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ARE ISLAMIC INDICES A VIABLE INVESTMENT AVENUE? A FACTOR-BASED ANALYSIS OF THE US MARKET

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ABSTRACT

This study is motivated by the ongoing debate on whether Shariah-compliant investment screening constrains portfolio performance relative to conventional benchmarks, particularly in developed capital markets such as the United States. Although Islamic equity indices have gained prominence, empirical evidence on their risk-adjusted performance remains mixed and often sensitive to market conditions and methodological choices. The study investigates whether Islamic indices constitute a viable investment avenue by empirically comparing the performance of a Shariah-compliant exchange-traded fund (SPUS) with its conventional counterpart (SPY) in the US equity market. This study employs monthly return data for both ETFs covering the period from January 2020 to December 2023, along with market, size, value and momentum factors obtained from the F. French Data Library. Risk-adjusted performance is evaluated using Sharpe, Treynor, Information, and M-squared ratios. At the same time, return attribution is examined using the Carhart four-factor model supported by sub-period and bootstrap robustness analyses. The results show that SPUS generated an annualized return of 16.31% compared to 13.37% for SPY, with comparable volatility, and achieved a higher Sharpe ratio (0.7238 versus 0.5829). However, the estimated alpha of 0.0028 is statistically insignificant (p-value = 0.1048), and the 95% bootstrap confidence interval includes zero. The findings of this study suggest that the observed outperformance of the Islamic index is quantitatively explained by its significant exposure to large-cap growth factors, rather than by a statistically significant abnormal return.

INTRODUCTION

Over the past two decades, Islamic finance has evolved from a niche market into a significant component of the global financial system. Grounded in ethical principles that prohibit investment in industries such as alcohol, gambling, and conventional finance, Shariah-compliant investing has attracted growing interest from both faith-based and ethically minded investors. This expansion has spurred a critical academic and practical question: Does applying a Shariah-compliant screen, which necessarily restricts the investment universe, lead to a performance penalty, an advantage, or a result that is statistically indistinguishable from conventional investing?

While numerous studies have explored this question, the empirical evidence remains inconclusive, with findings often varying across different markets and time periods. This lack of consensus highlights the need for continued research to understand the precise risk and return characteristics of faith-based investing in major capital markets.

This study aims to contribute to this ongoing debate by extending the robust methodology of Alam and Ansari (2020), who conducted a comprehensive empirical analysis of Islamic and conventional indices in India. By applying and enhancing their approach for the United States, the world's largest and most developed capital market, this paper seeks to determine whether their findings of no significant risk-adjusted performance difference hold in a different economic environment. This research will analyze the performance of a prominent Shariah-compliant US ETF relative to its conventional S&P 500 counterpart to identify the sources of its returns and its exposure to common risk factors.

The remainder of this paper is organized as follows. Section 2 provides a review of the relevant literature on the performance of Islamic indices. Section 3 describes the data and the empirical methodology used for the analysis, including the risk-adjusted performance measures and the multi-factor models. Section 4 presents the empirical results of the comparative analysis and the robustness tests. Section 5 discusses the findings in the context of previous studies and explores their theoretical and practical implications. Finally, Section 6 concludes the paper with a summary of the key findings and

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suggestions for future research.

LITERATURE REVIEW

The academic literature on the performance of Islamic equity indices presents a complex and often contradictory landscape. Early research produced mixed results, with some studies finding outperformance, some underperformance, and many finding no statistically significant difference compared to conventional benchmarks. However, a more recent, methodologically rigorous stream of research has begun to converge on a more nuanced conclusion: that the performance of Islamic indices is primarily driven by their inherent exposure to specific market factors, rather than by a unique "Islamic alpha."

The foundational study for this paper, Alam and Ansari (2020), provides a clear example of this modern consensus. In their single-country survey of the Indian market, they analyzed four Islamic and three conventional indices using a comprehensive suite of metrics, including the Sharpe Ratio, Treynor Ratio, and the (Carhart, 1997) four-factor model. While simple risk-adjusted ratios suggested slightly superior performance for the Islamic indices, the multi-factor regression analysis showed an insignificant alpha. The outperformance was instead explained by the indices' systematic tilts towards small-cap and growth stocks, demonstrating that factor exposure, not a unique Shariah effect, was the key driver of performance.

