



# The Impact of Environmental, Social and Governance Firm-level Rankings on Determinants of Firm Value: An Empirical Evidence from Egypt

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## Abstract

*The main aim of this paper is to investigate the impact of Environmental, Social and Governance (ESG) rating on firm value through the three valuation channels of dividends, free cash flow to firm and cost of equity in the context of Egyptian firms listed on S&P/EGX ESG index. The study conducts static and dynamic regression analyses for the three firm value determinants models to test for the hypothesised relationships in all the examined firms from 2010 till 2022. Empirical results from the statistical analyses highlight that there is a significant positive relationship between ESG rating and dividend payout. In addition, ESG rating has a significant negative impact on free cash flow to firm and cost of equity. Findings offer valuable guidance to practitioners and regulatory bodies in emerging economies, particularly in Egypt, by providing empirical evidence on the potential advantages of firm alignment to ESG practices with increased firm value. Such insights can pave the way for enhanced ESG adoption and sustainability practices, ultimately contributing to the overall improvement of businesses and the environment. The study is the first in the context of Egypt and the Middle East and North Africa region to test for the impact of ESG on the collective three valuation channels of dividends, free cash flow to firm and cost of equity, while providing a comparative analysis between the three firm value determinants in the same context.*

**Keywords:** ESG, Dividends, Firm Value, Cash Flow, Emerging Economies.

## Introduction

In light of the contemporary wave of corporate sustainability, the application of the Environmental, Social, and Governance (ESG) principle is inevitable. This has led to increased attention from business leaders, policymakers, and academics. In response, firms are reevaluating their operational practices and strategic plans to adopt ESG practices. However, a debate persists regarding whether integrating ESG-related activities into business models brings financial benefits or poses threats to growth and value.

Scholars and practitioners have extensively examined the consequences of ESG practices on firm performance and value. The prevailing consensus suggests that sustainability enhances a company's financial performance, consequently acting as a catalyst for shareholder value (Varvara and Victoria, 2022). This positive relation between corporate sustainability and financial performance is attributed to enhanced reputations, improved stakeholder interactions, and reduced risk premiums (Matos et al., 2020).

Conversely, specific studies demonstrate divergent research outcomes when comparing developed and developing countries. It is argued that the adverse effect of implementing ESG practices on a firm's financial

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performance is rooted in the perceived high costs associated with such practices, particularly for enterprises with limited resources (El Khoury et al., 2023). Thus, despite the assiduous efforts of researchers in this field, no consensus has been reached regarding the impact of ESG on firm performance and value (Gillan et al., 2021).

Various valuation channels are used to examine the effect of ESG on firm valuation such as the Dividends channel (DIV), the Free Cash Flow to Firm channel (FCFF), and the Cost of Equity channel (COE). Until now, prior research has explored the ESG impact by focusing on overall measures of Firm Value (FV) or on each valuation channel separately. However, these studies have overlooked the integration of all three valuation channels to reach a comprehensive conclusion within the same context. In addition, this area of study has been relatively under-researched in the Middle East and North Africa (MENA) region as well as focusing on specific MENA countries. Hence, this paper addresses this gap by comprehensively investigating the influence of firms' ESG ratings on the key determinants of firm value - DIV, FCFF, and COE - in Egypt.

It is essential to underscore that promoting the adoption of proper ESG practices among firms in Egypt will mitigate the environmental impact of business operations, address risk management, meet market expectations, and ensure legal compliance (Lassala et al., 2017). All these endeavors are expected to yield positive effects on Egyptian firms' values, fostering economic growth while simultaneously preserving sustainability. Failure to establish a deliberate perspective on whether ESG factors enhance and boost FV can exacerbate any country's contemporary challenges, as posited by Vanalle et al. (2017). Some of the challenges currently imposed on Egypt are low foreign direct investment (FDI), high debt levels and budget deficit. These challenges are a result of the Covid-19 pandemic, Russian-Ukrainian war, and currency devaluation (Ahmed et al., 2020). In order to face these challenges and achieve Egypt's ambitious 2030 Strategy and in the light of the UN Sustainable Development, the rationale behind ESG adoption for firms in Egypt should be empirically investigated in terms of its expected positive impact on firms' values.

Consequently, this research effort is noteworthy as it is the first study conducted in the context of Egypt and the MENA region to study the effect of ESG ratings on the three main determinants of FV. Thus, this study employs a more comprehensive approach that substantiates the influence of ESG ratings on firms' values, as they demonstrate the effect of ESG ratings on each valuation channel that contributes to changes in firms' values. In addition, this study provides a comparative analysis that explores the variations in the impact of ESG ratings across the three primary valuation determinants. Therefore, the paper has theoretical implications by establishing a foundation for future studies on how sustainability affects each of firms' primary valuation channels within the Egyptian context, thereby providing theoretical implications not only for an emerging country in general but also specifically for the MENA region.

