malaysia	2000–2016	370 additions to and 284 deletions from the Shariah-compliant list	Event study (market model)	Additions earn permanent abnormal returns and volume; deletions bring short-term negative returns	Single market
Risk-adjusted performance and downside risk (n = 12)						
Ali *et al*. (2021) [12]	Six Dow Jones Islamic regional indices	Before and after the COVID-19 bear market	DJ Islamic indices; gold, silver and platinum	DCC; four-moment modified VaR and CVaR; minimum-variance portfolios	Gold lowers the downside risk of most Islamic portfolios (not Asia-Pacific); silver and platinum do not	Downside risk studied for hedging, not as a priced factor
Anjum & Rajput (2021) [58]	Global and regional	1996–2016	Five Islamic (Dow Jones, FTSE) and five MSCI conventional indices	FF5 and q-factor models; rolling OLS	Several Islamic indices show significant, time-varying alphas	Benchmark indices themselves carry alpha
Suryadi *et al*. (2021) [59]	Indonesia	2017–2019	JII and IDX30	Sharpe ratio; difference test	Sharpe ratios differ significantly between JII and IDX30	Short period; single measure
Abadi & Silva (2022) [60]	13 MENA countries	2004–2015	92 Islamic and 344 non-Islamic financial stocks; Datastream	Risk-adjusted measures; multi-factor alphas	Fundamental-weighted portfolios lag the cap-weighted benchmark; Islamic versions give no crisis protection	Financial firms only; results depend on the measure and period
Asutay *et al*. (2022) [2]	World, United States, Europe, Asia-Pacific	2007–2017	Islamic and conventional stock indices	Financial ratio analysis; CAPM-EGARCH	Islamic indices earn higher returns with lower risk in 2007–2009 and 2013–2017; mixed in 2009–2013	Index-level; performance is regime-dependent
Al Rahahleh & Bhatti (2023) [61]	Saudi Arabia	2007–2016	39 locally focused equity mutual funds	Carhart four-factor model	Shariah funds neither beat nor lag their Shariah benchmark (insignificant alphas)	Only one factor model; one country
Tlemsani *et al*. (2023) [62]	Global	2016–2022	Islamic and conventional global equity funds; Bloomberg, Morningstar and Refinitiv	Relative beta; CAPM and FF3; downside risk measures	Islamic portfolios show lower risk exposure and higher returns in most years	Conceptual; small set of funds
Aqeeq & Chamadia (2024) [63]	Pakistan	2008–2018	22 Islamic and 23 conventional equity funds	Sharpe and Treynor ratios; CAPM, FF3, Carhart; market-timing models	Funds fail to beat the market; conventional funds outperform Islamic funds	Leverage and size tilts drive the gap
Ghaemi Asl *et al*. (2024) [64]	Global sector indices	Before and during COVID-19	Conventional and Shariah energy, utilities and ESG indices	18 optimisation methods; Sharpe, Omega and Sortino ratios	Shariah portfolios outperform conventional ones on risk-adjusted measures	No factor-model attribution
Jonwall *et al*. (2024) [65]	India	2017–2023	Shariah, ESG, thematic and conventional indices	Sharpe and Treynor ratios; CAPM, FF3, Carhart	Socially responsible indices, Shariah included, underperform the benchmark on factor-model alphas	Index-level; one emerging market
Ashraf *et al*. (2025) [66]	Malaysia	2009–2021	698 Bursa Malaysia firms; ORBIS; Securities Commission Malaysia compliance lists	CAPM-based alpha, beta and idiosyncratic risk; difference-in-differences with propensity score matching	Firms moving in and out of compliance underperform and carry higher idiosyncratic risk than firms that stay compliant	Single market and regulatory change
Mohanan *et al*. (2026; online 2025) [67]	India	2015–2024	Nifty Shariah indices vs. NIFTY 50	CAPM, FF3, Carhart; Mamba state-space model; wavelet quantile correlation	Static models overstate Shariah risk-adjusted returns; no significant outperformance, but greater stability	Time-varying factor sensitivities
ESG and Shariah screening (n = 2)						
Qoyum *et al*. (2021) [68]	Indonesia	2011–2019	302 IDX stocks (151 ISSI, 17 SRI, 11 Islamic-SRI); Datastream	CAPM, FF3, Carhart, FF5	The combined Islamic-SRI portfolio outperforms the other three	Single market; few Islamic-SRI stocks
Modjo *et al*. (2025) [69]	Indonesia	2019–2020	KOMPAS-100 firms; ESG scores	Event study (CAR); triple-difference test	High-ESG and Shariah-compliant stocks outperform during the COVID-19 crisis	Short crisis window; preliminary results

