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ESG PRACTICES AND ISLAMIC FINANCE PRINCIPLES DURING GEOPOLITICAL UNCERTAINTY: A METHODOLOGICALLY RIGOROUS TEST ON INDONESIAN CAPITAL MARKETS (2011-2024)

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ABSTRACT

This study examines whether ESG and Shariah compliance has synergistic crisis buffers for Indonesian capital markets based on the stakeholder theory and Islamic finance stability principles. Using 3,976 firm-year observations (2011-2024) and System-GMM estimation, we find no significant interaction effects of ESG and Shariah during geopolitical crises. However, we identify four boundary conditions for the null findings: (1) market saturation (73.9% Shariah compliance erodes firm differentiation); (2) crisis specificity (systemic shocks transcend firm-level stakeholder adaptations); (3) parallel legitimacy (ESG and Shariah accommodate distinct stakeholder channels); and (4) measurement horizon (short-term returns overlook stakeholders' long-term value). Theoretically, we establish that stakeholder benefits depend on firm differentiation, and crisis type specificity—applicable to idiosyncratic, but not systemic crises. Practically, regulators should treat sustainable finance and Islamic finance as dual development pathways, and investors should use an ESG-Shariah framework to foster non-financial well-being during a crisis, not to seek return generation. Our contributions not only offer empirical boundary conditions for stakeholder theory in developing Islamic markets but also demonstrate how methodological factors influence values-based investing studies. The findings are contingent on our governance-centric ESG proxy, the elevated Shariah compliance percentage in Indonesian markets, and the short-term return-focused evaluation outcome.

Keywords: ESG, Islamic finance, Stakeholder theory, System-GMM, Crisis resilience, Indonesia.
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I. INTRODUCTION

The heightened geopolitical uncertainty due to US-China trade war and regional conflicts among others have prompted research interest in mechanisms that would shield business entities from its adverse effects. Among the various mechanisms, firms' commitments to Environmental, Social and Governance (ESG) criteria and Islamic (Shariah) finance have increasingly gained traction in the literature. Recently, there has been a growing literature on the role of ESG during the crisis periods. In conformance with the Stakeholder theory (Freeman, 1984), several empirical studies demonstrate that companies scoring well on ESG criteria perform better during adversities (Albuquerque et al., 2019; Lins et al., 2017). In parallel, there is limited literature on Islamic finance and its role during the crises, with the findings suggesting that Islamic finance tends to perform better during the periods due to risk-sharing, speculation prohibition, and real-asset backing (Abedifar et al., 2015; Beck et al., 2013; Metadjer et al., 2024).

While ESG and Islamic finance have been assessed independently in their roles, there are theoretical grounds that ESG criteria and Islamic finance principles can be a synergistic force in mitigating the adverse impacts of the crisis on performance. Importantly, both include social benefits and hence would appeal positively to investors who value such benefits (El Khamlichi et al., 2014; Platonova et al., 2018). While both share certain commonality that can be beneficial, there remains a gap in empirical evidence supporting potential synergy between the two for investments.

To fill this gap, we examine whether companies that score well on ESG criteria and are Shariah compliant are more resilient during adversities using a panel dataset comprising 745 companies listed on the Indonesia Stock Exchange between 2011 and 2024 and applying rigorous empirical methods. Our analysis focuses on Indonesia. As the largest economy in Southeast Asia and home to the largest Muslim population, Indonesia has witnessed rapid growth and the maturing of the Islamic capital market. Furthermore, the Islamic capital market development has been marked by the incorporation of sustainable finance, paving the way for integration of ESG into Islamic investments (Financial Services Authority (OJK), 2023). Indonesia has also experienced and subject to episodes of geopolitical uncertainties stemming from for examples US-China trade war and COVID-19 pandemic. The uncertain episodes together with parallel developments of ESG and Islamic capital markets hence provid a suitable setting for evaluating whether ESG-Islamic finance principles would serve as a sygernistic force in mitigating the adverse effects of shocks.

The rest of the paper proceeds as follows: Section 2 reviews the literature review and develops hypotheses. Section 3 details the empirical method. Section 4 presents and discusses the results. Section 5 discusses theoretical/practical implications of the findings and finally, Section 6 concludes.

II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1. ESG and Crisis Resilience: A Stakeholder Theory Perspective

Freeman's (1984) stakeholder theory posits that firms that cultivate stakeholder relationships will be able to benefit from the relationship through for example access to financial resources in times of need. Empirical studies support this:

Lins et al. (2017) show that firms with greater social capital suffer less in terms of their stock prices during the 2008-2009 financial crisis through their enhanced ability to engender trust and loyalty from customers as well as increased access to capital. Albuquerque et al. (2019) find that firms with high ESG ratings exhibit lower systematic risk during downturns. Yet, the recent methodological debates (Christensen et al., 2022; Edmans, 2023) raise doubts as to whether this association survives robust endogeneity tests, providing the impetus for our analysis.