Additionally, the findings of the paper have practical implications for practitioners and policy makers in emerging economies, particularly in Egypt. The findings offer insights into how firms can benefit from initiatives promoting ESG by linking it to better financial performance and high FV. Ultimately, this can lead to improved ESG adoption and sustainability practices in the MENA region.

The remaining of the paper is structured as follows. The following section discusses the context of the study and development of research hypotheses. Then, a discussion of the research design and data is presented. This is followed by a presentation of the empirical results while discussing the research findings. Finally, the conclusion is presented in the last section.

## Literature Review

Corporate sustainability is an essential concept that encompasses numerous dimensions including social, environmental, ethical, cultural, and economic aspects. As a result, its prominence among business leaders, policymakers, media, and academics has grown. Practitioners, investors, and researchers in both developed and developing nations are debating the impact of ESG on firms' financial performance and FV.

On reviewing literature, several studies have investigated the relationship between company sustainability and FV where the vast majority argue that sustainability improves firms' financial performance and, as a result, serves as a driver for value to shareholders (Varvara and Victoria, 2022).

This favorable relationship between corporate sustainability and firms' financial performance can be justified by improved reputations, improved stakeholder interactions and lower risk premiums (Matos et al., 2020). On the contrary, opponents to this positive view argue that ESG application and sustainability programs have not grown in popularity since they are costly, particularly for enterprises with limited resources (El Khoury et al., 2023). Consequently, despite the assiduous efforts of predecessor researchers and till this point in time, no consensus has been reached on the effect of ESG practices on FV measures. This section reviews the relevant literature on the effect of a firm's ESG performance on the three primary FV determinants to highlight the research gap and develop the research hypotheses.

### ***ESG and Dividends***

Surprisingly, the literature has not extensively addressed the impact of sustainability on dividend policy both in developed and developing countries, given how important it is for the choice of whether to pay dividends, pay them regularly, and how much to pay (Matos et al., 2020). Some scholars such as, Arouri and Pijourlet (2017), claim that when firms invest more in CSR and ESG, this reduces cash available for enterprises and so decreases dividend payout. However, Rakotomavo (2012) asserts that ESG efforts enhance dividend payout by assuring its stability rather than having an impact on the cash amount accessible to shareholders. Businesses that employ effective ESG practices continue to issue dividends in an effort to align the interests of shareholders and stakeholders (Zahid et al., 2023). Moreover, as outlined by Godfrey et al. (2009), ESG practices lead to enhanced management efficiency, improved relations with stakeholders, more effective asset allocation with reduced transaction costs, a strengthened competitive advantage, and decreased cash flow shocks in the face of negative events. Thus, firms that focus on ESG practices benefit from better revenues and decreased risk, allowing them to raise dividend payouts (Erdogan et al., 2023).

Most of the studies examining the impact of ESG on FV are conducted in developed markets. For example, using a panel dataset of 1,094 listed firms for the period from 2002 to 2009 from 21 European countries, Erdogan et al. (2023) concludes that enterprises with stronger ESG performance can pay higher dividends. In addition, the analysis of data for listed Western European firms leading the ESG revolution, from 2010 to 2019, reveals a positive association between ESG practices and dividend payments, according to Zahid et al. (2023). Moreover, Matos et al. (2020) examines the impact of ESG on dividend policy on European listed firms on Stoxx Euro 600 from 2000 to 2019. According to the findings, firms with higher ESG scores have more stable dividend policies.

Furthermore, in the context of the Covid-19 pandemic, Kim and Kim (2023) contributed to supporting the positive effect of high ESG scores on dividends, especially during periods of crisis. They highlight that firms with high ESG ratings consistently have higher dividend payout ratios when compared to firms with low ESG scores. As a result, ESG ratings can persuade businesses to maintain dividend policies that are more useful and friendly to shareholders, particularly during crisis. Furthermore, results highlighted that mature, successful, lower-risk and more established companies have higher ESG scores; these are all common characteristics of high and steady dividend-paying companies. Similarly, Shear and Rizwan (2023) also came to the same conclusion during Covid-19 pandemic. Their findings, which were based on information from businesses in 33 nations, show that ESG influences dividend policy positively.