Panel B. Seminal pre-2021 benchmark studies (identified by backward citation searching; not counted in the core sample)						
Dewandaru *et al*. (2015) [10]	United States	1996–2012	Stocks consistently listed in the Dow Jones Islamic index	Multi-style rotation (momentum, value, quality); augmented Black–Litterman; macroeconomic mimicking portfolios	Combining styles can help Islamic equity portfolios outperform the market	Regime shifts and macroeconomic risk in style premia
Derbali *et al*. (2017) [3]	Theoretical	–	–	Mathematical derivation of a Shariah-compliant CAPM	Provides a Shariah-compliant alternative to the interest-based risk-free rate	Requires empirical validation
Azmi *et al*. (2019) [14]	Global indices	Multiple regimes (boom, bull market, subprime crisis)	Islamic, sustainability and Islamic-sustainability indices	Bayesian model averaging; efficient frontier; Markov switching; wavelets	No performance penalty for Islamic or sustainable investing; combining the two is more rewarding	Overlap between Shariah and ESG screens
Zaremba *et al*. (2020) [4]	Middle East	1997–2017	More than 1,500 stocks; 167 anomalies	CAPM, FF3, Carhart, FF5; Islamic vs. market-wide factors	Only 27 of 167 anomalies profitable; FF5 performs best; Islamic factors outperform market-wide factors (partial segmentation)	Evidence confined to one region

Note: † identified through citation searching. "Online" gives the year of first online publication for articles assigned to a 2026 issue. FF3/FF5/FF6 = Fama–French three-, five- and six-factor models; GRS = Gibbons–Ross–Shanken test; DCC = dynamic conditional correlation; JII = Jakarta Islamic Index; ISSI = Indonesia Sharia Stock Index; KMI = Karachi Meezan Index; PSX = Pakistan Stock Exchange; IDX = Indonesia Stock Exchange; SBIS = Bank Indonesia Sharia certificates; DJIM = Dow Jones Islamic Market.

level evidence on ESG and financial performance [13], which informs the ESG discussion but lies outside the equity-pricing scope of the core sample.

3.3. Study Selection

Figure **1** summarises the selection process using the PRISMA 2020 flow diagram [24]. The database searches returned 209 records (Scopus: 111; Web of Science: 98). After 73 duplicates were removed (72 records indexed in both databases and one article indexed twice in Web of Science), 136 records were screened on titles and abstracts, of which 33 were excluded because they do not concern the pricing or performance of Shariah-compliant equities. The remaining 103 reports were sought for retrieval. The full text of one report, Alahouel and Loukil (2025), could not be obtained and was therefore not assessed. The full texts of the other 102 articles were assessed for eligibility, and 57 were excluded for the reasons shown in Figure **1**. Most of these are studies of spillovers, connectedness, hedging or volatility that involve Islamic indices but do not test a pricing model, risk factor, anomaly or risk-adjusted performance. Three further studies were excluded because their samples are not Shariah-screened: two examine the broad market indices of Muslim-majority countries [26, 27], and one classifies mainly conventional banks as Sharia banks. The database search therefore contributes 45 studies. Together with the one study identified through citation searching (Section 3.2), the core sample comprises 46 studies published between 2021 and 2025, supplemented by four seminal pre-2021 studies. Screening and data extraction were performed by the author; records whose eligibility was uncertain at the title-and-abstract stage were carried forward to full-text assessment, and reasons for exclusion were recorded at each stage.

3.4. Data Extraction and Synthesis

A structured data extraction form was used to collect key information from each included study, including:

- Author(s) and publication year
- Journal and its ranking (Q1/Q2)
- Research objective(s)
- Methodology and model(s) used (*e.g.*, CAPM-EGARCH, Fama-French 5-Factor)
- Sample, data source, country or region, and sample period
- Key findings and conclusions
- Identified research gaps or suggestions for future research

To synthesize the extracted data, a narrative approach was adopted. The findings were organized thematically to align with the research questions of this paper. This involved identifying the dominant pricing models, comparing their efficacy, summarizing the evidence on market segmentation, and cataloging the influence of newly identified risk factors such as behavioral biases