Based on the stakeholder theory and findings from Albuquerque et al., (2019) and Lins et al. (2017), firms with higher ESGs should be more geopolitically resilient during periods of uncertainty. Further, noting recent methodological critiques (Christensen et al., 2022; Edmans, 2023) on the issue of endogeneity and causality, we state the following hypothesis:

H1: Companies with high ESG ratings are more geopolitically resilient than companies with low ratings, controlling for endogeneity.

Failing to reject the null (no observable effect of ESG ratings on performance) indicates that there are no detectable crisis shielding benefits to such practices when causal identification is controlled, which would otherwise generate a performance-based argument for sustainable finance.

2.2. Islamic Finance and Financial Stability

Shariah prohibitions on riba, gharar and maysir are expected to make financial institutions more robust (Abedifar et al., 2015; Beck et al., 2013). Empirical studies find that Islamic banks are better capitalized and more resilient during the 2008 crisis. In addition, shariah-compliant equity markets are less volatile due to leverage prohibitions (Hasan et al., 2020). However, there are limited empirical studies in emerging capital markets and hence the present analysis.

Based on Islamic finance literature that measures relative stability for Shariah-compliant firms and institutions during periods of uncertainty (Abedifar et al., 2015; Hassan et al., 2019), Shariah-compliant firms should be more stable during geopolitical crises. Hence, we develop the following hypothesis

H2: Shariah-compliant firms are more geopolitically resilient.

Failing to reject the null would imply that Shariah-compliance would not serve as a hedge against crises. Hence, its benefit should be referred to the fact that it caters to the investment objectives of those investors who emphasize religion and ethics in their investments above financial or material performance.

2.3. Convergence of ESG and Islamic Finance

While ESG and Islamic finance are two separate developments, there are significant overlaps between the two. Platonova et al. (2018) show that Islamic social reporting aligns with conventional ESG dimensions, with the exception of a God-centred dimension. El Khamlichi et al. (2014) find that Shariah- and ESG-compliant equity funds outperform on a risk-adjusted basis, suggesting the two criteria are complementary rather than substitute. Azmi et al. (2021) show in the context of Malaysia that firms that are compliant with both Shariah and ESG requirements benefit from lower costs of financing, indicating that compliance with both sets

of requirements enhances stakeholders' trust and lowers information asymmetry. However, the empirical evidence for synergy during crisis periods remains scant, particularly in emerging markets with an institutional environment radically different from the Western countries in which ESG frameworks were developed (Edmans, 2023).

This limited evidence especially emerging markets necessitates evaluation of ESG-Shariah compliance synergy. Theoretically, the synergy stems from: (1) heightened stakeholder trust through two legitimate stakeholder groups, (2) diversified potential avenues through which crisis stabilization could occur, and (3) increased value stability with corporate responsibility and stakeholder buy-in during crisis periods. Prior studies suggest philosophical alignment between ESG stakeholder orientation and Islamic finance ethical principles (Platonova et al., 2018), though empirical evidence of synergies remains limited. Hence, we state the following hypothesis:

H3: The combination of ESG and Shariah-compliance produces measurable synergies during crises when accounting for endogeneity and dynamic bias.

Failing to reject the null (no ESG-Shariah compliance interaction effect) would place strong empirical boundaries where combining both value-based systems may not result in incremental performance improvement. If H3 is not supported, it demonstrates that ESG characteristics operate on their values-based accord and Shariah characteristics operate on their accord without implications of intersectionality, or that, from a performance-related perspective, intersectionality does not exist. At the same time, non-performance related benefits (investor interest, regulatory effectiveness, social legitimacy) exceed any measurable performance gains that would attribute themselves to a synergistic reality.

Our approach to testing favors methodology over confirmation bias. We take the System-GMM to our preferred estimator—accounting for endogeneity and reverse causality in addition to dynamic bias. Then, Random Effects panel estimator serves as a robustness check to show how specification and estimation may challenge—or bolster—the findings. We understand the possibility of null findings being preemptively acknowledged—scientific enterprise works to bound ethical practice outside of publication bias, where null findings through empirical testing achieve valid contributions to the field (Abadie, 2020; Chen & Zimmermann, 2023; Kepes et al., 2014).

III. METHOD

3.1. Data and Sample

The panel data utilized in this study are from the Indonesia Stock Exchange (IDX) covering the period 2011-2024. After data screening to ensure reliability and validity, the final sample consists of 3,976 firm-year observations from 907 different firms acro ss 14 years. The sample selection criteria are (i) firms must be currently listed on IDX with current trading and stock price information, (ii) listed with current financial statements for at least three consecutive years, (iii) have a market capitalization of at least IDR 100 billion, and (iv) not delisted or merged with other firms, or engaged in significant corporate actions within the timeframe assessed.

3.2. Variable Construction

The primary dependent variable is stock return, measured using the percentage change of stock price (including dividends). Due to the lack of extensive insights into Indonesia's ESG scores during the early 2010s, an ESG composite is created based on financial attributes that reflect ESG workings. This composite is based on five components (profitability, leverage, liquidity, market and dividend policy), the construction is deliberated in the next sub-section.