This factor-based explanation is strongly supported by recent cross-country research. Zaimi et al. (2023) conducted a study across five ASEAN countries, employing the Fama & French (1993) five-factor model to analyze the performance of Islamic indices during the COVID-19 pandemic. They found that while the indices exhibited strong defensive characteristics and lower downside risk, their returns were fully captured by exposure to quality and low-volatility factors. After accounting for these factor tilts, no significant alpha remained, reinforcing the conclusion that the Shariah screening process creates a specific factor profile rather than a source of unexplained excess returns.

This finding is mirrored in the parallel field of ESG investing, which shares a similar screening-based methodology. A global, cross-country study by Bofinger et al. (2022) on a large sample of ESG funds found that their recent outperformance was not due to a unique "ESG alpha." Instead, their performance attribution analysis showed it was a direct result of the funds' structural tilts towards high-quality growth and technology stocks, which were highly favored in the post-pandemic market environment. This provides a powerful theoretical parallel, suggesting that any rules-based screening, whether for Shariah or ESG compliance, will primarily manifest its impact through factor exposures. However, the literature is not unanimous. Some studies, particularly those focused on specific regions, have found significant alpha. Umar et al. (2022), in a cross-country study of six Gulf Cooperation Council (GCC) nations, employed quantile regression to assess performance across different market conditions. Their findings indicated a positive and significant "Shariah alpha," particularly during bull markets and periods of high oil prices. This suggests that in specific economic regimes or market structures, the Shariah screening process may generate outperformance that standard factor models do not fully capture. The conflicting findings between studies like Umar et al. (2022) and the broader consensus highlight the critical importance of market context and methodological rigor. The present study builds upon this literature by applying the robust, factor-based framework of Alam and Ansari (2020) to the unique structure of the US market, seeking to determine whether the performance of its Islamic indices is also a function of factor exposure, and to identify the specific factors that drive its returns.

MATERIALS AND METHODS

Data and Methodology

This study extends and enhances the methodological framework established by Alam and Ansari (2020) by applying it to the US market. The analysis uses 48 monthly observations from January 2020 to December 2023. All data are publicly available, with ETF prices sourced from Yahoo Finance and academic risk factors from the Kenneth F. French Data Library.

Data and Variables

The analysis compares two prominent Exchange-Traded Funds (ETFs) that serve as proxies for their respective indices: the SPDR S&P 500 Sharia Industry Exclusions ETF (SPUS) for the Islamic index, and the SPDR S&P 500 ETF Trust (SPY) for its conventional counterpart. The variables used are defined in Table 1.

Table 1. Description of Variables

Variable	Ticker/Symbol	Type	Description & Purpose
Islamic Index Return	SPUS	Dependent	The monthly total return of the Shariah-compliant ETF.
Conventional Index Return	SPY	Benchmark	The monthly total return of the conventional S&P 500 ETF.
Market Factor	MKT	Independent	The excess return of the overall stock market. It measures the systematic risk that affects all stocks.
Size Factor	SMB	Independent	"Small Minus Big." The return premium of small-cap stocks over large-cap stocks.
Value Factor	HML	Independent	"High Minus Low." The return premium of value stocks over growth stocks.
Momentum Factor	WML	Independent	"Winners Minus Losers." The return premium of stocks with strong past performance over those with poor past performance.
Risk-Free Rate	RF	Control	The one-month Treasury bill rate is used to calculate excess returns.

Performance Evaluation Framework

Consistent with the source paper, a comprehensive evaluation is conducted using a suite of widely accepted risk-adjusted performance measures to analyze the trade-off between risk and return.

The Sharpe Ratio (Sharpe, 1966): This ratio measures the excess return of an investment (above the risk-free rate) per unit of **total risk**, where the standard deviation of its returns serves as a proxy for risk. A higher Sharpe ratio indicates a better return for the amount of total risk taken, making it particularly useful for evaluating a stand-alone investment. Sharpe Ratio=(Rp−Rf)/σp

The Treynor Ratio (Treynor, 1965): Unlike the Sharpe ratio, the Treynor ratio measures the excess return per unit of **systematic risk**, as measured by beta (β). This ratio is more appropriate for evaluating an investment that is part of a larger, well-diversified portfolio, as it only considers the market risk that cannot be diversified away. Treynor Ratio=(Rp−Rf)/βp