Identification	Records identified from databases (n = 209) Scopus (n = 111) Web of Science (n = 98)	Records removed before screening: Duplicate records (n = 73)
	↓	
Screening	Records screened on title and abstract (n = 136)	Records excluded (n = 33)
	↓	
	Reports sought for retrieval (n = 103)	Reports not retrieved (n = 1)
	↓	
	Full-text reports assessed for eligibility (n = 102)	Reports excluded, with reasons: No asset pricing, risk-factor or performance focus (n = 45) Herding or survey study without a pricing test (n = 5) Shariah-compliant equities not the central focus (n = 2) Sample not Shariah-screened (n = 3) Non-equity Islamic instruments only (n = 1) Broad review without an asset pricing focus (n = 1)
	↓	
Included	Studies included from the database search (n = 45) Studies in the core sample, 2021–2025 (n = 46)	Identified through citation searching: Study within the review window, added to the core sample (n = 1) Seminal pre-2021 studies, reported in Panel B of Table 2 (n = 4)

Figure 1: PRISMA 2020 flow diagram of study selection (adapted from Page *et al*., 2021 [24]).

and ESG considerations. This thematic synthesis allows for a critical discussion of the literature, highlighting the evolution of thought and identifying the current consensus and points of contention within the field. The extracted characteristics of every reviewed study are reported in Table **2**.

4. RESULTS & DISCUSSION

This systematic review of 46 studies published between 2021 and 2025, interpreted alongside four seminal pre-2021 benchmark studies, reveals several critical trends and insights into the asset pricing of Shariah-compliant stocks. The findings are synthesized and discussed below, focusing on the evolution of pricing models, the evidence for market segmentation, and the role of an expanded set of risk factors.

Table **2** reports the characteristics of each reviewed study: its country or market, sample period, sample and data source, methodology, principal findings and the research gap it identifies. Panel A groups the core sample into five themes: asset pricing models and risk factors (17 studies), anomalies and return predictability (10), investor sentiment and behavioural pricing (5), risk-adjusted performance and downside risk (12), and ESG and Shariah screening (2). The evidence is geographically concentrated: 18 of the 46 studies include Indonesian data and seven include Pakistani data, while only three focus on the United States. Many studies also rely on index-level data from a single market, and only a minority test models on stock-level cross-sections, which limits what can be inferred about priced factors.

4.1. The Ascendancy of Multi-Factor Models

The most consistent finding from the recent literature is the shift away from the single-factor CAPM towards more sophisticated multi-factor models. The Fama-French five-factor model has emerged as the most widely used benchmark for explaining the cross-section of returns in Islamic equity markets. Most studies report greater explanatory power over the traditional CAPM and even the earlier three-factor and four-factor models [4, 8, 35]. This indicates that the returns of Shariah-compliant stocks are not merely a function of market risk (beta), but are also significantly influenced by factors related to size (SMB), value (HML), profitability (RMW), and investment (CMA). This pattern holds in the Middle East [4], in global equity segments [8] and among US Shariah-compliant firms [35]. As Section 4.2 shows, however, the five-factor model's advantage is not unconditional, and its status as the preferred framework should be understood as relative rather than definitive.

The wider 2021–2025 sample confirms this direction but also shows how uneven the evidence is. In Pakistan, Qadeer *et al*. (2023) reject the CAPM for Shariah-compliant stocks, while multifactor models pass the GRS test and the value premium is muted in the five-factor model [37]; Hasnie *et al*. (2022) find lower risk premia but a stronger risk–return relation for Islamic financial stocks under the CAPM and the three-factor model [29]. In

Indonesia, Li *et al*. (2023) examine 152 candidate factors and report that size and value premia appear across all stocks, whereas quality and profitability alphas exist only among non-Sharia stocks [36], and Dharani *et al*. (2024) show that a Shariah risk factor helps explain returns [39]. Factor premia therefore appear to differ inside and outside the Shariah-compliant universe, which is a more specific claim than the general superiority of any one model. Much of the remaining evidence applies a single model to one national index over a short window (Table **2**), so it documents usage rather than comparative performance.

4.2. Critical Comparison of Competing Asset Pricing Models

Although the Fama–French five-factor model is the most frequently adopted benchmark in the reviewed literature, a balanced reading of the evidence suggests that no single model dominates across all assumptions, samples and uses. Table **3** compares the five model families in terms of their assumptions, strengths, limitations and practical applicability to Shariah-compliant equities.

