

Environmental, Social and Governance Practices in Shariah-Compliant Firms by Dr Siew Peng Lee



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SC-OCIS Scholar-in-Residence Programme

The collaboration between the Securities Commission Malaysia (SC) and Oxford Centre for Islamic Studies (OCIS), UK was established in 2010, with the objective of promoting intellectual discourse and research on applied and contemporary issues with respect to global Islamic finance.

The SC-OCIS Scholar-in-Residence programme is one of the outcomes aimed to pursue further research that complements the flagship programme, which is the annual SC-OCIS Roundtable. A thought-leadership platform, the SC-OCIS Roundtable gathers distinguished scholars, academicians, regulators and Islamic finance practitioners to discuss and exchange views on contemporary issues in Islamic finance.

Dr Siew Peng Lee from Universiti Tunku Abdul Rahman, Malaysia was the seventh Visiting Fellow of the SC-OCIS Scholar-in-Residence Programme for the academic year 2018/2019. During her tenure, she completed a research titled 'Environmental, Social and Governance Practices in Shariah-Compliant Firms'. Using the MSCI World Islamic Index and Thomson Reuters ASSET4 ESG dataset as a reference, Dr Lee's research focused on the association between Environmental, Social and Governance (ESG) and Shariah-screening practices on a firm's performance. The motivation of firms' ESG engagement activities based on agency or stakeholder theory perspectives was also analysed.

It is hoped that Dr Lee's research will provide useful information and opportunities for asset management companies as the basis for broadening their investor base and portfolio diversification, as well as to policymakers to promote ESG activities among Shariah-compliant firms.

Profile of Scholar

DR SIEW PENG LEE

SC-OCIS Scholar-in-Residence Programme 2018/2019

Dr Siew Peng Lee is an Assistant Professor in Finance at the Universiti Tunku Abdul Rahman, Malaysia. She obtained her Ph.D. in Finance from Universiti Malaya in 2010. She has been teaching in Universiti Tunku Abdul Rahman since 2003. She was also the SC-OCIS Visiting Fellow in Islamic Finance for the academic year 2018/2019 at the OCIS Oxford University.

Dr Lee is active in conducting financial research. Her research focus is on Islamic finance, capital markets, corporate finance, and corporate social responsibility. She has published numerous journal articles and book chapters. Dr Lee's current research interest is in sustainable finance, looking into how Islamic finance plays a role in environmental and financial sustainability, in developed as well as in emerging markets.

Environmental, Social and Governance Practices in Shariah-Compliant Firms

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ABSTRACT

This study investigates the impact of environmental, social and governance (ESG) on the performance of Shariah-compliant firms. Our data is derived from MSCI World Islamic Index and Thomson Reuters ASSET4 database for the period of 2010-2017. We also test whether ESG engagement should be considered an agency or a stakeholder issue. This study finds that ESG activities are positively related to firms' performance. Overall the results are inclined to support the stakeholder theory instead of the agency theory. This study contributes to Islamic finance in terms of providing evidence that Shariah firms engaging in ESG initiatives may lead to improved performance and thereby providing attractive diversification opportunities to global investors.

Keywords: ESG, agency theory, stakeholder theory, Shariah-compliant

1. Introduction

Business sustainability has long been discussed among business experts, regulators, economists, investors, etc. Business sustainability is a concept of the commitment of businesses to spend resources in order to maximize economic benefits for long-term survival. Companies should commit themselves to preserve and protect the interest of shareholders and other stakeholders. Investors are increasingly aware of companies' roles as responsible corporate citizens and using companies' involvement in environmental, social and governance (ESG) activities to screen potential investments. Environmental criteria consider how a company performs as a steward of nature. Social criteria examine how it manages relationships with employees, suppliers, customers, and the communities where it operates. Governance deals with a company's leadership, executive pay, audits and controls and shareholder rights.

In this sense, managers need to be aware of the impact of business decisions on the local community, society at large, environmental and organisational structure. The Governance and Accountability Institute (2017) reveals that 82% of S&P 500 companies in 2017 had engaged and adopted sustainability reporting, which represents a marked improvement from 53% in 2012. Sustainability reporting is based on ESG individual activities. The figures reveal the growing trend in firms to integrate ESG activities into their

business practices in pursuing sustainable corporate operations. However, not all firms are making ESG decisions with respect to business activities in a similar manner. According to Bertrand and Schoar (2003), the board of directors is the key agent in determining corporate policies, decisions, and practices.

There are many companies incorporating ESG into their business practices to reinforce their relationship with society and employees. However, the question of interest in this study is the interaction between ESG practices and Shariah-compliant. Despite the growing Islamic finance and acceptance of ESG, there is a very limited analysis of the impact of combined ESG and Shariah-compliant on firms' performance. At present, Erragragui and Revelli (2016) is the only study examining the performance of Islamic portfolios with varying ESG scores. Their results of the four-factor model indicate no adverse effects on returns due to the ESG practices on Shariah-compliant stocks. Prior studies focus on the link between ESG practices and the non-Shariah-compliant firms' performance has shown mixed findings (e.g., Lee and Faff, 2009; Dhaliwal, et al., 2011; Verheyden et al., 2016; Li et al., 2018).

Friedman (1970) argues that the only responsibility of the corporation is to make profit. Extending this view, several studies argue that corporate social responsibility activities are often manifestations of managerial agency problems inside the firm (Benabou and Tirole, 2010; Masulis and Reza, 2015). Brown et al. (2006) and Krueger (2015) find that managers engage in corporate philanthropy that benefits themselves at the expense of shareholders. Similarly, agency costs are incurred when managers invest in social activities to build up their personal reputation (Barnea and Rubin, 2010) and can lose focus on core managerial responsibilities (Jensen, 2002). Overall, based on the agency view, firms' engagement in ESG practices are detrimental to the interest of shareholders.

In contrast to the agency view, the stakeholder theory suggests that managers of firms should be accountable to shareholders and all other stakeholders (Freeman, 1994). The stakeholder theory is relevant when applying to a firm that promotes efforts to help protect the environment, seek social equality and improve community relations, can and often do adhere to value-maximizing governance practices. Studies such as Edmans (2011) and Deng et al. (2013) state that based on the stakeholder perspective, good management firms with value maximization objectives can incorporate stakeholder value and not merely shareholder value. As such, good management firms are more likely to engage with ESG responsibilities.