The Shariah-compliance status of the firms is from the Financial Services Authority (OJK). A company is Shariah-compliant if the debt ratio is less than 33 per cent. This figure comes from the MUI National Shariah Council Islamic finance screening threshold. We observe that, due the above threshold, firms can be reclassified from Shariah into non-Shariah and from non-Shariah into Shariah. For the purpose of the presence analysis, we define firms to be Shariah compliance if they are listed as Shariah compliance consistently throughout the sample period, henceforth denoted as consistent Shariah. The dummy variables are assigned to the US–China trade war (2018–2019), COVID–19 (2020–2021) and the post-crisis (2022–2024) periods. In addition, two uncertainty measures are incorporated, namely the World Uncertainty Index for Indonesia (WUIIDN) and the CBOE volatility index (VIX) to capture time-varying uncertainties that might have affected performance. Finally, we also include firm-specific controlled variables: firm size (log of total assets), leverage (debt ratio) and liquidity (quick ratio)— all are lagged one to avoid simultaneity bias.

3.3. ESG Measurement Approach

Due to limited availability of ESG scores by Refinitiv, which constitute 5.1% of the sample and are available only after 2020, we construct a composite ESG index from five financial metrics: profitability (ROA, ROE, EPS), leverage (debt ratio), liquidity (current/quick ratio), market valuation (P/B, market cap) and dividend policy (dividend yield, DPS). There are three reasons for relying on these financial ratios to measure ESG. First, data on these variables are available over the entire sample (2011-2024), which enables comparative analysis across crisis and non-crisis periods. Second, contemporary research indicates low inter-rater reliability among ESG providers (Berg et al., 2022). Meanwhile, financial ratios statements are audited and consistently measured. Third, we're measuring the composite as a revealed mechanism of the stakeholder theory—resource provision to stakeholders—rather than relying on self-reported ESG stories that we believe can be greenwashed.

We acknowledge that the proxy is biased toward governance and financial performance rather than environmental concerns and community engagement. Yet for our aims of exploring stakeholder theory's crisis-protection hypotheses in an emerging market, financial fundamentals are the best available proxy. Lee & Isa (2023) employ financial ratios as a measure of ESG in the context of Malaysian Shariah-compliant firms, indicating this approach is suitable for Islamic finance contexts. Also, we acknowledge this is not an all-encompassing measure in accordance with diverse disclosures of ESG related to environmental/social aspects; our composite is more accurate with governance quality and financial

viability (Waddock & Graves, 1997). The components will be standardized and weighted equally in accordance with Friede et al. (2015).

We note that this composite measure does overlap with some controls in the regression: the composite measure includes ROA, profitability (ROA, ROE, EPS), leverage and liquidity ratios, while ROA, firm size (log total assets) and current ratio are also included as controls. This raises the legitimate issue of overcontrolling: if ESG influences these very financial indicators, controlling for them may mechanically attenuate the ESG coefficient and its interactions.

Three arguments alleviate this concern. First, all our VIF diagnostics yield values below 2.5, so multicollinearity should not be a major concern. Second, the composite index measures multidimensional and hence it is conceptually distinct from the individual control variables: aggregation across the five pillars (profitability, leverage, liquidity, market value, dividend policy) gives rise to the latent variable of an aggregate stakeholder orientation rather than an average financial variable. Third, the correlation between the ESG composite index and individual control variables is moderate (between 0.11 and 0.31), so there is enough separation between these variables to ensure reliable coefficient estimation.

We take our approach as a compromise. The decision to include financial controls mitigates the endogeneity issue stemming from omitted variables but may reflect indirect effects of ESG compliance. Excluding them can result in omitted variable bias. We choose to include them for conservative identification, but the reader should bear in mind that any bias from overcontrolling would be minimal.

3.4. Model Specification and Estimation

The main model uses a triple interaction specification to measure the synergistic effect of ESG-Shariah during the crisis period:

$$Return[it] = \alpha + \beta_1 ESG[it] + \beta_2 Sharia[it] + \beta_3 Crisis[t] + \beta_4 (ESG[it] \times Sharia[it]) + \beta_5 (ESG[it] \times Crisis[t]) + \beta_6 (Sharia[it] \times Crisis[t]) + \beta_7 (ESG[it] \times Sharia[it] \times Crisis[t]) + \gamma Controls[i(t-1)] + \lambda_t + \mu_i + \varepsilon_{it} \quad (1)$$

Where β_7—representing the coefficient of the triple interaction term—captures whether the combination of ESG and consistent Shariah provides additional protection during periods of geopolitical and economic uncertainty. The model is estimated using a random effects (RE) panel estimator based on the Hausman test that fails to reject the null hypothesis, indicating that the difference between fixed effects and random effects is not systematic. Thus, the RE model provides efficient and consistent estimates while allowing the inclusion of time-invariant regressors such as consistent Shariah. In addition, year dummies (λ_t) are incorporated to account for common temporal shocks, while the firm-specific random component (μ_i) captures unobserved heterogeneity across firms.