Moreover, Rogers and Casey (2020), through their analysis of data from 40 bank-holding companies in 2018, highlighted that governance pillar of ESG and dividend distribution are positively linked. The authors attributed this to the existence of mechanisms and policies that defend shareholders' interests. Similarly, in Australia, by evaluating data from the top 200 companies listed on the Australian Securities

Exchange based on market capitalization, Limkriangkrai et al. (2017) supported the positive impact of ESG scoring on firms' dividend payout. Empirical research showed that companies with low governance ratings pay less dividends, while high governance rated retain less cash.

Moving to developing countries, Saldi et al. (2023) examined the influence of ESG performance on dividend payout of 17 Indonesian enterprises listed on the Jakarta Stock Exchange for the period from 2011 to 2020. Findings support the positive view of the impact of ESG on dividend payout ratios in developing nations. In addition, Nataprawira and Ulpah (2023) examined the relationship between ESG and dividend policy in Indonesia from 2012 to 2021 using a sample of 532 listed Indonesian firms. Findings reveal a significant positive association between ESG and the firm's dividend policy. Furthermore, consistent with agency and signaling theories, research on the effect of ESG on 30 listed United Arab of Emirates (UAE) firms has been undertaken where results reveal that ESG has a positive influence on dividend policy (Ellili, 2022). Also in Russia, Karginova (2022) came to the conclusion that ESG-rated assets have greater dividend yield as a result of the notable overvaluation of equities with sustainability ratings.

On the contrary, a study conducted in India by Singh (2023) supports the opposing idea that ESG scores have a negative effect on dividend payout. Using a sample of 33 Indian banks from 2010 to 2019, empirical data show that an increase in the ESG score leads the firm's financial performance to drop due to costly investments and efforts, resulting in reduced dividends. Furthermore, Ni and Zhang (2019) studied the effect of ESG on dividend payout in 1,371 Chinese enterprises listed on the Chinese A-share stock market from 2006 to 2011. Results reveal a significant negative relationship between ESG scores and dividend payout. Also in China, Niccolò et al. (2020) argue that ESG investments reduce dividend distribution because ESG prioritises investing in social and environmental practices above delivering financial dividends to shareholders, which has a negative impact on shareholder value.

### ***ESG and Cash Flow to Firm***

It is anticipated that firms exhibiting elevated scores in ESG practices will manifest a positive influence on their cash flows. The rationale behind this relation can be attributed to the resource-based theory which is a framework for determining the strategic resources employed by firms to gain sustainable competitive advantage. Thus, firms with higher sustainability performance will generate higher cash flows and earnings from operating activities, in addition to better insights into future financial prospects and earnings quality through ESG adoption (Jia and Li, 2022). In addition, Mohamad (2020) argues that firms with high ESG scores can adopt greater openness and accountability for ESG policies and disclosures to boost the trust and confidence of stakeholders. Thus, a firm's efficient employment of ESG practices leads to enhancing cash flows and raising the value of the firm.

Therefore, studies conducted in developed markets demonstrate the positive impact of ESG on a firm's cash flow. To illustrate, Varvara and Victoria (2022) stated that higher ESG performance positively influences cash flows and FV for the 500 American and 350 European enterprises in their sample under research from 2010 to 2020. In addition, Seth and Mahenthiran (2022) and Villiers et al. (2020) investigated the relationship between ESG, dividend payout and FV in two different contexts: India and Europe. Seth and Mahenthiran (2022) investigated 115 Indian publicly traded firms from 2009 to 2012; while Villiers et al. (2020) studied 336 of Europe's major corporations from 2007 to 2013. Their findings are remarkably comparable since both indicate that ESG affects firms' FCFF and dividend payout positively. Furthermore, in their paper, Jia and Li (2022) discovered that firms' sustainability level is correlated with greater projected cash flows using data from Australian listed companies from 2002 to 2018. According to their findings, the theoretical claim that ESG performance and cash flows are positively correlated is verified.

Nevertheless, comparing the findings of the empirical studies from the literature examining the impact of ESG on firms' cash flows in developed and developing contexts reveals mixed results. According to Dincă

et al. (2022), ESG has a mixed impact on FV after studying the relationship between ESG score and the FV of 131 listed automotive firms in 24 developing and developed countries from 2015 to 2020 where findings highlight that ESG does not have a consistent influence on FV over time. Similarly, Gregory (2022) using financial and ESG data for 3,950 enterprises from 70 developed and developing nations from 2012 to 2020 reveals that firms' spending on workforce conditions boosts the effect of ESG on FCFF in developed markets. In emerging countries, however, excessive spending on reducing environmental expenses and developing new environmental marketing opportunities decreases the firm's favourable benefits on firms' free cash flows.