In short, ESG practices can be consistent with maximizing shareholder wealth as well as achieving broader responsibility goals.

Over the past decade, the market for Islamic finance industry experience tremendous growth. Global Islamic financial assets are estimated to have grown over USD2 trillion and expected to reach USD3.5 trillion by 2021 (IMF report, 2019). The current literature on ESG effects does not consider the distinction between Shariah and non-Shariah companies. The distinction between Shariah-compliant and non-Shariah-compliant business is the former must follow *Shariah* principles. The Shariah equities screening is based on *Shariah* principles that apply ethical and financial criteria that represent a potential crossover with ESG screen. It bears similarity to the ESG screen in its socially responsible purposes and the exclusion of businesses that are deemed unethical. It would be interesting to examine if the Shariah-compliant firms engaging in ESG practices are more in line with the agency or stakeholder theory.

In this study, our objective is to investigate the impact of environmental, social and governance on Shariah-compliant firm performance. Using a dataset consists of MSCI World Islamic Index listed firms. Additionally, we also test whether ESG engagement should be regarded as an agency or stakeholder issue. We choose to examine the MSCI World Islamic Index constituents for a number of reasons. First, considering the tremendous growth of Islamic investments, studies especially utilizing the dataset of Shariah-compliant firms are limited, which clearly indicates the importance of investigating the ESG decisions of these firms. Second, prior studies are largely focused only on the impact of ESG on firm performance (e.g., Lee et al., 2013; Halbritter and Dorfleitner, 2015; Fatemi et al., 2018); these studies do not test for the agency and stakeholder theory. Third, there has been a tremendous increase in the constituents of the MSCI World Islamic Index that integrates ESG practices in their business activities. At present, more than 95% of firms disclose ESG information on the ASSET4 database. Consequently, the constituents of the Asset4 database and MSCI World Islamic Index provides a unique dataset of combined ESG and Shariah screening representing a large sample with global coverage. Fourth, the results of our study can provide some useful information for investors for portfolio diversification and for policymakers in promoting ESG activities in Shariah-compliant firms.

The remainder of the paper is organized as follows. Section 2 discusses the ESG and Shariah-compliant screening methodology. Section 3 discusses the literature review and hypothesis development. Section 4 describes the data, variables and method used. Section 5 presents and discusses the findings. Section 6 presents the conclusion of the study.

2. ESG and Shariah Screening Methodology

The ESG initiatives include a range of issues related to company activities in environmental, social relations and corporate governance aspects to promote sustainable business practices (Thomson Reuters ESG scores, 2017). The environmental aspect takes into account the firm's commitment, efficiency and effectiveness towards reducing harmful emissions and other environment related issues. This includes company approach and performance on recycling, waste, greenhouse gas emissions, climate change and other types of environmental impact. The social aspect takes into account firm's interest and wellbeing of communities, the capacity to generate trust and loyalty with its stakeholders as a result of its management practices. The social activities include human rights, employee's welfare, product liability, and company relationships with stakeholders such as customers, society and governments. The governance aspect concerns company's system and processes to ensure the board members and managers act in the best interest of stakeholders' long-term goals. This includes all aspects of the board characteristics (i.e., board composition, board leadership, board independent, etc.), risk management and business ethics.

Table 1 presents common screens employed in Islamic finance and ESG practices. Islamic finance is norms-based exclusionary screening. It can be seen that there are some distinct differences in the screening procedures of ESG and Shariah-compliance but there are also some conceptual similarities. The similarities are in the philosophy that both try to separate ethically and morally good companies that promote goodness to human life and preserve the environment from those that do not. Dusuki (2008) argues that Shariah screens are more specific because they are based on the moral and ethical principles from the Quran (the revealed word of God) and Sunnah (the sayings and practices of Prophet Muhammad) which are absolute from the Islamic point of view. Activities prohibited by *Shariah* may or may not be shared by the ESG screens and vice-versa. For example, environmental issues are not explicitly considered in Shariah screening but these are important concerns of ESG screening (Charfeddine et al. 2016). On the other hand, the application of financial ratio limits are applied to Shariah companies but this is not relevant in ESG screening. Erragragui

and Revelli (2016) present an extensive discussion on the interaction between the Shariah and ESG screens from corporate and investors' perspectives.

The Shariah-compliant screening procedures consist of two levels: business activity and financial screenings (MSCI Islamic index series methodology, 2017). In business activity screens, firms are not allowed to be directly involved in, or deriving more than 5% of their revenues from non-Shariah business activities such as alcohol, tobacco, pork-related products, interest-based financial services, defence/weaponry, gambling/casino operations, music, hotels, cinemas, and adult entertainment. In the financial screen, three financial ratios are checked and any of the ratios must not exceed 33.33%. These ratios are (1) total debt to total assets; (2) the sum of cash and interest-bearing securities over total assets; and (3) the sum of accounts receivables and cash over total assets. Companies that pass both the screening criteria are classified as Shariah-compliant, otherwise they are non-Shariah-compliant.

Table 1: Common screens employed in Islamic finance and ESG practise

	Islamic finance	ESG practices
Norms-based Exclusions		
Alcohol	√	
Weapons	√	
Narcotics	√	
Tobacco	√	
Gambling	√	
Pornography	√	
Highly indebted companies	√	
Companies with high liquid assets	√	
Companies with high interest income	√	
Best-in-class		
Social		√
Environmental		√
Business Ethics		√
Labor Standards		√
Human Rights		√
Corruption		√
CG & Executive Compensation		√
GRI reporting and transparency		√
Global health		√
Political donations		√
Tax avoidance		√
Advocacy & Engagement		√
Community investing		
Social Impact Bonds		√
Green bonds		√

Notes: CG denotes corporate governance

Source: Thomson Reuters Responsible Finance Report 2015

3. Literature Review and Hypothesis Development

3.1. The Agency Theory

The question of how a firm's ESG activities influence firm performance has been subject to contentious debate. Based on Jensen and Meckling's (1976) agency theory, it can be argued that engagement of ESG reflects agency costs that creates problem between managers and shareholders. Managers may carry out ESG activities for their own personal interests (Brown et al., 2006), or investing to obtain private benefits by building their reputation as good citizens at the cost to shareholders (Barnea and Rubin, 2010). In this view, ESG engagement is a net waste of firm resources, hence reduces firm value.