The CAPM [70] remains attractive for its parsimony and its continued use in cost-of-equity estimation, but its reliance on an interest-bearing risk-free asset is doctrinally problematic. The SCAPM resolves the doctrinal problem by substituting a Shariah-compliant benchmark, such as a *mudharabah* profit rate [7] or a mathematically derived alternative [3], yet it inherits the CAPM's single-factor structure. Other proposed benchmarks include inflation, zakat-adjusted rates, the sukuk rate and Bank Indonesia Sharia certificates [31, 32, 34]; Puspitasari *et al*. (2022) find the last of these the most accurate for Indonesian stocks [31], and Özer *et al*. (2021) show that replacing the risk-free rate with inflation leaves five-factor results almost unchanged [28]. The choice of proxy also matters: if profit rates on Islamic instruments move closely with conventional benchmark rates, the substitution may be more nominal than economic. Notably, the CAPM is not uniformly rejected. Abdul Halim and Abd Sukor (2025) find that it explains average excess returns for most dividend-sorted US Shariah-compliant portfolios, with additional factors adding only marginal improvement [49].

The APT [71] is, in principle, the most flexible framework for Islamic markets because it allows priced risks to be defined by macroeconomic sources, such as inflation, oil prices or industrial production, to which Shariah-compliant firms are exposed through their real-sector

Table 3: Critical comparison of asset pricing models applied to Shariah-compliant equities

Model	Key assumptions	Strengths	Limitations	Shariah compatibility and evidence in Islamic markets
CAPM [70]	Single-period mean–variance investors; borrowing and lending at an interest-bearing risk-free rate; efficient market portfolio	Parsimonious and intuitive; standard benchmark for cost of equity	Single factor fails to explain size, value and momentum effects	Interest-based risk-free rate conflicts with the prohibition of *riba*; nonetheless explains most dividend-sorted US Shariah portfolios [49]
SCAPM [3, 7]	As CAPM, with the risk-free rate replaced by a Shariah-compliant benchmark (*e.g.*, *mudharabah* profit rate)	Doctrinally consistent; easy to implement	Still single-factor; choice of proxy is somewhat arbitrary, and profit rates may track conventional rates; few cross-sectional tests	Supported for Indonesia [7, 31]; little multi-market evidence
APT [71]	Returns follow a linear multi-factor process; no arbitrage; factors not specified ex ante	Flexible; can incorporate macroeconomic risks (inflation, oil, output) relevant to real-sector Islamic firms	Factor identity left to the researcher; results sensitive to factor choice; needs long samples	Rarely applied directly: portfolio use in Indonesia [42] and macro-factor evidence [41]; earlier macro-mimicking portfolios [10]
FF3 and Carhart [72, 73]	Size, value (and momentum) proxy for priced risks or persistent mispricing	Capture well-documented anomalies; factor data widely available	Empirically motivated; momentum crashes; factors usually built from a mixed universe	Outperformed by FF5 in the Middle East [4]; momentum remains relevant [10]
FF5 / FF6 [74]	Valuation identity motivates profitability (RMW) and investment (CMA) factors	Highest explanatory power in most reviewed studies [4, 8, 35]	Still rejected by GRS tests [8, 9]; FF5 omits momentum; only marginal gains in some samples [49]	Shariah screens tilt portfolios towards profitable, low-leverage firms, affecting RMW/CMA loadings; local Shariah-universe factors improve fit [4, 49]

orientation. Its weakness is that it does not specify the factors ex ante, so results depend on the researcher's choice. Direct applications remain scarce in the reviewed sample. Yunita and Ganesan (2025) use APT expected returns to build portfolios of Jakarta Islamic Index stocks [42], and Hanif (2025) finds that Pakistan's Islamic index responds to industrial production and the exchange rate but not to interest rates [41]. The macroeconomic mimicking portfolios of Dewandaru *et al*. (2015) are an earlier operationalisation [10].

Characteristic-based models, from the three-factor [72] and Carhart four-factor [73] models to the five-factor model [74], provide the highest explanatory power in most reviewed studies [4, 8, 35]. Their limitations are nonetheless material. First, they are empirically motivated, and whether their factors capture risk or mispricing remains debated. Second, even the five-factor model is rejected by the GRS test [9] for both Islamic and non-Islamic portfolios [8]. Third, Shariah screens mechanically tilt portfolios towards low-leverage, profitable firms, so loadings on the profitability (RMW) and investment (CMA) factors partly reflect the screening rule rather than an independent risk premium. Fourth, factors built from a mixed universe may mis-measure Shariah-specific risk: local factors constructed from the Shariah-compliant universe improve explanatory power [4] but can also leave more significant intercepts [49].