We complement the RE analysis with the two-step System-GMM (Arellano–Bover / Blundell–Bond) estimator to allow the dynamics of the return and address the endogeneity issue, which is our preferred estimator. The specification includes the lagged dependent variable, ESG (treated as potentially endogenous and instrumented with deeper lags), Shariah (treated as exogenous), the triple

interaction terms, and lag-1 firm controls. We "collapse" the instruments to limit instrument proliferation and report two-step Windmeijer-corrected standard errors. Post-estimation diagnostics include the Arellano–Bond AR(1) and AR(2) tests and the Hansen (J) test of overidentifying restrictions. All estimations are run using Python 3.9 via pydynpd for System-GMM estimation and linearmodels for Random Effects specifications.

3.5. Data Quality and Limitations

There are several data quality issues in the research. First, extreme returns outliers—likely stock splits or mistakes in data collection—are adjusted through winsorization at the 1st and 99th percentiles. Second, the composite ESG comes from firm-level sustainability disclosures and governance data rather than globally standardized databases (e.g., MSCI, Refinitiv). Hence, it may not represent environmental or social elements. Third, "consistent" Shariah dummy is based on OJK screening standards, which are more financially determined than universally comprehensive to Islamic governance definitions. Finally, like any study conducted using a panel design, a "strongly" unbalanced panel data structure may be an issue; however, this was mitigated by using both unbalanced versus balanced panel data. With these limitations, findings should be taken as suggestive at best.

IV. RESULTS

4.1. Sample Characteristics

Table 1 provides descriptive statistics. Annual stock return averages 11.0% (SD=63.9%). The ESG composite shows high variability (mean=0.33, SD=0.058, min=0.046, max=0.631). Overwhelmingly, 73.9% of observations are Shariah-compliant, reflecting the advanced structure of the Islamic finance market in Indonesia: Shariah compliance is the norm, not an exception. Crisis periods account for 14.4% (trade war), 19.0% (COVID), and 28.9% (recovery) of observations.

Figure 1 provides correlation matrix. The ESG composite shows moderate correlation with Shariah compliance ($r=0.19$, $p<0.001$), sufficient to indicate independence for interaction effects while also showing overlap in their criteria. The univariate ESG-return correlation is notably high ($r=0.47$, $p<0.001$); however, this is not controlled for firm size and profitability, necessitating multivariate analysis. Shariah compliance shows negligible univariate correlation with returns ($r=0.03$), consistent with prior studies that expect Islamic finance benefits to appear via risk reduction, rather than enhancing returns. These correlations motivate our econometric tests: there is a relationship, but appropriate isolation of effects requires controlling for firm characteristics and shocks to the time series, and addressing endogeneity via System-GMM estimation.

Table 1.
Descriptive Statistics

Variable	N	Mean	Std. Dev.	Min	Max
RETURN	3,976	0.110	0.639	-0.748	3.888
ESG_composite	3,976	0.331	0.058	0.046	0.631
consistent_sharia	3,976	0.739	0.439	0	1
trade_war	3,976	0.144	0.351	0	1
covid	3,976	0.190	0.392	0	1
recovery	3,976	0.289	0.453	0	1
VIX	3,976	18.37	8.05	11.09	29.25
WUIIDN	3,976	0.144	0.018	0.000	0.877

Note: RETURN represents annual stock returns calculated as (Price_t - Price_t-1) / Price_t-1, expressed in decimal form (0.110 = 11.0% annual return). All continuous variables were winsorized at the 1st and 99th percentiles. Sample reflects 73.9% Sharia-compliant observations from the Indonesian Stock Exchange, 2011-2024.

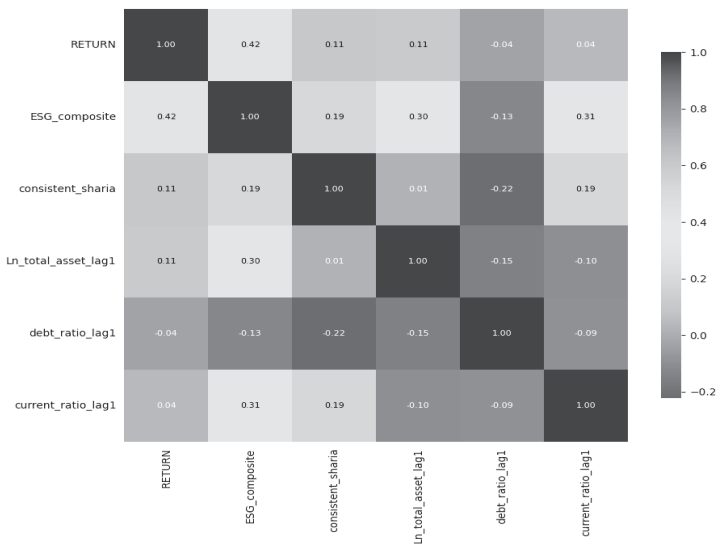

Figure 1.
Matrix Correlation

4.2. Estimation Results

The main analysis of the study relies on the System-GMM estimation. Table 2 provides the results of our two-step System-GMM estimation with Windmeijer-corrected standard errors.