Another argument is the managerial opportunism, which is also based on agency theory that suggests that managers' decisions are not constantly aligned with shareholders' interests. ESG can be a source of agency problems when opportunistic managers use firm resources to engage in ESG activities to avoid negative attention and to offset or justify poor financial performance (also known as window dressing). In contrast, when having good financial performance, managers may reduce ESG expenditure in order to take advantage of the opportunity to increase their own short-term private gains. Borghesi et al. (2014), Brown et al. (2006) and Kao et al. (2018) reveal that opportunistic managers pursue their own private benefits that hurt shareholders and other stakeholders. The above discussion suggests that according to the agency view, ESG is generally not in the best interest of shareholders. Therefore we formulate the following hypothesis:

Hypothesis 1: Based on the agency theory, there is a negative relationship between ESG engagement and firm performance.

According to literature, firms that have substantial liquid resources or firms having less market monitoring are more likely to engage in activities that are detrimental to shareholder interests (e.g., Jensen, 1986; Servaes and Tamayo, 2014; Ferrell et al., 2016). For example, managers may invest funds for the purpose of management entrenchment, empire-building and other private benefits extraction (Masulis et al., 2009). Krueger (2015) and Ferrell et al. (2016) state that high liquidity as shown by high capital expenditure and free cash flow can be an indication of agency costs. Having liquidity higher than an appropriate level may be detrimental to performance because liquid assets are less productive. In this respect, the liquidity variable, acting in conjunction with ESG would have a negative relationship with

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financial performance. On the contrary, high values of financial constraint as shown by high dividend pay-out and leverage can help to reduce managerial agency problems. High financial constraints would serve to prevent misuse of resources by the management due to closer market monitoring. In this respect, the financial constraint variables, acting in conjunction with ESG would have a positive relationship with financial performance.

Based on the above discussions, and using the agency theory as the premise, we formulate the following additional hypotheses on agency theory:

Hypothesis 2: Liquidity variables acting in conjunction with ESG engagement would have a negative effect on firm performance.

Hypothesis 3: Financial constraint variables acting in conjunction with ESG engagement would have a positive effect on firm performance.

3.2. The Stakeholder Theory

The stakeholder theory states that the better a firm manages' relationships with its stakeholders; the more successful it will be over time. The stakeholders include individual or groups who benefit from or are harmed by firm actions (Freeman, 1994). Freeman's theory suggests that a company's real success lies in satisfying all its stakeholders, not just those who might profit from its stock. The stakeholder theory views that satisfied and happy employees will be more motivated in their jobs; satisfied customers will foster loyalty, satisfied suppliers will provide discounts, etc., which in turn enhances a firm's reputation, and leads to better financial performance and sustainability. This refers to good management hypothesis based on the stakeholder theory. Jo and Harjoto (2012) and El Ghouli et al. (2017) find that ESG engagement positively affects firms' performance because ESG activities can resolve conflicts between managers and stakeholders. This suggests engaging ESG practices would be worthwhile consideration for a firm's management.

Since Shariah firms are those that have passed ethics and morality tests, this study expects that Shariah firms would have a greater likelihood of good management practices to engage in ESG activities. Hence, this will result in an improved relationship between firms and their stakeholders that will enhance firm performance.

Using the stakeholder theory as the premise, we propose the following hypothesis:

Hypothesis 4: Based on the stakeholder theory, there is a positive relationship between ESG engagement and firm performance.

3.3. Financial Slack Hypothesis

A firm's internal factors can influence the level of ESG engagement as it imposes additional costs when activities are carried out. Since ESG expenditure is discretionary in nature, firms may be more willing to engage in ESG if they have abundant resources. Qi et al. (2014) state financial slack theory provides a theoretical grounding for the effects of financial resource availability for ESG expenditure. Since the financial benefits generated from ESG engagement is uncertain, thus when ample financial slack exists, firms are able to engage more ESG activities and send a credible signal of commitment and responsibilities to stakeholders. Qi et al. (2014) find that financial slack acts as a moderating effect on ESG practices and firm performance. According to Campbell (2007), firms with abundant resources are more capable of absorbing additional costs and more willing to undertake socially responsible actions in their business strategies. Conversely, when there is a lacking in financial slacks, ESG expenditure takes a lower priority. Qi et al. (2014) also find that high financial slack tends to strengthen environmental performance and firm performance. Although the above evidence is derived in a non-Shariah setting, we believe similar reasons apply to Shariah firms as well. Therefore, from the perspective of Islamic finance, the availability of financial slack plays an important role in allowing firms to engage in ESG activities. Thus, based on the financial slack theory, the hypothesis is formulated as:

Hypothesis 5: Financial slacks acting in conjunction with ESG engagement would have a positive effect on firm performance.

4. Data and Methodology

4.1. Data

Our sample consists of Shariah-compliant firms that are included in the MSCI World Islamic Index. Companies' involvement in ESG is derived from the Thomson Reuters ASSET4 database. Our period of study covers 2010-2017. Thus, for a firm to be included in our sample it needs to pass two screening processes: first the Shariah screening of the MSCI, and second the ESG involvement in the Thomson Reuters database. In total, we identified 501 firms. ASSET4 database provides country of domicile and Thomson Reuters Business

Classification (TRBC) industry group code. However, we excluded those Shariah firms with missing ESG and financial data. Taking into account these conditions, our final sample consists of a balanced panel dataset of 461 firms over the 8-year period, giving a total of 3688 firm-year observations. We choose 2010 as the starting year due to the information availability of the constituents of the MSCI World Islamic Index. Table 2 presents the distribution of the sample by industry type and by country. The final sample covers 20 industry groups in 20 countries. We use the industry classification to take into account the firm's industry characteristic. Industries with the greatest number of observations are oil and gas (11.93%), machinery (9.98%), personal goods (6.94%) and food products (6.72%). The sample primarily includes firms from developed markets, mainly the United States (30.15%), Japan (23.64%), and the United Kingdom (8.24%).