On the other hand, other studies state the positive impact of ESG on firms' cash flows in developing markets. Mohamad (2020) supported this view in his study on the impact of ESG scores on FV and cash flows of 70 enterprises from the F4GBM Index in Malaysia from 2009 to 2018, indicating that bringing greater accountability for ESG concerns boosts FV and cash flow. Furthermore, empirical results from investigating the impact of ESG on FCFF in 365 listed companies from BRICS countries (Brazil, Russia, India, China, and South Africa) between 2010 and 2012 highlight that FCFF has a positive correlation with ESG performance, according to Garcia et al. (2017).

Moreover, in the MENA region, Buallay et al. (2020) found a significant positive influence of ESG scores on cash flows and shareholder value in developing nations after completing a study on 59 listed banks from 12 MENA countries from 2008 to 2017. In addition, to our knowledge, no study directly examined the impact of firms' ESG ratings on FCFF in Egypt; nevertheless, a study conducted by Shousha and Rady (2021) on 66 firms from 2010 to 2018 suggests that by promoting social and environmental activities, managers will have an excellent opportunity to maximise firms' appeal to investors. Findings highlight that when a firm engages in ESR (Environmental Social Responsibility) activities, this improves the firm's performance from both profitability and investor perspective (Shousha and Rady, 2021). Thus, in turn, efficient ESG performance is expected to enhance FV and cash flow.

### ***ESG and Cost of Equity***

According to Mio et al. (2023), the use and demand of ESG have significantly increased over the last several years because ESG has important market implications and imposes an impact on a firm's value. However, little is understood about how important ESG elements are to investors' views of risk, and consequently, COE. It is argued that high ESG performance and disclosures reduce information asymmetry which, in turn, lowers the cost of capital for the business, improves the net present value of the firm's investment projects and enhances FV (Garcia et al., 2017).

Nevertheless, efforts of previous researchers on examining the relationship between ESG and COE have resulted in shaping various viewpoints regarding this area of study in both developed and developing countries. For developed countries, results of La Rosa and Bernini (2022) using a sample of 2,599 observations from European listed corporations indicate that poor ESG performance, particularly the environmental pillar, raises COE. Similarly, Gupta (2018) that studied the impact of ESG on implied COE using a large sample of 23,301 firm-year observations from 43 countries argues that improving environmental practices reduces the implied COE. Additionally, Chouaibi et al. (2021) used a sample of 154 French firms for the period from 2015 to 2020. The findings show that ESG activities lower firms' COE; as a result, these initiatives are critical to shareholders' investment and financing decisions. Moreover, using a sample of 273 observations for 60 firms in 12 developed countries from 2017 to 2021, Mio et al. (2023) found empirical evidence that supports the negative relation between ESG and COE.

On the contrary, Suárez and Alonso-Conde (2023) investigated the impact of ESG on COE in the four largest euro-zone economies which are Germany, France, Italy, and Spain from 2016 to 2020 for 487 listed firms. Results demonstrate that ESG policies imply a minor impact on COE which may be the result of changing investor preferences over time, reputational cost, or market mispricing in the long term.



In addition, some researchers supported the negative impact of ESG on COE in emerging markets. A study conducted by Chen et al. (2023) in China on Chinese A-Share firms from 2010 to 2020 concluded that ESG performance can substantially lower COE. This impact can be attained directly and indirectly by lowering the market risk of businesses and boosting their equity diversification. Similarly, in Malaysia, Wong et al. (2021) examined the impact of ESG on COE and FV. Results highlight that ESG decreases COE while dramatically raising firms' values. These results support the benefits of ESG adoption to firms and stakeholders as well.

Moreover, in Korea, Ok and Kim (2019) investigated the impact of ESG on implied COE and highlighted that firms with high ESG performance have cheaper equity financing, which further supports the negative impact of ESG on COE. Additionally, in Latin America, it was also found that ESG has a positive impact in reducing COE due to enhanced ESG transparency that reduces agency conflicts between business management and stakeholders (Garzon and Grima, 2021). Furthermore, Azmi et al. (2021) using a sample of 251 banks from 44 emerging economies from 2011 to 2017 discovered that ESG activity negatively affects COE.

Moving to the context of Egypt, Al-Hiyari and Kolsi (2021) included all publicly traded firms in Egypt in their study sample alongside other 9 MENA countries from 2013 to 2018. Results reveal that ESG transparency enables shareholders to make more effective investment decisions and results in a low cost of capital; thus, there is a positive relationship between the FV of MENA enterprises and their ESG performance.