The Information Ratio: This ratio measures the consistency of an investment's active management by comparing its active return (the return above its benchmark) to its active risk (the volatility of that active return, or tracking error). A higher information ratio suggests a more consistent ability to outperform the benchmark. Information Ratio=(Rp−Rb)/σ(Rp−Rb)

The M-Squared (M2) Ratio (Modigliani & Modigliani, 1997): This metric provides a more intuitive comparison by adjusting a portfolio's risk to match the risk of the market benchmark. It calculates the portfolio's return if it had the same total risk as the market. This allows for a direct, risk-adjusted comparison of returns in percentage terms. M2 Ratio=(SharpeRatiop×σm)+Rf

Multi-Factor Model and Robustness Checks

To move beyond simple ratios and identify the underlying drivers of returns, the four-factor model of Carhart (1997) is employed as the primary analytical tool. This model is used to determine whether the performance of the Islamic ETF is attributable to a unique, skill-based alpha or is explained by its exposure to the four independent variables (MKT, SMB, HML, and WML).

To ensure the reliability of the findings, this paper implements several methodological enhancements over the source study:

Granular Sub-Period Analysis: The data is split into three distinct market regimes (pandemic, rally, and inflationary periods) to test for performance consistency.

Advanced Statistical Testing: A **bootstrap analysis** is conducted to generate a 95% confidence interval for the regression alpha, providing a more robust test of its significance.

RESULTS

This section presents the empirical findings from the comparative analysis of the Islamic (SPUS) and conventional (S&P 500) indices in the US market.

Performance Evaluation using Risk-Adjusted Ratios

Over the whole sample period, the Islamic index delivered superior returns. Table 2 shows that SPUS generated an annualized return of 16.31% compared to 13.37% for SPY, with only marginally higher volatility. This stronger risk-return profile is confirmed in Table 3. The Islamic index achieved a significantly higher Sharpe Ratio (0.7238) than the conventional index (0.5829), indicating superior performance for the total risk taken.

Table 2. Basic Performance Statistics (Annualized)

Metric	Islamic (SPUS)	Conventional (SPY)
Annual Return	16.31%	**13.37%**
Annual Volatility	20.22%	**20.07%**
Beta	0.9552	**0.9781**
Maximum Drawdown	**-26.78%**	**-23.97%**

The superior risk-adjusted performance is confirmed in Table 3. The Islamic index generated a Sharpe Ratio of 0.7238, considerably higher than the 0.5087 for the conventional index.

Table 3. Risk-Adjusted Performance Measures

Metric	Value
Islamic Sharpe Ratio	0.7238
Conventional Sharpe Ratio	0.5829
Islamic Treynor Ratio	0.1533
Conventional Treynor Ratio	0.1196
Information Ratio	0.5783
M-Squared (M^2) Ratio	0.1620

Diagnostic Checks

Before proceeding with the regression analysis, a correlation matrix of the variables was examined to assess multicollinearity. As shown in Table 4, the correlations between the independent factors (MKT, SMB, HML, and WML)

are low. This confirms that multicollinearity is not a concern, ensuring the stability and reliability of the regression coefficients.

Table 4. Correlation Matrix of Monthly Returns and Factors

	Conventional	Islamic	MKT	SMB	HML	WML
Conventional	1.0000	0.9682	0.9925	0.2225	0.0669	**-0.4627**
Islamic	0.9682	1.0000	0.9619	0.1823	-0.1133	**-0.3921**
MKT	0.9925	0.9619	1.0000	0.3138	0.0445	**-0.4798**
SMB	0.2225	0.1823	0.3138	1.0000	0.0465	**-0.4479**
HML	0.0669	-0.1133	0.0445	0.0465	1.0000	**-0.1659**
WML	**-0.4627**	**-0.3921**	**-0.4798**	**-0.4479**	**-0.1659**	**1.0000**

Multi-Factor Model Regression Results

While the simple ratios suggest outperformance, the (Carhart, 1997) four-factor model (Table 5) reveals the underlying drivers. The model's alpha is 0.0028, but the p-value of 0.1048 is not statistically significant. This is the study's central finding: there is no evidence of a unique, unexplained source of excess return.

Instead, the performance is almost entirely explained by the index's factor exposures. The significant negative coefficients for Size (SMB: -0.2207) and Value (HML: -0.1692) confirm that the Islamic index has a substantial and systematic tilt toward large-cap growth stocks. The momentum factor (WML) was not significant.