Table 2: Sample of breakdown by industry and country

Industry	No. obs.	%	Country	No. obs.	%
Oil and gas	55	11.93	United States	139	30.15
Machinery	46	9.98	Japan	109	23.64
Personal goods	32	6.94	United Kingdom	38	8.24
Food Products	31	6.72	Canada	27	5.86
Chemicals	29	6.29	France	24	5.21
Pharmaceutical products	29	6.29	Australia	23	4.99
Construction and Material	28	6.07	Germany	22	4.77
Metals	27	5.86	Switzerland	13	2.82
Automobiles and parts	26	5.64	Hong Kong	10	2.17
Transportation	24	5.21	Sweden	9	1.95
Specialty Retailers	19	4.12	Netherlands	9	1.95
Software and computer services	18	3.90	Singapore	8	1.74
Healthcare	18	3.90	Finland	6	1.30
Real estate	16	3.47	Norway	5	1.08
Electronic equipment	15	3.25	Spain	4	0.87
Technology	13	2.82	Italy	4	0.87
Professional services	12	2.60	Belgium	4	0.87
Textiles	11	2.39	Denmark	3	0.65
Telecommunications	6	1.30	Austria	2	0.43
Media	6	1.30	New Zealand	2	0.43
Total	461	100.00	Total	461	100.00

Notes: This table presents the industry distribution and country for 3,688 firm-year observations about 461 firms between 2010 and 2017.

4.2. Measurement of Variables

This study uses two different proxies for firm performance. The two proxies are the return on assets (*ROA*) and economic sustainability performance (*ESP*). *ROA* is computed as the net income over average total assets. Following Qi et al. (2014), and Li et al. (2017), we employed *ROA* for financial performance. The economic sustainability performance (*ESP*) measures a firm's capacity to generate sustainable growth and a high return on investment through efficient use of all its financial and non-financial resources. The Thomson Reuters ASSET4 database publishes the aggregate ESG scores as well as the scores of the individual ESG dimensions, which are the environmental (*Env*), social (*Soc*) and governance (*Gov*). The scores range from 0 to 100.

Based on previous literature (e.g, Ferrell et al., 2016), we utilize four agency proxies: (1) free cash flow (*FCF*) measured by operating income before depreciation minus interest expenses and income taxes and capital expenditures, scaled by total assets; (2) capital expenditure (*Capex*) scaled by total assets; (3) dividend payout (*Div*) scaled by sales; and (4) *Leverage*, measured by total debt over total equity. This study uses two financial slack proxies: (1) cash (*Cash*), computed as the ratio of cash and equivalents to total assets; and (2) current ratio (*CurRatio*) is measured as current assets over current liabilities.

In addition to the ESG, agency and financial slack variables, we include a number of measures commonly used in the analysis of firm performance as control variables. These measures include: firm size (*Size*) represented by total assets, research and development intensity (*R&D*) computed as research and development expenditure scaled by total assets, the operating performance (*AssetsTurnover*) measured as assets turnover rate which is calculated as operating revenue scaled by total assets, and the ratio of market to book value of equity (*MTB*) computed as the ratio of market value of assets to book value of assets.

4.3. Model Specification

The empirical model for hypothesis 1 and 4

To test Hypotheses 1 and 4, we follow Ferreira and Laux (2007) by using a lead-lag panel regression to test the relationship between firm performance and the aggregate ESG as well as individual dimensions of ESG namely *Env*, *Soc*, and *Gov* and a set of control variables:

$$FP_{i,t} = \alpha + \varphi_1 ESG_{i,t-1} + \beta_1 Size_{i,t-1} + \beta_2 AssetsTurnover_{i,t-1} + \beta_3 MTB_{i,t-1} + \beta_4 R\&D_{i,t-1} + \gamma_i + \delta_t + \lambda_i + \varepsilon_{i,t} \quad (1)$$

$$FP_{i,t} = \alpha + \varphi_1 Env_{i,t-1} + \varphi_2 Soc_{i,t-1} + \varphi_3 Gov_{i,t-1} + \beta_1 Size_{i,t-1} + \beta_2 AssetsTurnover_{i,t-1} + \beta_3 MTB_{i,t-1} + \beta_4 R\&D_{i,t-1} + \gamma_i + \delta_t + \lambda_i + \varepsilon_{i,t} \quad (2)$$

where the *FP* denotes firm performance measured by *ROA* and *ESP*. *ESG* represents aggregate ESG score. In equation (2), we repeat the regression by replacing the *ESG* with individual elements of *Env*, *Soc* and *Gov* to estimate the differential effect of these elements on firm performance. The subscript *i* denote individual firm and *t* is the year. γ_i , δ_t and λ_i denote country, industry and year fixed effects, while $\varepsilon_{i,t}$ is the random error term.

The empirical model for hypothesis 2 and 3

Hypotheses 2 and 3 specifically focus on testing if the *ESG* activities are motivated by managers' private benefits or otherwise. These hypotheses focus on the four agency variables, which are: (1) *FCF*; (2) *Capex*; (3) *leverage*; and (4) *Div*. These variables are included in the following regressions:

$$FP_{i,t} = \alpha + \varphi_1 ESG_{i,t-1} + \beta_1 Agency_{i,t-1} + \beta_2 ESG_{i,t-1} * Agency_{i,t-1} + \beta_3 Size_{i,t-1} + \beta_4 AssetsTurnover_{i,t-1} + \beta_5 MTB_{i,t-1} + \beta_6 R\&D_{i,t-1} + \gamma_i + \delta_t + \lambda_i + \varepsilon_{i,t} \quad (3)$$

$$FP_{i,t} = \alpha + \varphi_1 Env_{i,t-1} + \varphi_2 Soc_{i,t-1} + \varphi_3 Gov_{i,t-1} + \beta_1 Env_{i,t-1} * Agency_{i,t-1} + \beta_2 Soc_{i,t-1} * Agency_{i,t-1} + \beta_3 Gov_{i,t-1} * Agency_{i,t-1} + \beta_4 Size_{i,t-1} + \beta_5 AssetsTurnover_{i,t-1} + \beta_6 MTB_{i,t-1} + \beta_7 R\&D_{i,t-1} + \gamma_i + \delta_t + \lambda_i + \varepsilon_{i,t} \quad (4)$$

Following the arguments of Ferrel et al. (2016), we predict the coefficients for the first two interaction variables (*ESG*FCF* and *ESG*Capex*) to be negative, while the coefficients for the last two interaction variables (*ESG*leverage* and *ESG*Div*) to be positive. However, Ferrel et al. (2016) state that firms with higher *FCF* and *Capex* do not necessarily reflect higher agency costs as long as there is sufficient investment opportunities and growth. To address this concern we rank our data based on the agency variables and transform them into dummy variables, whereby the top one-third are given the value of 1 and others 0. Based on our earlier argument, only firms with high values of the variables are more likely to engage in *ESG* activities for private benefits and this should be captured by the interaction variables.