For practitioners, the appropriate model therefore depends on the purpose. SCAPM-type models offer a doctrinally consistent cost-of-capital benchmark; local, Shariah-universe multi-factor models are better suited to performance attribution and fund evaluation; and APT-style or conditional models are preferable when macroeconomic or regime-dependent exposures are the object of interest.

4.3. Compelling Evidence for Market Segmentation

The debate between market integration and segmentation appears to be leaning towards at least partial segmentation. A pivotal finding, emphasized by Zaremba *et al*. (2020), is that pricing factors constructed exclusively from a universe of Islamic stocks provide a better explanation of returns than market-wide factors derived from a mixed universe of conventional and Islamic stocks [4]. This supports the hypothesis that Shariah-compliant stocks constitute a partially segmented market, driven by a unique set of risk factors that are not fully captured by conventional models. This segmentation is likely due to the Shariah screening process itself, which filters out companies based on their business activities (*e.g*., alcohol, gambling) and financial ratios (*e.g*., leverage, interest-bearing debt). This screening creates a distinct investment universe with different risk-return characteristics, leading to the existence of an "Islamic risk premium" or at least a different factor loading. This conclusion should nevertheless be read with caution, because the strongest evidence comes from a single pre-2021 study of Middle Eastern markets; more recent US evidence that local Shariah factors raise explanatory power [49] is supportive but not conclusive.

Three studies in the core sample add direct evidence on the mechanism. Yas *et al*. (2024) show that stocks added to Malaysia's Shariah-compliant list earn permanent abnormal returns and higher trading volume, while deletions suffer short-term negative returns, which points to a distinct investor clientele whose demand moves prices [57]. Ashraf *et al*. (2025) find that firms moving in and out of compliance underperform those that remain compliant [66]. The factor differences documented for Indonesia [36, 39] likewise indicate that screening changes which characteristics are priced. Evidence on performance is more mixed. Islamic indices show time-varying alphas against five-factor and q-factor benchmarks [58], yet Shariah indices in India do not outperform once factor exposures or time-varying sensitivities are allowed for [65, 67], and Shariah-compliant equity funds in Saudi Arabia and Pakistan do not beat their benchmarks [61, 63]. Segmentation in pricing therefore does not imply a reliable performance advantage.

This finding has profound implications for investors. It suggests that simply applying conventional asset pricing models to Islamic portfolios is suboptimal. Instead, investors and fund managers should utilize models with factors derived from a purely Shariah-compliant universe to achieve more accurate risk assessment and performance attribution.

4.4. The Role of Anomalies, Behavior, and Downside Risk

While multi-factor models explain a significant portion of returns, they do not capture all market behavior. The literature confirms the persistence of well-known anomalies in Islamic markets, particularly those related to value and momentum [4, 10]. This suggests that strategies based on buying undervalued stocks and stocks with strong recent performance can still generate abnormal returns in the ICM. By contrast, Abdul Halim and Abd Sukor (2025) find that dividend-based strategies

generally do not produce significant alphas for US Shariah-compliant stocks, with exceptions concentrated among larger firms [49], suggesting that not all conventional anomalies survive Shariah screening.

Calendar effects are the most frequently tested anomalies in the core sample. Day-of-the-week and turn-of-the-month effects are reported for Islamic indices in Bangladesh and Indonesia [44, 51, 52], and Ramadan or other Islamic-calendar effects are found in several markets, although their sign and significance vary across countries [47, 48]. Related studies of the broad market indices of Muslim-majority countries, which fall outside the core sample because the indices are not Shariah-screened, report holy-day effects but no significant lunar-cycle effect on returns [26, 27]. Beyond the calendar, AlKhazali *et al*. (2022) document a size anomaly in Islamic indices whose direction differs by region [43], Khurram *et al*. (2025) find that the idiosyncratic-volatility effect is weak in Pakistan and that the premium is positive for Shariah-compliant stocks [50], and Akbar *et al*. (2024) find that return predictability varies over time but not between Islamic and conventional indices [46]. Most of these studies use index-level data and do not adjust for factor exposures, so it remains unclear whether the patterns survive in stock-level tests.

The field is also beginning to incorporate insights from behavioral finance. The work of Cheema and Fianto (2024) on investor sentiment highlights that psychological biases and market sentiment can drive pricing anomalies, a factor not accounted for in traditional rational asset pricing models [11]. This opens up a new avenue for research into how sentiment interacts with fundamental risk factors in the ICM.