Table 5. Carhart 4-Factor Model Results (Full Period: 2020-2023)

Factor	Coefficient	p-value
Alpha (α)	0.0028	**0.1048**
Market (MKT)	1.0081	**0.0000**
Size (SMB)	-0.2207	**0.0007**
Value (HML)	-0.1692	**0.0000**
Momentum (WML)	0.0259	**0.5677**
Adjusted R^2	**0.9610**	

Robustness of Findings

The sub-period analysis confirms the main conclusion. As shown in Tables 6 and 8, the alpha was statistically insignificant during both the 2020 pandemic period and the 2022- 2023 inflationary period.

Interestingly, during the 2021 market rally (Table 7), the Islamic index produced a marginally significant alpha of 0.0122 (p-value: 0.0681). This suggests temporary outperformance during a strong bull market, but the effect disappears over the longer term, confirming that it is not a persistent source of return.

Table 6. Robustness Test - Carhart Model for 2020 (Pandemic Crash & Recovery)

Factor	Coefficient	p-value
Alpha (α)	-0.0013	**0.8769**
Market (MKT)	0.9646	**0.0000**
Size (SMB)	-0.1969	**0.5503**
Value (HML)	-0.1560	**0.3207**
Momentum (WML)	0.0151	**0.9290**
Adjusted R^2	**0.9666**	

Table 7. Robustness Test - Carhart Model for 2021 (Market Rally)

Factor	Coefficient	p-value
Alpha (α)	0.0122	**0.0681**
Market (MKT)	0.9475	**0.0006**
Size (SMB)	-0.1640	**0.3370**
Value (HML)	-0.1993	**0.1372**
Momentum (WML)	0.1156	**0.4499**
Adjusted R^2	**0.8481**	

Table 8. Carhart Model for 2022-2023 (Inflation/Rate-Hike Period)

Factor	Coefficient	p-value
Alpha (α)	0.0017	**0.3893**
Market (MKT)	1.0323	**0.0000**
Size (SMB)	-0.2709	**0.0011**
Value (HML)	-0.1932	**0.0001**
Momentum (WML)	-0.0109	**0.8369**
Adjusted R^2	**0.9772**	

Finally, to provide the most rigorous statistical test of the alpha's significance, a bootstrap analysis was conducted. This modern technique involves resampling the original data 1,000 times to simulate a range of possible outcomes, creating a robust distribution of the alpha estimate that is independent of the assumption of normally distributed returns.

The analysis revealed that while the original alpha for the whole period was 0.0028, the 95% confidence interval for this alpha is (-0.0005, 0.0061). The critical finding here is that this interval contains zero.

This provides robust evidence that the measured alpha is not statistically different from zero. In other words, if we were to repeat this study with slightly different data, it is statistically plausible that the result could be zero, or even a negative alpha. Therefore, we can confidently conclude that the observed outperformance is not a persistent, skill-based alpha but rather a statistical artifact of the specific time period, confirming the paper's central thesis.

DISCUSSIONS

The empirical results of this study provide a nuanced answer to the question of whether Islamic indices are a viable investment avenue in the US market. While the Islamic ETF (SPUS) demonstrated superior risk-adjusted returns compared to its conventional counterpart (SPY) during the 2020-2023 period, the central finding is that this outperformance is not attributable to a unique or persistent "Islamic alpha." Instead, the four-factor model (Carhart, 1997), with its high explanatory power (Adjusted R-squared of 96.1%), reveals that the excess returns are almost entirely explained by the index's significant and systematic tilt towards large-cap growth stocks.

This conclusion that performance is a function of factor exposure rather than alpha aligns with a growing body of recent literature in both Islamic and ethical finance. Our finding of a statistically insignificant alpha is consistent with the original study by Alam and Ansari (2020) in the Indian market, suggesting that in different market structures, the core principle of Shariah screening does not inherently generate unexplained excess returns.

More recent studies support this view. For instance, a 2023 study by Zaimi et al. on ASEAN markets found that while Islamic indices showed defensive characteristics during the COVID-19 downturn, their performance was fully captured by exposure to quality and low-volatility factors, with no significant alpha remaining. Similarly, research in the parallel field of ESG investing has increasingly shown that the outperformance of many ESG funds is a direct result of their structural tilts towards technology and high-quality growth companies, which were highly favored in the post-pandemic market environment (Bofinger et al., 2022).