The empirical model for hypothesis 5

To test our fifth hypothesis of the moderating effect of financial slack we run the following models:

$$FP_{i,t} = \alpha + \varphi_1 ESG_{i,t-1} + \beta_1 Financial\ Slack_{i,t-1} + \beta_2 ESG_{i,t-1} * Financial\ Slack_{i,t-1} + \beta_3 Size_{i,t-1} + \beta_4 AssetsTurnover_{i,t-1} + \beta_5 MTB_{i,t-1} + \beta_6 R\&D_{i,t-1} + \gamma_i + \delta_t + \lambda_i + \varepsilon_{i,t} \quad (5)$$

$$FP_{i,t} = \alpha + \varphi_1 Env_{i,t-1} + \varphi_2 Soc_{i,t-1} + \varphi_3 Gov_{i,t-1} + \beta_1 Env_{i,t-1} * Financial\ Slack_{i,t-1} + \beta_2 Soc_{i,t-1} * Financial\ Slack_{i,t-1} + \beta_3 Gov_{i,t-1} * Financial\ Slack_{i,t-1} + \beta_4 Size_{i,t-1} + \beta_5 AssetsTurnover_{i,t-1} + \beta_6 MTB_{i,t-1} + \beta_7 R\&D_{i,t-1} + \gamma_i + \delta_t + \lambda_i + \varepsilon_{i,t} \quad (6)$$

We use two alternative financial slack variables: (1) *Cash*, and (2) *CurRatio*. The financial slack hypothesis predicts a positive coefficient for the interaction terms. We rank *Cash* and *CurRatio* data and transform them into dummy variables, whereby the top one-third is given the value of 1 and others 0.

5. Results and Discussion

5.1. Descriptive Statistics and Correlation

Table 3 presents the descriptive statistics of the variables used in the regression model. The mean (standard deviation) value of *ROA* is 6.65% (6.17%). Regarding the *ESP* and the ESG score, the mean value is 72.43 and 62.70, respectively. Within the individual dimensions, the environmental has the highest mean value of 74.51, while governance has the lowest mean value of 60.07.

In terms of the mean values for the agency variables, the free cash flow to total assets range vary between -0.21 and 0.40, with a mean value of 0.095. The average ratio of capital expenditure to total assets is 5.06. The average leverage i.e. total debt to equity ratio is 18.35% and varies between 0.10% and 32.20% and that the standard deviation is 8.80%, which is quite low, showing a relatively low variation in the values. The mean of dividend payout to sales is 1.88%. The cash holding to total assets and the current ratio that measures the financial slack shows a mean value of 0.08 and 1.83%, respectively.

The statistics for the control variables, firm size (total assets) is USD28.612 billion, and the median value is USD10.919 billion. Market-to-book value that measures a firm's growth opportunities shows a mean value of 2.46. This indicates that the market as a whole has a

generally good perception about the firm's future prospects. The average assets turnover and R&D expenditure to total assets is 0.88% and 0.022, respectively.

Table 3: Descriptive statistics of key variables

	Mean	Median	Max	min	Std. dev.
ROA	6.650	5.940	37.930	-30.680	6.169
Economic sustainability performance (ESP)	72.432	81.280	98.590	2.420	24.104
ESG	62.695	65.080	97.520	8.020	16.282
Environmental score	74.508	88.340	95.500	8.480	26.405
Social Governance	72.550	83.580	97.530	4.710	25.642
Governance score	60.068	72.760	98.220	1.180	32.196
Free cash flows (scaled by total assets)	0.095	0.089	0.399	-0.209	0.055
Capital expenditure (scaled by total assets) (percent)	5.056	4.230	30.760	0.010	3.557
Leverage ratio (percent)	18.346	19.950	32.220	0.010	8.801
Dividend payout (dividend to sales) (percent)	1.883	0.498	18.480	0.000	3.211
Cash holding (scaled by total assets)	0.084	0.066	0.397	0.000	0.070
Current ratio (percent)	1.832	1.530	13.210	0.220	1.086
Firm size (total assets) (billions of USD)	28.612	10.919	533.712	0.161	53.154
Market-to-book value	2.456	1.850	16.710	0.180	1.968
Assets turnover	0.875	0.790	5.170	0.010	0.594
Research and development (scaled by total assets)	0.022	0.005	0.449	0.000	0.036

Notes: This table shows the summary statistics of variables used in our regression models.

Table 4 reports the Pearson pairwise correlation matrix of the dependent and independent variables used in our regression analysis. All of the correlation coefficients are below 0.80. A correlation coefficient of more than 0.80 indicates a serious multicollinearity problem (Brooks, 2014). Hence, multivariate analysis can be applied to examine the relationships between the dependent and independent variables. We note that the correlation coefficients of the aggregate ESG score and the individual scores of environmental, social and governance score with the *ROA* and *ESP* are all positive, hence providing preliminary support for the stated hypotheses.