The mechanism behind this sentiment effect is especially relevant to the ICM. Sentiment-driven mispricing is expected to concentrate in stocks that are hard to arbitrage and in the short leg of anomaly portfolios, because overpricing is harder to correct than underpricing when short selling is costly [75, 76]. Shariah-compliant investors face structural limits to arbitrage: conventional short selling is generally impermissible, and the use of leverage and derivatives is restricted. The closest available evidence comes from outside the core sample: Cheema and Fianto (2024) find that anomaly returns in Malaysia and Indonesia are stronger following high sentiment because the overpriced short leg earns lower returns [11]. Their sample covers all listed stocks rather than Shariah-screened stocks, so the result is consistent with this mechanism but does not test it for Shariah-compliant equities. Within the core sample, the evidence is not one-directional. Al Hashfi *et al*. (2021) find that Indonesian Islamic stocks are less exposed to sentiment-based mispricing than non-Islamic stocks, arguing that the prohibition of interest, speculation and excessive leverage reduces such mispricing [53], while Jawadi *et al*. (2024) show that sentiment drives US Islamic index returns asymmetrically across market states [55]. Screening may thus remove the most sentiment-prone firms while arbitrage limits slow the correction of whatever mispricing remains. Future Islamic asset pricing models may therefore need to treat sentiment and limits to arbitrage as state variables that condition factor premia, rather than as separate anomalies.

Furthermore, there is a growing recognition of the importance of downside risk as a more relevant risk measure for many investors, especially in the context of the demonstrated resilience of Islamic funds during crises. The study by Ali *et al*. (2021) on downside risk in Dow Jones Islamic indices during the COVID-19 pandemic is a prime example. Their finding that gold acts as a hedge against downside risk provides practical guidance for portfolio construction, particularly for risk-averse investors [12].

In practice, these theoretical insights into market anomalies and risk management are increasingly operationalized through advanced FinTech platforms [77]. Institutional investors and fund managers now employ predictive analytics and machine learning algorithms for real-time anomaly detection, enabling them to rapidly identify and capitalize on fleeting value and momentum premiums within the Islamic Capital Market [78]. On the retail side, the rise of Shariah-compliant robo-advisors, such as Wahed Invest, Sarwa, and dedicated ethical portfolios on platforms like StashAway, has democratized access to algorithm-driven equity investments [79]. These platforms utilize AI to automate portfolio construction and dynamic rebalancing, ensuring strict, continuous adherence to Islamic screening criteria while optimizing for risk-adjusted returns [80]. By mitigating human behavioral biases and providing automated downside risk management, these digital wealth managers directly address the psychological factors and downside risk concerns highlighted in recent behavioral finance literature.

Beyond these operational applications, machine learning also changes how Islamic asset pricing research itself can be conducted. Penalised regressions, tree-based methods and neural networks can handle large sets of firm characteristics and nonlinear interactions, and they

substantially improve return prediction in conventional markets [81]. Their transfer to Shariah-compliant universes is not straightforward. The investable cross-section is smaller and changes as firms move in and out of compliance, which raises the risk of overfitting, and black-box predictions are difficult to justify to Shariah supervisory boards that must approve investment processes. Interpretable machine learning combined with economically motivated factors is therefore a more promising direction than purely predictive models.

4.5. The Convergence with ESG and Sustainable Finance

The natural alignment between the ethical principles of Shariah and the objectives of Environmental, Social, and Governance (ESG) investing is a major emerging theme. Recent studies are exploring the financial implications of this convergence. The findings suggest that investors do not face a performance penalty for adhering to either Islamic or sustainability principles, and that a combined approach may even be beneficial [14]. As ESG criteria become more standardized and integrated into investment analysis, it is highly probable that ESG-related factors will be formally incorporated into the next generation of Islamic asset pricing models. This reflects a broader shift in finance towards recognizing that non-financial factors can have a material impact on risk and returns.

Crucially, this integration of ethical and sustainable criteria is increasingly facilitated by advanced FinTech applications. The reliance on traditional, self-reported sustainability metrics is being superseded by AI-based ESG scoring, which utilizes machine learning to scrape and analyze alternative data sources, such as satellite imagery, supply chain records, and real-time news, for a more objective and dynamic evaluation of a company's environmental and social impact. Furthermore, digital compliance monitoring tools now enable Islamic fund managers to simultaneously track adherence to both Shariah screening parameters and dynamic ESG thresholds without manual bottlenecking. By leveraging FinTech-enabled portfolio optimization algorithms, investors can ingest these complex, multi-dimensional data points to construct sophisticated portfolios that maximize risk-adjusted returns while strictly satisfying both religious and sustainability mandates.