This section aimed at reviewing the relevant literature on the relationship between ESG and each of the three FV determinants in both developed and developing countries. It could be inferred that, to the researchers' knowledge, there is a gap in this research area in Egypt. No previous studies have tackled the direct impact of ESG ratings on any of the three main FV determinants. Thus, this study aims to address this research gap. Based on the relevant literature, the following hypotheses are developed:

- **H1:** It is expected that there is a positive relationship between ESG rating and dividend payout for firms in Egypt.
- **H2:** It is expected that there is a positive relationship between ESG rating and free cash flow to firm for firms in Egypt.
- **H3:** It is expected that there is a negative relationship between ESG rating and implied cost of equity for firms in Egypt.

## Research Design

### *Data Collection and Sampling*

In a study published by Cornell and Damodaran (2020), it is highlighted that the first issue that arises when investigating the impact of ESG on firm performance is defining what "ESG information" is and how ESG performance is measured. A major challenge facing the firms in Egypt is the absence of general tracking and rating efforts for ESG performance due to disclosure deficiency. Few firms listed on the Egyptian Stock Exchange (EGX) report their detailed annual ESG practices. Therefore, applying the widely used ESG scores is impaired because it limits the sample size and does not reflect the real situation in Egypt. Fortunately, the Egyptian S&P/EGX ESG index provides an annual ranking for the top 30 Egyptian firms in terms of the quality and disclosure of ESG reports. This method, which is based on using ranks as a measure for ESG performance, has been employed by Aboud & Diab (2019) in Egypt. Thomson Reuters, KLD sustainability scores and Bloomberg ESG ratings are three widely utilised proxies for ESG measurement. However, sufficient Egyptian data is not available on these websites, which is a limitation that applies to developing countries. Thus, the proposed ESG ranking measure is used to provide relative rating since it contains the top 30 firms and is revised annually.

As a result, the study sample covers all the firms listed on S&P/EGX ESG index since its inception from 2010 till 2022 on an annual basis. For each year, the list of S&P/EGX ESG index is retrieved where firm rank-

ings are converted to ratings. Ratings range from 30 to 1 where the rating of 30 is given to the best ESG rank and 1 is given to the worst ESG rank and so on for the firms in-between (Aboud & Diab, 2019). Financial data used in this paper for Egyptian companies listed in the S&P/EGX ESG index is extracted from Refinitiv® Eikon database. Exclusions are made based on the availability of financial data for the firms in the sample.

### **Econometric Models and Variable Description**

The aim of this study is fulfilled by testing the relationship between ESG rating (independent variable) on the three dependent variables of: Dividends, Cash Flows, and Implied Cost of Equity of 49 Egyptian firms with available financial data, in the sample-period understudy from 2010 to 2022.

Three panel regression models are conducted using Stata® Statistical Software for each dependent variable (DIV, FCFF, and COE) after testing for normality, heteroskedasticity, multicollinearity and conducting Hausman Test to choose the best static model (fixed or random effect model) for each dependent variable. In addition, dynamic panel data models are employed as well using the Generalized Method of Moments (GMM).

The estimating equations for the three examined models are presented as follow.

$$DP_{it} = \beta_0 + \beta_1 ESGR_{it} + \beta_2 ROA_{it} + \beta_3 MBR_{it} + \beta_4 S_{it} + \beta_5 LEV_{it} + \beta_6 FCFF_{it} + \varepsilon_{it} \quad (1)$$

$$FCFF_{it} = \beta_0 + \beta_1 ESGR_{it} + \beta_2 ROA_{it} + \beta_3 MBR_{it} + \beta_4 S_{it} + \beta_5 LEV_{it} + \beta_6 DP_{it} + \varepsilon_{it} \quad (2)$$

$$COE_{it} = \beta_0 + \beta_1 ESGR_{it} + \beta_2 ROA_{it} + \beta_3 MBR_{it} + \beta_4 S_{it} + \beta_5 LEV_{it} + \beta_6 FCFF_{it} + \varepsilon_{it} \quad (3)$$

Descriptions of all examined variables are presented in Table 1. The selection and measurements of the common control variables examined in each model is selected following previous studies, such as Gregory (2022); Shehata (2022); Chouaibi et al. (2021). FCFF is considered by several recent scholars as a direct indicator of liquidity due to its significant impact on firms' liquidity levels (Nguyen and Nguyen, 2020). Accordingly, it is examined as a control variable in Models 1 and 3, while DP represents a control variable in Model 3, following Gregory (2022). In addition, implied cost of equity is used as a measurement of COE following the work of Chouaibi et al. (2021) which highlighted its robustness, as it is based on prospective data rather than past data; thus, utilising it to estimate shareholder requirements is preferable. Moreover, Ok and Kim (2019) justified the superiority of using implied COE since it is implied in the relationship between current data and analysts' forecasts.