Table 4: Pearson correlations among variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. ROA	1.00															
2. Economic	0.11	1.00														
3. ESG	0.53	0.56	1.00													
4. Environmental	0.19	0.50	0.72	1.00												
5. Social	0.42	0.64	0.78	0.76	1.00											
6. Governance	0.11	0.31	0.35	0.05	0.23	1.00										
7. FCF	0.45	0.08	-0.04	-0.05	-0.02	-0.10	1.00									
8. Capex	0.04	0.02	-0.02	-0.07	-0.06	-0.07	0.25	1.00								
9. Div	0.03	0.14	0.15	0.02	0.09	0.34	-0.03	-0.04	1.00							
10. Leverage	0.25	0.11	0.14	0.13	0.17	0.21	-0.23	-0.02	0.13	1.00						
11. Cash	0.16	-0.08	0.08	0.02	0.09	0.23	0.16	-0.11	-0.20	-0.29	1.00					
12. Current ratio	0.17	0.16	0.18	0.16	0.16	0.13	0.11	0.00	-0.04	-0.35	0.33	1.00				
13. Size	-0.30	0.02	0.14	0.31	0.15	-0.63	-0.21	-0.03	-0.30	0.02	0.06	-0.08	1.00			
14. MTB	0.49	0.04	-0.03	-0.12	-0.03	0.17	0.49	0.05	-0.01	-0.09	0.22	0.06	-0.35	1.00		
15. Assets turnover	0.21	-0.01	-0.06	-0.02	0.00	-0.06	0.24	0.01	-0.30	-0.17	0.15	-0.09	-0.07	0.21	1.00	
16. R&D intensity	-0.02	-0.05	0.08	0.07	0.07	-0.11	0.08	0.08	-0.11	-0.30	0.31	0.19	0.07	0.23	-0.08	1.00

Notes: This table shows the Pearson pair-wise correlation matrix. Bold font texts indicate statistically significant at the 5% level or better. Firm-year observations are 3688.

5.2. Regression results

Hypotheses 1 and 4

We first report the result between ESG and firm performance, without taking into account agency and financial slack variables. Table 5 reports the regression results from equations 1 and 2, using the *ROA* and *ESP* as the dependent variables. All regressions show significant *F*-statistics and the *R*-squared are reasonably high. The first two columns report the direct effects of the independent variable of aggregate ESG and control variables (Size, Assets Turnover, MTB, and R&D Intensity). All independent variables are lagged. In columns 1 and 2, the estimated coefficient associated with aggregate ESG is positive and significant for both *ROA* and *ESP*. This means that ESG engagement improves firm performance. Regarding our control variables, the signs of the coefficients are largely consistent with the findings of the previous studies. The coefficients of firm Size and R&D Intensity is negatively related to both *ROA* and *ESP*, consistent with Li et al. (2018). Additionally, Assets Turnover and MTB show statistically significant positive associations with firm performance.

The ESG is the aggregate score of three individual dimensions, which are environmental, social and governance. Duuren et al. (2016) find that investors may attach different weights to these individual factors. Therefore, we further investigate the relationship between individual ESG dimensions and firm performance. The results in columns 3 and 4 show that all the individual ESG dimensions have positive effects on *ROA* and *ESP*, with the exception of the environmental dimension on *ESP*. Our result is consistent with Li et al. (2018) that ESG engagement enhanced stakeholder trust in boosting firm performance.

Our results therefore support Hypothesis 4 on stakeholder theory that predicts a positive relation between ESG engagement and firm performance among Shariah firms. The evidence presented is inconsistent with the agency theory and Hypothesis 1 is not supported.

Table 5: The impact of ESG and individual dimensions of environmental, social and governance on firm performance

	(1) ROA	(2) ESP	(3) ROA	(4) ESP
ESG	0.021*** (3.507)	0.731*** (33.099)		
Environmental			0.017*** (2.984)	0.012 (1.635)
Social			0.026*** (4.374)	0.510*** (24.175)
Governance			0.007** (2.483)	0.113*** (11.050)
Size	-0.548*** (-6.410)	-2.828*** (-8.692)	-0.604*** (-7.020)	-1.861*** (-6.285)
Assets Turnover	0.990*** (6.134)	1.615*** (2.566)	1.025*** (6.151)	1.366** (2.371)
MTB	1.429*** (29.626)	1.091*** (5.993)	1.365*** (27.419)	0.503** (2.904)
R&D Intensity	-0.312*** (-9.521)	-0.466*** (-3.698)	-0.301*** (-9.042)	-0.227** (-2.001)
Intercept	10.469 (7.561)	18.863 (3.645)	11.696 (8.508)	6.676 (1.394)
Country, Industry and Year effects	Yes	Yes	Yes	Yes
F-statistic	65.750	80.300	62.840	112.630
R-squared	0.335	0.372	0.333	0.480

Notes: N = 3688 firm-year observations. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively. The figures in parentheses are the *t*-statistic values.

Hypotheses 2 and 3

In this section, we test whether the traditional corporate finance proxies for agency problems such as liquidity and financial constraint, account for the ESG activities in the Shariah firms. Hypotheses 2 and 3 test these two views. For liquidity, we use two proxies; these are the FCF and Capex, while for financial constraints, we use Leverage and Dividend payout as proxies. The agency view predicts the liquidity variables to have a negative effect on performance while the financial constraint variables to have a positive relationship.

Table 6 reports the regression results. The *F*-statistics for all regressions are significant and the *R*-squared are reasonably high, ranging from 0.35 to 0.42. The relationship between aggregate ESG and firm performance remain positive. In Panel A, the coefficients of the interaction variables of the liquidity variables (*ESG*FCF* and *ESG*Capex*) are all positive and significant, while the interaction coefficients on financial constraint variables (*ESG*leverage* and *ESG*Div*) are mostly insignificant. These results are robust to the different performance proxies used as shown in Panel B where we substitute the dependent variable with *ESP*. The results are qualitatively similar. Hypotheses 2 and 3 are therefore not

supported by our analysis. Our results indicate that the agency theory may not be a valid description of the behaviour of *Shariah* firms practicing ESG.