Within the core sample, Qoyum *et al*. (2021) find that a portfolio combining Islamic and socially responsible screens outperforms Islamic-only, SRI-only and conventional portfolios in Indonesia [68], and Modjo *et al*. (2025) report that high-ESG, Shariah-compliant stocks outperformed during the COVID-19 crisis [69]. Both are single-market results, and neither tests ESG as a priced factor.

From an asset pricing perspective, the convergence of ESG and Shariah principles has two testable implications. First, if investors derive non-pecuniary utility from holding sustainable or Shariah-compliant assets, equilibrium models predict that such assets earn lower expected returns, reflecting a lower cost of capital, while unexpected shifts in ethical demand can produce temporary outperformance [82]. The lower cost of equity documented for Islamic firms [8] is consistent with this view. Second, ESG ratings diverge substantially across providers [83], so ESG factors built from a single rating source may be fragile. Islamic asset pricing studies that incorporate ESG should therefore test robustness across rating providers and distinguish the Shariah screen from the ESG screen, since the two overlap only partially: Shariah screens exclude interest-based finance and particular industries but say little about environmental performance.

4.6. Synthesis of Key Findings

Taken together, Tables **2** and **3** point to a dynamic and maturing field. The asset pricing of Shariah-compliant stocks is moving beyond simple adaptations of conventional models towards a more holistic framework that acknowledges the unique characteristics of the Islamic investment universe. The evidence for market segmentation is compelling, and the future of Islamic asset pricing models will likely involve a multi-factor approach that integrates fundamental, behavioral, and sustainability-related risk factors.

5. CONCLUSION & FUTURE WORK

This systematic literature review has synthesized the most recent academic research (2021-2025) on the asset pricing of Shariah-compliant stocks, revealing a field that is rapidly maturing. The findings indicate a clear paradigm shift from the simple adaptation of conventional models to the development of more sophisticated, multi-factor frameworks tailored to the unique characteristics of the Islamic capital market. The traditional CAPM, with its reliance on an interest-based risk-free rate, is now widely considered inadequate. In its place, the Fama-French five-factor model has emerged as the most widely adopted and, in most samples, the best-performing framework for explaining the cross-section of Islamic equity returns.

One of the most significant contributions of the recent literature is the compelling evidence for the partial segmentation of Islamic equity markets. The consistent finding that pricing factors derived from a purely Shariah-compliant universe have greater explanatory power than market-wide factors confirms that the screening process itself creates a distinct investment environment. This necessitates the use of localized, Islamic-specific models for accurate risk assessment and performance attribution. Furthermore, the literature confirms the persistence of value and momentum anomalies and is beginning to integrate new dimensions of risk, including investor sentiment and downside risk measures, which have proven particularly relevant during periods of market crisis.

The convergence of Islamic finance with ESG principles represents a promising frontier. The inherent ethical alignment between the two domains suggests that ESG factors will likely become a standard component of future Islamic asset pricing models, reflecting a broader trend towards sustainable and responsible investing.

ORIGINAL CONTRIBUTION

This review advances the literature in three ways. First, to the best of the author's knowledge, it is the first systematic review to focus specifically on the asset pricing models applied to Shariah-compliant equities in the post-2020 period, whereas earlier reviews survey the Islamic capital market as a whole [5, 6]. Second, it moves beyond the question of which model fits best and offers a critical comparison of the assumptions, strengths, limitations and Shariah compatibility of the CAPM, SCAPM, APT, Carhart and Fama–French models (Table **3**). Third, it contributes to theory by proposing a unifying interpretation of the evidence: Shariah screening creates a distinct investment universe, and this screening-induced segmentation explains why factors built from the Shariah universe outperform market-wide factors, why profitability and investment loadings differ for Islamic portfolios, and why limits to arbitrage make sentiment-driven mispricing particularly relevant in the ICM. This interpretation links findings that the literature has so far treated separately and generates testable hypotheses for future research.