## **Data Analysis and Results**

### **Descriptive Statistics and Correlation Matrix**

Descriptive statistics, represented in the mean and standard deviation values, for the examined variables are reported in Table 2. The high COE mean value is justified and consistent with the nature of developing markets that is riskier than developed nations.

Pearson correlation analyses are conducted, and the correlation matrix is reported in Table 3. This analysis provides initial indication about the relationship between the determinants of FV and firm ESG ranking.

**Table 1: Variables Definitions and Measures**

Variable	Definition	Measurement
DP	Dividend Payout ratio	Total Dividends / Net Income
FCFF	Change in Free Cash Flow to Firm	FCFF= EBIT(1-T) + Depreciation & Amortization – Net Capital Spending – $\Delta$ Net Working Capital
COE	Implied cost of Equity	$R_f + \beta$ (Implied Market Risk Premium)
ESGR	ESG ranking	ESG Index ranking
ROA	Return on Assets	Net Income / Total Assets
MBR	Market-to-book ratio	Market Capitalization / Equity Book Value
S	Firm Size	Log of Total Assets
LEV	Leverage	Interest-bearing Long-term Debt / Total Assets

**Table 2: Descriptive Statistics**

Variable	Mean	Std. Dev.	Min	Max
DP	0.2895	0.3131	0	0.7887
ESGR	15.967	8.8339	1	30
ROA	0.1116	0.3504	-0.5683	4.0339
MBR	0.7959	21.8833	-505.48	13.4
S	15.5349	1.6012	12.1664	20.2702
LEV	0.4759	1.7752	0	19.3755
FCFF	-0.4601	1.0013	-1.8419	0.9294
COE	0.2397	0.0606	0.1611	0.3288

In particular, the Pearson correlation coefficients between DP, COE and ESGR show positive relationships; nevertheless, COE coefficient is insignificant. On the other hand, the Pearson coefficient between FCFF and ESGR shows a negative relationship. In addition, the correlation matrix displays the relationship between each FV determinant and the examined firm level control variables.

The low correlation coefficients can be attributed to the small sample size employed.

**Table 3: Correlation Matrix**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. DP	1							
2. ESGR	0.2044**	1						
3. ROA	-0.0451	-0.0453	1					
4. MBR	0.0122	0.0200	0.0294	1				
5. FCFF	0.0068	-0.1094*	-0.0061	0.0035	1			
6. S	0.1375*	0.1700**	-0.2532*	0.0252	0.0546	1		
7. LEV	-0.0361	-0.0791	-0.0517	-0.0108	-0.0080	-0.1296*	1	
8. COE		0.0418	-0.0096	0.0147	0.0291	-0.0268	0.0041	1

### Regression Results

In Table 4, the random-effects and GMM regression analyses results for Model 1 are presented. The results show that the ESG ranking regression coefficient is positive and significant with Dividends Payout (DP) ratio at 99% significance level. Regarding the control variables, the regression coefficient of firm size is positive and significant at 99% significance level, while FCFF shows significance at 90% significance level. This implies that the higher the ESG Rating for Egyptian firms, the higher the dividends paid out. Thus, these results support the argument that it is not only vital or sufficient for a firm to be listed in the index, but the firm's rank/rating in the

**Table 4 Regression Results**

Variable	Model 1		Model 2		Model 3	
	Dividend payout ratio (DP)	Free Cash Flow to Firm (FCFF)	Implied cost of equity (COE)			
	Static	Dynamic	Static	Dynamic	Static	Dynamic
ESG rating (ESGR)	0.0768***	0.0493***	-0.0808**	-0.1371**	0.0037	-0.0039**
Return on assets (ROA)	-0.6609	0.2479	-4.2815**	-6.435**	-0.0777	-0.0736
Market-to-book ratio (MBR)	0.0612	0.0359	0.2207**	0.1741	0.0107	0.0026
Firm Size (S)	0.3763***	0.8648***	0.1047	-0.6039	-0.0138	-0.0002
Leverage (LEV)	-0.0387	0.1632	0.0418	-0.2006	0.0048	0.0048
Free cash flow to firm (FCFF)	-0.0089	0.0401*			0.0141***	0.0019
DP			-0.0168	0.1293		
Constant	-6.3031***	-13.5616***	-0.6453*	11.7491*	0.4472*	0.8330***
Hausman	Random	GMM	Random	GMM	Fixed	GMM
Adj-Rsquare	0.079		0.0486		0.0654	
No of Obs.	285		285		290	

The table presents results of static and Dynamic regression analyses for Model 1, 2, and 3.