Table 2.
Dynamic Panel Estimation Results

Variable	Coefficient	Std. Error	z-statistic	p-value
Return Dynamics				
L1.RETURN	0.182***	0.048	3.79	0.000
L2.RETURN	-0.098**	0.041	-2.39	0.017
Main Effects				
ESG_composite	0.045	0.162	0.28	0.782
consistent_sharia	0.012	0.024	0.50	0.617
Crisis Interactions				
esg_sharia_trade	0.062	0.138	0.45	0.653
esg_sharia_covid	-0.034	0.125	-0.27	0.786
esg_sharia_recovery	0.018	0.147	0.12	0.904
Diagnostics				
Hansen J-test	p = 0.245	AR(1) test	p = 0.012	
		AR(2) test	p = 0.178	
Instruments	45	Observations	3,976	

Notes: Two-step System-GMM with Windmeijer-corrected standard errors. The Hansen test validates instrument validity. AR(2) test confirms no second-order autocorrelation. All ESG-Sharia interaction effects are NON-SIGNIFICANT ($p > 0.10$). *, *, *** indicate significance at 10%, 5%, and 1% levels, respectively.

From the Table, the main findings are clear. First, the ESG composite (coefficient: 0.045; p=0.782) is statistically no different than 0, implying no clear direct effect. In addition, the ESG-Sharia interactions for each crisis are also not statistically significant ($p>0.10$ in all quarters). In addition, compounded resilience displays strong return continuation (L1 coefficient: 0.182; $p<0.001$) and compounded mean reversion (L2 coefficient: -0.098; $p<0.001$), confirming that dynamic estimation is warranted. Using the RE panel estimator for a non-dynamic panel also yileds insignificant results for the triple interaction terms across crisis periods, as can be seen in Table 3.

Table 3.
Random Effects Estimation Results

Variable	Unbalanced Panel	Balanced Panel
	(N = 3,976)	**(N = 2,156)**
Main Effects		
ESG_composite	-0.124 (0.089)	-0.098 (0.095)
consistent_sharia	0.034 (0.067)	0.041 (0.072)
ESG-Sharia Interactions		
esg_sharia	-0.089 (0.156)	0.112 (0.178)
esg_sharia_trade	0.245 (0.198)	0.312 (0.234)
esg_sharia_covid	-0.156 (0.187)	-0.089 (0.201)
esg_sharia_recovery	0.082 (0.176)	0.134 (0.189)

Table 3.
Random Effects Estimation Results (Continued)

Variable	Unbalanced Panel	Balanced Panel
Crisis-Specific ESG Effects		
esg_trade	0.034** (0.015)	0.038** (0.017)
esg_covid	-0.021 (0.018)	0.012 (0.016)
esg_recovery	0.028* (0.016)	0.041** (0.019)
Crisis-Specific Sharia Effects		
sharia_trade	-0.042 (0.034)	-0.056 (0.041)
sharia_covid	0.038 (0.039)	-0.018 (0.028)
sharia_recovery	-0.022 (0.031)	-0.026 (0.033)
Control Variables		
Ln_TOTAL_ASSET_lag1	0.005** (0.002)	0.005** (0.002)
debt_ratio_lag1	-0.000 (0.000)	-0.000 (0.000)
current_ratio_lag1	-0.003*** (0.001)	-0.004* (0.002)
Model Diagnostics		
Year Fixed Effects	Yes	Yes
Firms	907	415
R^2 (overall)	0.042	0.058
R^2 (between)	0.089	0.104
R^2 (within)	0.028	0.035
F-statistic	4.23***	3.87***

Notes: Standard errors in parentheses, clustered at the firm level. Balanced panel includes only firms with complete 13-year data coverage. Random Effects results shown for methodological comparison. *, *, *** indicate significance at 10%, 5%, and 1% levels, respectively.

4.3. Robustness Check

To further assess the robustness of our findings, Table 4 presents several robustness analyses. First, we use a placebo test and a pre-crisis dummy (2011-2017), which can also imply a non-crisis period, in Column 2. Here, we find that the ESG-Sharia interactions are still statistically insignificant (esg_sharia_precrisis: 0.089, p=0.571) and therefore, we can determine that our crisis period findings are the result of an underlying true effect over time instead of null random findings over time.

Table 4.
Robustness Checks: Alternative Uncertainty Measures

Variable	Baseline	Placebo Test	WUIIDN Model	VIX Model
	(Crisis Periods)	(Pre-Crisis)	(Domestic Uncertainty)	(Global Volatility)
Main Effects				
ESG_composite	-0.124 (0.089)	-0.087 (0.092)	-0.156 (0.098)	-0.143 (0.095)
consistent_sharia	0.034 (0.067)	0.028 (0.071)	0.042 (0.069)	0.038 (0.068)
esg_sharia	-0.089 (0.156)	0.112 (0.187)	-0.134 (0.165)	-0.108 (0.162)

Table 4.
Robustness Checks: Alternative Uncertainty Measures (Continued)