Table 6: The moderating effect of agency indicators on the relationship between ESG and firm performance

	Panel A: Dependent variable - ROA				Panel B: Dependent variable - ESP			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ESG	0.019** (2.855)	0.015** (2.421)	0.021*** (3.502)	0.016** (2.491)	0.034*** (9.164)	0.036*** (9.098)	0.037*** (9.675)	0.039*** (9.525)
FCF	5.364*** (7.705)				5.418*** (8.746)			
ESG*FCF	0.032*** (2.963)				0.034*** (3.639)			
Capex		0.120*** (3.117)				0.109*** (2.896)		
ESG*Capex		0.010** (2.423)				0.009** (2.255)		
Leverage			0.154*** (5.329)				0.151** (2.028)	
ESG*Leverage			0.002 (0.665)				0.003 (0.716)	
Div				-0.040 (-0.990)				-0.060 (-1.481)
ESG*Div				0.007* (1.757)				0.006 (1.643)
Size	-0.471*** (-5.308)	-0.630** (-6.917)	-0.398*** (-4.426)	-0.661*** (-7.117)	-0.596*** (-6.905)	-0.790*** (9.143)	-0.535*** (-6.328)	-0.832*** (-9.438)
Assets Turnover	0.887*** (5.511)	1.235*** (7.422)	0.851*** (5.206)	1.214*** (6.885)	0.810*** (5.080)	1.139*** (6.904)	0.778*** (4.810)	1.089*** (6.261)
MTB	1.026*** (19.476)	1.199*** (22.309)	1.252*** (24.183)	1.256*** (23.570)	1.026*** (19.679)	1.197*** (22.509)	1.247*** (24.349)	1.250*** (23.731)
R&D Intensity	-0.279*** (-8.484)	-0.292*** (-8.554)	-0.292*** (-9.020)	-0.283*** (-8.259)	-0.274*** (-8.472)	-0.291*** (-8.737)	-0.292*** (-9.246)	-0.284* (-8.472)
Intercept	8.221 (5.581)	10.439 (7.003)	10.369 (7.275)	11.395 (7.592)	8.854 (6.065)	11.425 (7.787)	11.062 (7.936)	12.437 (8.465)
Country, Industry and Year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F-statistics	51.790	42.730	50.200	42.240	54.440	45.240	53.080	45.020
R-squared	0.406	0.361	0.388	0.353	0.418	0.374	0.401	0.368

Notes: n = 3688 firm-year observations ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively. The figures in parentheses are the t-statistic values.

As another form of robustness test, we rerun the regressions replacing the aggregate ESG with the individual ESG components – environmental, social and governance. The results are presented in Table 7. Our focus is on the interaction variables. For *ROA*, the results are very similar to the previous table. The coefficients for the first two agency proxies and their interaction variables are all positive and for the last two variables and their interaction variables are insignificant.

Table 7: The moderating effect of liquidity and financial constraints on the relationship between individual ESG dimensions and firm performance

	Panel A: Dependent variable - ROA				Panel B: Dependent variable - ESP			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Env	0.002* (1.838)	0.012* (1.720)	0.016** (2.500)	0.019** (2.865)	0.035** (2.395)	0.003** (2.141)	0.002 (1.091)	0.023* (1.805)
Soc	0.013** (2.068)	0.015** (2.045)	0.024*** (3.590)	0.025*** (3.729)	0.547*** (17.745)	0.518*** (17.268)	0.520*** (20.623)	0.522*** (22.321)
Gov	0.008** (2.119)	0.003** (2.484)	0.002*** (3.438)	0.006** (1.986)	0.078*** (4.030)	0.071*** (3.658)	0.087*** (4.460)	0.041** (2.029)
FCF	5.545*** (7.949)				2.918** (2.308)			
Env*FCF	0.030*** (2.759)				0.145*** (3.706)			
Soc*FCF	0.002* (1.679)				0.143*** (3.463)			
Gov*FCF	0.001* (1.746)				0.019* (1.890)			
Capex		0.151*** (3.880)				0.599*** (4.444)		
Env*Capex		0.004 (0.397)				0.042 (1.123)		
Soc*Capex		0.015** (2.095)				0.046** (2.111)		
Gov*Capex		0.016** (2.765)				0.012 (1.606)		
Leverage			0.154*** (8.520)				0.128*** (2.672)	
Env*leverage			0.003 (0.257)				0.063 (1.628)	
Soc*leverage			0.006 (0.453)				0.063 (1.443)	
Gov*leverage			-0.009 (-1.629)				-0.009 (-0.464)	
Div				-0.022 (-0.526)				-0.128* (-1.788)
Env*Div				0.029 (1.152)				-0.007 (-0.158)
Soc*Div				-0.021 (-1.496)				-0.096 (-1.610)
Gov*Div				-0.002 (-0.301)				0.085 (1.122)
Size	-0.429*** (-4.786)	-0.603*** (-6.547)	-0.365*** (-4.021)	-0.619*** (-6.601)	-1.916*** (-5.939)	-1.904*** (-5.961)	-2.129*** (-6.590)	-1.951*** (-6.035)
Assets Turnover	0.850*** (5.274)	1.165*** (6.967)	0.789*** (4.799)	1.178*** (6.621)	1.097* (1.889)	1.355** (2.335)	0.664 (1.133)	1.283** (2.089)
MTB	1.016*** (15.271)	1.209*** (19.459)	1.261*** (21.323)	1.258*** (22.554)	0.270*** (3.423)	0.207** (2.110)	0.335* (1.814)	0.409** (2.221)
R&D Intensity	-0.277*** (-7.085)	-0.291*** (-8.573)	-0.295*** (-9.023)	-0.281*** (-8.235)	-0.183 (-1.556)	-0.236** (-2.004)	-0.112** (-1.978)	-0.187 (-1.587)
Intercept	8.430*** (5.546)	10.783*** (6.966)	10.436*** (6.986)	11.556*** (7.412)	2.951 (0.539)	5.124 (0.954)	1.773 (0.333)	2.136 (1.397)
Country, Industry and Year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F-statistic	48.310	39.890	46.460	39.100	69.430	69.520	70.850	70.510
R-squared	0.409	0.363	0.390	0.354	0.498	0.499	0.493	0.497

Notes: n = 3688 firm-year observations ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively. The figures in parentheses are the *t*-statistic.

For *ESP*, the signs of the interaction coefficients of the FCF interaction variables are positive while other coefficients are mostly insignificant. All these findings therefore do not support the ESG agency view that says ESG activities are detrimental to performance. Our findings are consistent with Ferrell et al. (2016) who conclude that ESG activities are not induced by agency motives but instead can enhance firm performance.

Hypothesis 5

Seifert et al. (2004) argue that financial slack provides firms with a convenient avenue to be involved in ESG activities. It is also possible that good performance on ESG is more likely to arise when firms are financially strong and thus having ample resources to engage in ESG related activities. Our hypothesis 5 is to test the moderating influence of the financial slack on performance. We include the financial slack proxies (cash holding and current ratio) into the regression equations. Table 8 reports the regression results. Again the relationship between aggregate ESG and firm performance remains positive. However, the variables of interest are the interaction variables in columns 1 to 4, which are the *ESG*Cash* and *ESG*CurRatio*. It is observed that the coefficients of these interaction variables are either negative or insignificant.