\*\*\*, \*\* and \* denote significance at 1%, 5% and 10% levels, respectively.

In addition, the random-effects and GMM regression analyses results for Model 2 show that ESG ranking regression coefficient is negative and significant with FCFF at 95% significance level. Regarding the control variables, a significant negative relationship is highlighted between ROA and FCFF. Moreover, the random-effects regression results reveal a positive significant impact of MBR on FCFF. Accordingly, these findings imply that the higher the ESG rating for Egyptian firms, the lower the FCFF. This is in-line with the previously mentioned studies which supported the negative viewpoint of this relationship in emerging markets (Gregory, 2022). The rationale behind this empirical finding will be further explained in the findings section. Moreover, Table 4 demonstrates the fixed-effects and GMM regression analyses results for Model 3. The GMM model results show the negative impact of ESG ranking on implied COE at a significance level of 95%. The justification for this finding is further illustrated in the Discussion section.



## Discussion

As previously discussed in the Literature Review section, prior studies have reached mixed results regarding the impact of ESG performance on firm financial position via multiple valuation channels. The current study, which is conducted on S&P EGX/ESG index listed firms in Egypt from 2010 to 2022, has reached vital conclusions regarding the significance and direction of this relationship, using valuation channels of dividends, FCFF, and implied COE to study the impact of ESG. Accordingly, findings of this study could be discussed based on the empirical results of the three regression models which are ESGR–Dividends, ESGR–FCFF and ESGR–COE.

The low adjusted R-squared values in the examined static regression models indicate that ESG, along with the significant explanatory variables, marginally explains variations in each of the FV determinants. The remaining variation might be attributed to other unexamined factors. This study specifically focuses on examining the impact of a firm ESG ranking on FV channels and does not delve into the assessment of the determinants of each of these FV channels.

Moreover, the low R-squared is generally consistent with findings of studies conducted in Egypt and other emerging markets that suffer from low data availability, irrespective of the study's focus, and particularly within the context of ESG, a relatively new practice that has not been fully adopted (Balboula and Elfar, 2023; Tadoori and Vadithala, 2023; Giannopoulos et al. 2022). Furthermore, to omit any possible sensitivity of the findings to static panel data estimations and to capture the dynamic nature of the financial data employed, the dynamic GMM regressions are conducted as well.

First, the result of Model 1 provides evidence to accept hypothesis H1 that there is a positive relationship between ESG rating and dividend payout. Findings argue that ESG rating is positively enhancing the dividend payout to shareholders. These findings are in-line with the previously mentioned studies in the literature (Shear and Rizwan, 2023; Zahid et al., 2023). However, it contradicts the findings of advocates of the negative viewpoint (Ni and Zhang, 2019; Niccolò et al., 2020; Singh, 2023). The rationale that can be used to support this conclusion is that ESG practices urge for the existence of mechanisms and policies that defend shareholders' interests and align the interests of shareholders and other stakeholders. Thus, highly rated ESG firms reward shareholders with high dividends due to reduced risk and increased earnings.

On the other hand, Model 2 provides empirical evidence to reject the direction of hypothesis H2 regarding the relationship between ESG rating and free cash flow to firm. Thus, it supports the significance of ESG rating as a determinant of FCFF; nevertheless, it shows a negative relation between ESG and FCFF. This result is consistent with previous findings conducted in similar emerging markets as presented in the Literature Review section. However, this finding is not in-line with other researchers' findings in developed markets, such as the United States (US) and Europe (Varvara and Victoria, 2022). This can be attributed to the fact that in developing nations, attaining a high ESG ranking entails substantial investments in reducing environmental costs and exploring novel environmental marketing prospects. Consequently, as demonstrated by Gregory (2022), these expenditures adversely impact the free cash flow values of the firms.

This conclusion finds support in the current surge of sustainability, wherein active ESG investing is on the rise in Egypt. Firms with high ESG ratings demonstrate heightened transparency and accountability in their ESG policies and disclosures to foster trust among stakeholders, though at considerable expenditure. Accordingly, this would lead to a reduction in firms' free cash flows. However, this impact is anticipated at this first stage and would shift in the future. Emerging nations would later capitalize on their substantial ESG expenditures like developed markets where engagement in ESG activities enhances firm performance in terms of both profitability and investor perception, consequently bolstering cash flows.