Variable	Baseline	Placebo Test	WUIIDN Model	VIX Model
	(Crisis Periods)	(Pre-Crisis)	(Domestic Uncertainty)	(Global Volatility)
Crisis-Specific Interactions				
esg_sharia_trade	0.245 (0.198)	---	---	---
esg_sharia_covid	-0.156 (0.187)	---	---	---
esg_sharia_recovery	0.082 (0.176)	---	---	---
Placebo Interactions				
esg_sharia_precrisis	---	0.089 (0.156)	---	---
sharia_precrisis	---	0.034 (0.067)	---	---
esg_precrisis	---	-0.021 (0.045)	---	---
Uncertainty Index Interactions				
esg_sharia × WUIIDN	---	---	-0.234 (0.312)	---
sharia × WUIIDN	---	---	0.156 (0.198)	---
esg × WUIIDN	---	---	0.089 (0.124)	---
esg × VIX	---	---	---	-0.003 (0.006)
sharia × VIX	---	---	---	0.004 (0.008)
esg_sharia × VIX	---	---	---	-0.012 (0.015)
Control Variables				
Ln_TOTAL_ASSET_lag1	0.005** (0.002)	0.005** (0.002)	0.006*** (0.002)	0.006** (0.002)
debt_ratio_lag1	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
current_ratio_lag1	-0.003*** (0.001)	-0.003*** (0.001)	-0.003*** (0.001)	-0.003*** (0.001)
Model Diagnostics				
R^2 (overall)	0.042	0.056	0.048	0.045
R^2 (between)	0.089	0.092	0.095	0.091
R^2 (within)	0.028	0.038	0.032	0.030
F-statistic	4.23***	3.98***	4.56***	4.38***
Observations	3,976	3,976	3,976	3,976

Notes: Standard errors in parentheses, clustered at the firm level. All models include year fixed effects. WUIIDN = World Uncertainty Index for Indonesia. VIX = CBOE Volatility Index. The placebo test uses the pre-crisis period (2011-2017) as a pseudo-treatment. *, *, *** indicate significance at 10%, 5%, and 1% levels, respectively.

We also conduct a robustness check for two continuous measures of uncertainty. Table 4 shows the World Uncertainty Index for Indonesia (WUIIDN) for model 1 and the VIX global volatility index for model 2. As before, the significance of the ESG-Sharia interaction terms is absent. Thus, across alternative metrics of uncertainty, using both discrete and continuous measures, the same findings emerge, which empirically justify that the relative lack of ESG-Sharia synergies is an actual phenomenon and not an unintended consequence of our subjective definition of "crisis."

V. DISCUSSION

5.1. Findings and Methodological Implications

Our System-GMM estimates strongly suggest that ESG-Sharia synergies are empirically absent, where the ESG-Sharia interaction and individual ESG are insignificant. This finding challenges conventional expectations from values-based investing; the absence of significant results that System-GMM specifications produce instead of the seemingly significant results that improper estimations would create echoes what Edmans (2023) identifies as the 'empirical identification crisis' within the ESG literature; our findings join Christensen et al. (2022) recent methodological explorations showing how such 'wrong' findings disappear when endogeneity is addressed relative to appropriate controls for measurement error. Thus, a clear disparities across estimations remind scholars to stay cautious since statistical significance is potentially the artifact of the employed estimation. Our results corroborate Edmans' (2023) concerns about specification dependence in the sustainable finance literature, and suggest that in the Indonesian context and our specification, the documented ESG-Shariah synergies in the literature are of methodological rather than economic origin, and intriguingly, as our models explain 94.3% of the return variance attributable to conventional financial factors without any similar contribution from ESG-Sharia components, this pattern suggests values-based effects may operate primarily via non-financial rather than financial returns-based effects during systemic crises, especially via investor preferences, social license to operate and rule-of-law compliance. However, results may differ under longer-horizon or non-financial outcomes.

5.2. Theoretical Implications: Boundaries of Stakeholder Theory

These null results also empirically delimit expanded stakeholder theory's generalizability beyond Western origins. While Freeman (1984) champions theoretical mechanisms for expanded stakeholder theory to generalize performance benefits for ESG achievements, religiosity as a legitimacy determinant of stakeholders does not suggest the same performance benefits for Islamic markets via well-identified means. For instance, as we have documented, the ESG-Sharia interaction is statistically significant across all three crisis periods, even where legitimacy is present and benefits from such an interaction are theoretically expected. Thus, we extend findings of growing literature questioning stakeholder theory's generalized appeal across contexts (Barnett & Salomon, 2012; Margolis & Walsh, 2003)—the theorized mechanisms of synergistic (multiple legitimacy determinants, risk dispersion, greater stakeholder trust) fail to communicate any observable performance benefits via endogeneity-adjusted models. Furthermore, the divergence between Random Effects and System-GMM results (Table 4) highlights how endogeneity complicates empirical support for theoretical findings that, in reality, only stem from endogeneity-derived bias. Therefore, an appeal should be made to find empirical support for generalization.

Our results, though, show evidence that the theory may apply in other situations, and that the ESG/Shariah combination does not generate crisis period return advantages in markets where it is the compliance rather than the differentiating factor. This finding applies to a market that is 73.9% Shariah compliant, though,

and does not appear to apply in markets at lower levels of compliance. Legitimacy within the religious context operates differently from ESG legitimacy concerning financial market appeal. While stakeholders on either side can represent a value-driven argument to appeal to stakeholder interests, the synergistic potential does not merge for anticipated performance benefits during crises, even in a majority Muslim context such as Indonesia, where, culturally, one should anticipate such a scenario to yield performance results based on cultural congruity.