We further examine the effects of the interaction of individual dimensions of ESG and financial slack on performance (columns 5 to 8). Similar to columns 1 to 4, we find that the coefficients to the interaction variables between ESG individual dimensions and slack variables are either negative or insignificant. All in all, these results do not support the financial slack theory that when the level of financial slack is high, firms would engage more ESG activities to improve firm performance. Therefore, our results in this section do not support Hypothesis 5.

Table 8: The moderating effect of financial slacks on the relationship between ESG and individual ESG dimensions and firm performance

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	ROA	ESP	ROA	ESP	ROA	ESP	ROA	ESP
ESG	0.021*** (3.410)	0.688*** (25.457)	0.012** (1.967)	0.688*** (27.524)				
Cash ratio	0.070*** (4.010)	0.021 (1.325)			0.072*** (4.149)	0.102* (1.676)		
ESG*Cash ratio	0.013 (0.790)	0.017 (1.062)						
CurRatio			0.661*** (6.047)	0.630 (1.520)			0.720*** (6.604)	0.047 (1.121)
ESG*CurRatio			0.021 (0.507)	-0.017* (-1.876)				
Env					0.010* (1.674)	0.061** (2.516)	0.015** (2.112)	0.077*** (3.090)
Soc					0.019** (2.618)	0.458*** (14.741)	0.019** (2.465)	0.428*** (13.140)
Gov					0.004** (2.010)	0.086*** (5.647)	0.002* (1.730)	0.090*** (4.651)
Env*Cash ratio					0.009 (0.864)	0.097 (1.483)		
Soc*Cash ratio					0.007 (0.618)	0.113 (1.376)		
Gov*Cash ratio					-0.011 (-0.084)	-0.047 (-1.395)		
Env*CurRatio							0.011 (1.106)	-0.155* (-1.886)
Soc*CurRatio							0.002 (0.300)	0.128 (1.490)
Gov*CurRatio							0.004 (0.751)	-0.037 (-1.371)
Size	-0.597*** (-6.530)	-2.379*** (-6.957)	-0.240** (-2.514)	-2.053*** (-5.777)	-0.533*** (-5.710)	-1.837*** (-5.657)	-0.211** (-2.179)	-1.647*** (-4.837)
Assets Turnover	1.017*** (6.210)	1.117* (1.821)	1.484*** (8.953)	1.481** (2.446)	1.078*** (6.438)	0.099* (1.876)	1.451*** (8.695)	0.237** (2.415)
MTB	1.235*** (23.240)	0.105 (1.528)	1.293*** (25.792)	0.045 (1.225)	1.231*** (21.012)	0.317* (1.704)	1.451*** (23.465)	0.358* (1.937)
R&D Intensity	-0.274*** (-8.090)	-0.015 (-1.120)	-0.294*** (-8.743)	-0.411*** (-3.753)	-0.299*** (-8.710)	-0.166 (-1.384)	-0.290*** (-8.631)	-0.005* (-1.747)
Intercept	10.613*** (7.350)	1.287 (1.238)	3.399** (2.159)	5.414* (1.933)	9.749*** (6.256)	2.678 (1.497)	3.456** (2.101)	6.907 (1.212)
Country, Industry and Year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F-statistics	47.250	59.630	47.908	58.260	39.680	69.600	43.050	71.720
R-squared	0.345	0.407	0.378	0.402	0.356	0.482	0.377	0.491

Notes: n = 3688 firm-year observations ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively. The figures in parentheses are the *t*-statistic.

6. Conclusion

This study investigates the impact of ESG activities on performance among Shariah-compliant firms. We also analyse whether ESG engagements of the firms are motivated by agency or stakeholder motives. Our sample consists of the constituents of the MSCI Islamic World index over the year 2010-2017. Information on firms' involvement in ESG activities

are obtained from Thomson Reuters ASSET4 database. Our dataset is unique in the sense they fulfilled the double screening of Shariah-compliance and ESG involvement. Firm performance is represented by return on assets (*ROA*) and economic sustainability performance (*ESP*). *ESP* measures a firm's capacity to generate sustainable growth and high return on investment through the efficient use of its resources.

This study finds that the ESG involvement of the Shariah firms is positively associated with performance. Additionally, the study finds that firms' involvement in the individual dimensions of ESG, which are environmental, social and governance, are also positively related to performance. These results are robust to both performance measures used in the study, i.e. *ROA* and *ESP*. This evidence supports the stakeholder theory that says ESG practices are consistent with stakeholders' interests and therefore beneficial to firms and enhance firms' performance. The positive relationship between ESG and *ESP* also indicates that Shariah firms undertaking ESG activities are consistent with the motive to generate sustainable growth.

It is traditionally believed that ESG engagement may be associated with agency problems between managers and shareholders. Managers might have a personal interest in investing in ESG to obtain private benefits. This belief suggests a negative impact of ESG on performance. However, our findings do not support the agency perspective of ESG engagement. We find a clear positive relation between ESG and performance. Additionally, we do not find evidence of free cash flow, capital expenditures, leverage, and dividend payout to be associated with the ESG-agency costs perspective. Further, we also find no evidence to support the financial slack hypothesis. This indicates the ESG activities in the Shariah-compliant firms are not initiated by agency motives, but rather due to good management practices that are consistent with the stakeholder theory and financial sustainability.

There is a growing demand from global investors for Shariah-compliant firms because of their non-involvement in sin activities. The main contribution of this study is to provide evidence on the benefits to be gained by Shariah-compliant companies in terms of their engagement with ESG activities. Performance and hence the value of Shariah companies would be enhanced by their involvement in ESG activities. With this understanding investors may confidently choose to invest in companies that are not only morally good but also being

good corporate citizens that engage in ESG activities. Armed with this evidence, corporate managers may be well-advised to consciously going for Shariah-compliance and also actively engaging in ESG activities. In doing so they would be filling up a space in the market by offering a new asset class for portfolio diversification opportunities.

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