PRACTICAL AND POLICY IMPLICATIONS

Islamic financial institutions and portfolio managers. Performance evaluation and fund benchmarking should rely on factors constructed from the Shariah-compliant universe rather than on conventional factors, because conventional benchmarks mix compliant and non-compliant stocks and can produce misleading alphas [8, 4]. Managers should also report factor exposures, since part of an Islamic fund's apparent outperformance may reflect screening-induced tilts towards profitable, low-leverage firms rather than managerial skill. The downside-risk evidence supports gold as a Shariah-compliant hedge, particularly during crises [12].

Regulators and capital market authorities. Because screening rules shape the investable universe, and therefore factor premia, regulators that set or approve screening methodologies should consider their pricing and liquidity consequences, including the effects of index reconstitution when firms move in or out of compliance. Supporting the publication of standardised Shariah-compliant factor data would lower the cost of rigorous performance evaluation and improve the comparability of fund disclosures.

Shariah supervisory boards. The evidence that SCAPM-type models can replace the interest-based risk-free rate [7, 3] gives boards a doctrinally consistent basis for approving cost-of-capital and valuation methods. As AI-based screening and robo-advisory spread, boards will also need standards of model transparency and auditability, so that algorithmic decisions can be explained and verified against Shariah requirements.

Policymakers and standard setters. The partial alignment between Shariah and ESG principles [14, 13] suggests scope for joint Shariah–ESG disclosure frameworks. Given the divergence of ESG ratings [83], standard-setting bodies such as AAOIFI and the IFSB could clarify how ESG criteria relate to Shariah screening, reducing reliance on inconsistent third-party scores.

LIMITATIONS

The review is restricted to English-language articles indexed in two databases, screening and extraction were conducted by a single reviewer, the core sample is concentrated in Indonesia and in index-level studies, and the discussion of FinTech relies partly on supplementary, non-systematic sources. These limitations call for caution in generalising the findings, particularly for the emerging themes.

FUTURE RESEARCH DIRECTIONS

Based on the gaps and trends identified in this review, several avenues for future research are recommended:

1. **Development of a Unified Islamic Asset Pricing Model**: While the Fama-French five-factor model is

currently the best fit, the field would benefit from the development of a consensus-based, multi-factor model that incorporates uniquely Islamic factors beyond the standard financial ones. This could include factors related to the intensity of Shariah screening, levels of debt, or even measures of social trust.

2. **Exploring the Impact of New Screening Technologies**: With the advent of AI and advanced data analytics, Shariah screening methodologies are becoming more dynamic. Research is needed to understand how these new technologies and the resulting changes in index construction affect stock prices, liquidity, and risk factor loadings.
3. **Dynamic and Conditional Models**: Most studies still rely on static models. Future research should employ more dynamic, time-varying models (*e.g.*, conditional CAPM, GARCH-based models) to better capture the changing risk exposures of Islamic stocks across different market states and economic cycles.
4. **Integration with Macroeconomic Factors**: While many studies focus on firm-level characteristics, more research is needed on how macroeconomic variables (*e.g.*, inflation, oil prices, geopolitical risk) interact with the specific risk factors of Shariah-compliant stocks, particularly in a multi-country framework.
5. **Behavioral Finance in the ICM**: The role of investor sentiment and behavioral biases in Islamic markets is still an emerging area. Deeper investigation into how these psychological factors influence asset prices and contribute to market anomalies would be a valuable contribution.
6. **FinTech-Driven Asset Pricing and Monitoring:** As digital transformation accelerates; future research must explicitly explore the integration of financial technology into Islamic capital markets [84]. Studies should investigate the application of Artificial Intelligence (AI) and Machine Learning (ML) to develop dynamic, time-varying asset pricing models capable of processing massive datasets for real-time risk assessment and market anomaly detection [85]. Furthermore, there is a critical need to examine how blockchain technology and distributed ledgers can enhance transaction transparency, auditability, and trust in Shariah-compliant equities by providing immutable records [86]. Finally, researchers should focus on the development of AI-enabled FinTech platforms for real-time Environmental, Social, and Governance (ESG) risk monitoring, ensuring that Islamic portfolios continuously and dynamically align with both global sustainability mandates and the ethical objectives of *Maqasid al-Shariah* [87].

In conclusion, the asset pricing of Shariah-compliant stocks is a vibrant and evolving field. By moving towards more nuanced, multi-factor models that embrace the unique principles of Islamic finance, researchers and practitioners can better navigate the opportunities and challenges of this rapidly growing global market.

CONFLICTS OF INTEREST STATEMENT

The author declared no conflicts of interest.

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