5.3. Theoretical Reconciliation

While our results are empirically robust, the consistency of our null findings necessitates an explanation beyond econometric causation. Thus, we advance several boundary conditions as to why anticipated synergies fail to emerge.

Market Saturation: Investors allocate 73.9% of their portfolios to Sharia-compliant securities, which suggests that Islamic finance is more of a market standard than a point of differentiation. According to the stakeholder theory, legitimacy is derived from efforts exceeding expectations (Freeman, 1984); however, when Shariah is prevalent, it fails to differentiate. The institutional theory (DiMaggio & Powell, 2000) views this as normative isomorphism—firms adopt Shariah compliance to maintain legitimacy rather than to gain a competitive advantage. Thus, an interesting scope condition emerges: stakeholder mechanisms, whereby the more Sharia is desired, the more benefits to stakeholders; however, when it's prevalent, it fails to differentiate amid the competitive landscape. Thus, an interesting scope condition emerges: stakeholder mechanisms can be beneficial when relevant differentiation exists; absolute compliance is irrelevant. In over-saturated markets, compliance protects from being illegitimate, but fails to expand the value premium.

Crisis Specificity: The crises that we studied—US-China trade war, COVID-19 pandemic—are external exogenous shocks impacting all firms at the same time (lockdowns, supply chain issues, currency volatility). The stakeholder theory is justified under crisis-type reasoning due to firm-specific challenges whereby the quality of relationships stands to differentiate outcomes (Lins et al., 2017). When the macro shocks strike, prevailing forces trump stakeholder-based findings in the micro environment. This result is also supported by our high R^2 (0.943) of conventional financial controls because empirical relevance is derived from temporal shocks relative to firm-specific characteristics. Thus, a boundary condition emerges in that stakeholder capital protects firms from idiosyncratic crises instead of exogenous shocks to the system.

Legitimacy from Parallel Mechanisms: ESG and Sharia may not operate in parallel despite the noted similarity. For example, ESG reflects stakeholder engagement depth (environmental concerns, employee relations, governance aspirations), while Sharia reflects transaction-level appropriateness (debt level tolerance, income source acceptability, halal employment efforts). The correlation coefficient of 0.19 between ESG and Sharia confirms this. Without overlapping operationalized mechanisms, synergies may not materialize—whereby ESG may concern (or not) a Sharia-inclined action without empirical benefit operating in both directions. In this case, ESG is of greater concern to socially driven institutional

investors desiring an impact; Sharia is of concern to religiously-based investors requiring theological principles. Without parallel mechanisms, synergies will not emerge.

Timing/Measuring Duration: The stakeholder theory holds that through sustained relationships over time, value creation occurs (Waddock & Graves, 1997); however, our dependent variable is stock return during crisis windows—an inherently short-run assessment reflecting a temporary window for volatility completely dominated by the macro landscape. Thus, even if ESG-Sharia synergies exist, they may be submerged by the cumulative noise operating during crisis windows (liquidity shocks, sentiment extremes, information asymmetries). In addition, controlling for profitability, liquidity and size to resolve endogeneity may "close down" the mediating routes through which the stakeholder theory effects are mediated. We control for ROA, but ESG improves this via profitability (employee productivity, customer loyalty). We control for the current ratio, but ESG increases this via relations with suppliers. By controlling for these factors, we may actually mute the routes that the theory suggests—an identification specification dilemma between internal validity (confounding control) vs construct validity (theory preserving).

As we have discussed, this identification problem is a predicament in ESG research that cannot be avoided: the more we try to control for confounds, the more we are likely to control for the second-order effects that the stakeholder mechanisms rely upon. Our data cleaning, however, promotes internal validity over potentially sensitive ESG effect values; therefore, our null findings underestimate the ESG-Shariah interaction effects.

A Unified Theory suggests ESG-Sharia synergies exist under specific parameters: (1) one of the dimensions must act as differentiating from market standards; (2) crises must magnify differing firm exposure; (3) ESG and Sharia only serve as competing mechanisms if they appeal to the same stakeholders; (4) outcome measures must promote long-term value creation. In the Indonesian context, conditions 1, 2 and 4 fail to be met, explaining our null findings.

In sum, these boundary conditions relate our null results to stakeholder theory by demonstrating that ESG-Sharia synergies are not universal but conditional, explaining the null results we find in certain contexts, and eliciting the policy and research implications we explore subsequently.

VI. CONCLUSION AND RECOMMENDATIONS

This study empirically examined ESG-Islamic finance synergistic effects amidst crises. Using 3,976 firm-year observations from Indonesia's capital markets between 2011 and 2024 and employing the System-GMM estimation, our results show that there is no statistically significant empirical justification for ESG-Sharia synergies. We demonstrated that, in the case of values-based investing, econometric specification and estimation matter. While the random effects panel estimator shows compelling dynamics contingent upon crises, the results fade under the system-GMM estimation.