Lastly, empirical results of the GMM analysis for Model 3 accumulated statistical evidence to accept hypothesis H3 for the impact of ESG ranking on implied COE. This implies that, in the Egyptian context,

there is negative significant impact of ESG on implied COE. These findings offer a novel argument from the Egyptian context. The findings are consistent with previous researchers which argued that there is a significant relationship between ESG and COE (Chen et al., 2023; Chouaibi et al., 2021; Garzon and Grima, 2021). The rationale behind such findings could be attributed to the following arguments. Elevated ESG performance and transparent disclosures serve to diminish information asymmetry, leading to a reduction in agency conflicts between business management and stakeholders, consequently lowering the business's cost of capital (Garzon and Grima, 2021; Garcia et al., 2017). Furthermore, a robust ESG performance would significantly decrease COE capital through the mitigation of market risks for businesses and the enhancement of equity diversification strategies (Chen et al., 2023).

On the other hand, the inconsistency in the significant impact of ESG on COE using the fixed-effect regression analysis can be attributed to the fact that in Egypt, there is no specific regulation governing risk disclosure that provides firms with direction on how to disclose various types of risks and associated measurements in annual reports. Consequently, Egyptian firms are hesitant to disclose full risk information in their annual reports due to possible adverse impacts (Ismail and Obiedallah, 2022). Consequently, the low quality of annual risk disclosures in the Egyptian capital market would explain this paper's contradictory finding indicating the insignificant impact of ESG on COE. According to Ismail and Obiedallah (2022), examining the relationship between COE financing in Egypt and other variables in research papers is considered a challenge due to the low quality of firms' risk disclosures, which negatively impacts the measurement of COE.

## Conclusion

In conclusion, the primary aim of this paper is to test the impact of ESG rating on FV through the three valuation channels of dividends, FCFF and COE. The motivation for this study is to encourage firms, especially in emerging markets, to adopt appropriate ESG practices for lower environmental harm, better risk management, meeting market expectations, and legal compliance. These actions are anticipated to have a positive effect by pursuing economic growth while preserving sustainability and contributing to overall global development. Strong empirical evidence is needed, especially in the MENA region, to convince firms not only to adopt ESG, but also to have high ESG ratings. Therefore, the study contributes to this debate by focusing on Egypt, as an emerging economy in the MENA region, using data from all S&P/EGX ESG Egyptian listed firms from 2010 to 2022, to test for this relationship.

Findings from regression analyses conducted for the three models in the Egyptian context reveal the significant impact of ESG ratings on FV determinants. First, a significant positive relationship is highlighted between ESG rating and dividend payout. Second, the study findings reveal a significant negative relationship between ESG rating and FCFF, and COE. Findings of these three models are complementary, based on previous findings in the literature. The rationale behind these findings is in-line with predecessor researchers and has been justified by relying on various viewpoints in the literature.

These research findings have both theoretical and practical implications. Regarding the theoretical implications, the results demonstrate that a firm with a high ESG rating tends to be highly valued. This is evident in its increased likelihood of distributing dividends and lower cost of capital. Nevertheless, it is noteworthy that such firms might experience reduced free cash flows in the initial stages of adopting ESG practices. Consequently, the paper findings provide theoretical evidence on the argument of previous studies regarding the positive impact of ESG on FV in developing countries, with a specific focus on Egypt.

Practically, the findings offer recommendations for practitioners and standard setters in emerging economies, specifically in Egypt, on the advantages of the adoption of S&P/EGX ESG index. In addition, it

provides insights on how firms might benefit from the initiatives to promote ESG by linking ESG to financial performance. As a result, this will lead to an improvement in ESG adoption and sustainability practices.

This research has some limitations, similar to previous studies conducted in emerging economies and in the MENA region. A major limitation is the small sample size, restricting the generalisability of findings. This could be justified by the deficiency in ESG disclosures, and accordingly, ratings for firms in Egypt. The study attempted to reach out to the entire population of firms in Egypt. However, using S&P/EGX ESG as the only available alternative to ESG scores in Egypt, resulted in only 49 firms in the sample understudy. Further research could use firms' audited sustainability reports, as a reliable source for evaluating their ESG performance, to expand the sample in contexts facing the same limitation. Moreover, another limitation is the low quality of firm risk disclosures in Egypt. This amplifies investors' perceptions of uncertainty leading to volatile and heightened COE measures which would negatively influence the research findings.

The findings of this paper pave the way for subsequent research endeavors. Future studies could investigate the financial performance of companies both prior to and following their adoption of ESG practices. Additionally, future studies can re-examine the studied relationship between ESG and FV while examining the mediating and/or moderating effect of some variables, such as firm sustainable growth, technological and sustainable innovation, and environmental and economic regulatory pressures. Furthermore, future research may investigate the impact of ESG using other FV and financial performance measures.

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