However, our findings do contrast with some studies that have reported a significant alpha. For example, Umar et al. (2022) found a positive "Shariah alpha" in several GCC countries, particularly during periods of high oil prices. The difference in our results can be explained by several key factors: Market Structure: The US market is dominated by large-cap technology and healthcare firms that often meet Shariah screening criteria (low debt, permissible activities). In contrast, markets like India or the GCC may have different industrial compositions, leading the Shariah screen to favor different factors, such as small-cap stocks, as seen in the Alam and Ansari (2020) study. Time Period: Our study period (2020-2023) was characterized by unique macroeconomic conditions, including a global pandemic and a subsequent surge in growth stock valuations. Studies covering different periods, such as the value-driven cycles of the early 2000s, would likely yield different results. Methodological Rigor: The marginally significant alpha during the 2021 market rally (p-value = 0.0681) underscores the importance of our robustness tests. Without the full-period analysis and the confirming bootstrap results, one might have incorrectly concluded that a persistent alpha exists.

The findings have meaningful implications for several investor groups. For faith-based investors, the core message is straightforward: following Shariah principles in the US equity market does not require sacrificing performance. Investors can remain aligned with their ethical and religious values while still pursuing competitive financial outcomes. For conventional investors, the results highlight Islamic ETFs as practical, rules-based instruments for accessing large-cap growth exposure. These funds offer a transparent and disciplined alternative to traditional growth-oriented mutual funds and can serve as a valuable diversification tool. For institutional investors and fund managers, the clearly defined factor characteristics of the Islamic index point to its usefulness in portfolio construction and tactical allocation decisions. In addition, the natural overlap between Shariah screening and many ESG criteria, such as limits on financial leverage and exclusions of controversial industries, makes Islamic ETFs a credible option for portfolios operating under ESG mandates.

CONCLUSIONS

This study set out to empirically determine if Islamic indices offer a viable investment avenue in the US market by comparing the performance of a Shariah-compliant ETF (SPUS) against its conventional counterpart (SPY). By extending the robust methodology of Alam and Ansari (2020), this paper provides a nuanced answer supported by rigorous statistical analysis.

The central finding of this research is that while the Islamic index delivered superior risk-adjusted returns during the 2020-2023 period, this outperformance is not attributable to a unique or persistent "Islamic alpha." The Carhart four-factor model, with its high explanatory power, demonstrates that the index's strong performance is almost entirely explained by its significant and systematic tilt towards large-cap growth stocks. This conclusion remained consistent across various market regimes, as confirmed by the sub-period analysis, and was further validated by a bootstrap analysis, which showed the alpha's 95% confidence interval contained zero.

The findings have clear implications for investors. For faith-based investors, this study provides strong evidence that adhering to Shariah principles in the US market does not result in a financial penalty. For conventional and institutional investors, the research highlights that Islamic ETFs can serve as effective, transparent, and rules-based tools for gaining targeted exposure to the large-cap growth investment style.

This study is subject to several limitations that provide avenues for future research. First, the short analysis

timeframe (48 months) is a significant constraint. The 2020-2023 period was highly favorable to the growth factor, and the results may not be representative of different market cycles. Future research should use back-tested index data to analyze performance over several decades, including periods of both growth and value outperformance. Second, the use of ETFs as proxies introduces tracking error and expense ratios that are absent in the pure indices. While this provides a practical, real-world comparison, further studies could analyze the pure, underlying indices to isolate the effect of the Shariah screen itself.

Third, this study is limited to the US market. The difference in factor tilts between our study (large-cap growth) and the Alam and Ansari (2020) study in India (small-cap) strongly suggests that the outcomes of Shariah screening are market-dependent. A valuable avenue for future research would be a large-scale, cross-country comparison using the same robust methodology to map how Shariah screening translates into different factor exposures across global markets. Finally, employing more advanced asset pricing models, such as the Fama-French 5-factor or 6-factor models, could provide even deeper insights into the specific drivers of return in Shariah-compliant portfolios.

In conclusion, this paper affirms that Shariah-compliant indices are indeed a viable investment avenue. However, their value lies not in generating a mysterious alpha, but in providing specific factor exposures that allow investors to align their portfolios with their ethical beliefs without sacrificing the potential for competitive, market-driven returns.

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