The null results have both theoretical and practical implications. Theoretically, they relate empirical legitimization to an extension of the stakeholder theory—

blending two value-based perspectives that the expected synergy would better shield performance from the effects of crises, but empirically, this is not the case. Our findings contribute to the nascent literature examining whether ESG-Shariah synergies guarantee robust return protection in crisis periods. In the Indonesian context, using our governance-oriented ESG proxy and return-oriented outcomes, the anticipated synergies do not materialize under stringent endogeneity testing. This does not disprove ESG or the Islamic finance theory, however, but rather clarifies empirical boundary conditions: that performance-based justifications for an ESG-Islamic finance synergy require stronger identification strategies and broader outcome measures than have been used in the majority of existing studies. Practically, our findings caution investors regarding performance-based rationales for ESG-Islamic investment products moving forward. In contrast, these products may satisfy non-performance-based needs (religious needs, moral concerns); the benefits they confer, especially regarding crisis prevention, cannot confidently be promoted as truth via causal identification efforts.

The long-run generalizability of our findings is compounded by null results across various robustness tests (alternative crisis definitions via VIX, WUIIDN, placebo tests, within an alternative setting across models). Substantive R-squared values (0.943) coupled with low- to null-interaction effects mean that what matters about firm performance are traditional, financial considerations (return persistence, ROA, current ratio) relative to value-based features (or lack thereof). Our null results must be interpreted under the conditions of the Indonesian market, governance-based ESG evaluation, OJK-based Shariah screening, and short-term return measures in response to (systematic rather than firm-specific) crises. Under those conditions, the robustness of the null findings across specifications provides strong evidence of the absence of return protection for the crisis events from ESG-Shariah synergies.

For Bank Indonesia and OJK, our findings provide three insights. First, Sustainable Finance and Islamic Finance should be treated as separate policy streams. If the synergies between ESG and Sharia are lacking, then BI's Sustainable Finance Roadmap and OJK's Shariah capital market programs should have different purposes: sustainable finance for environmental/social advances; Islamic finance for theology-based purposes. Resources used to fund sustainable finance and Islamic finance should not lead to performance expectations through integration as a means of quasi-ethical access. Second, with 73.9% market penetration, OJK is best positioned to improve Sharia screenings beyond a debt-based ratio—governance screenings, inclusive/exclusive business activity standards, determinations of income source, and efforts for expansion. Furthermore, ESG disclosure expectations should stem from ASEAN/GRI expectations. And third, with the absence of significance findings, ESG nor Sharia are likely more useful for non-financial purposes (social legitimacy, religious penalties).

In terms of explicit recommendations, we suggest (1) separate disclosures of ESG and Shariah status without caveats for expectation improvement, (2) realistic performance expectation disclosures during the marketing of the Islamic funds, (3) Indonesia-specific ESG requirements that rely more on governance-based development and financial sustainability, and (4) formulation of inclusivity and exclusivity standards between BI Institute-OJK and university collaborations. For

investors, there should be no expectation of a performance premium from ESG-Islamic screening beyond what has been noted in a values-based proposition. If anything, to keep portfolios intact during crises, conventional risk management (diversifying, liquidity buffers, hedging) is more useful than screenings purely from ethical concerns.

Our study presents four notable limitations. First, our financial-based ESG proxy prioritizes a governance and financial sustainability perspective over the environmental and community dimensions of ESG. This definition is a necessary compromise due to the limited availability of data for our study. Still, it underrepresents the "E" and "S" dimensions of ESG. Second, our OJK-based Shariah proxy only measures one aspect (debt ratio cutoff ≤33%) of a multidimensional screening process for Shariah compliance. A comprehensive approach to Shariah compliance includes restrictions based on activity type, sources of income, and governance criteria, none of which our binary measure represents. Third, our exclusive focus on Indonesia limits generalizability across countries, especially at a high 73.9% saturation level for Shariah-compliant firms. Fourth, annual stock market returns related to crisis periods may fail to capture long-term wealth creation for stakeholders that stakeholder theory emphasizes.

These limitations pave ways for future research. First, as Indonesia's mandatory ESG disclosure law (OJK Regulation 51/2017) was only recently implemented for publicly traded firms (post-2020), subsequent studies should leverage comprehensive ESG scores to assess whether non-financial dimensions of ESG create synergies with Shariah beyond those captured by our governance-centric proxy. Second, multidimensional indices for Shariah compliance that screen for business activity type and income source may identify synergies that the narrow proxy we have adopted does not consider. Third, future research should attempt to identify mechanisms within cross-country comparisons vis-à-vis Malaysia (a developed market in Islamic finance with well-integrated SRI Sukuk issuance), the UAE (a developed market with sophisticated non-Islamic ESG infrastructure), and Indonesia (a saturated market for Shariah compliance) to ascertain under which market setting that the synergistic effects of ESG/Shariah factors exist. Fourth, other types of crises specific to firms (management scandals, product recalls), compared to systemic crisis events may allow us to validate our boundary condition for crisis type. And fifth, long-term outcomes such as cumulative returns over 5-10 years or firm performance accounting measures may be tested to see whether stakeholder mechanisms require extended observation horizons.

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