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The Effect of Corporate Social Responsibility on Debt Finance: The Moderating Effect of Accounting Conservatism

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Abstract

This study aims to investigate the impact of corporate social responsibility (CSR) practices on the debt finance (DF) of Egyptian firms, as well as examine the moderating role of accounting conservatism (AC) on this relationship. The sample of the study consists of 120 listed Egyptian firms from 2012 to 2019 with overall observations of 960, the data were processed using the panel corrected standards errors (PCSE) and the generalized least squares (GLS). The results reveal that CSR practices have a negative effect on the DF of listed Egyptian firms. Also, the results indicate that the negative effect of CSR practices on DF is more pronounced in firms that have a high conservatism. The results of this study have some essential implications, as CSR practices are crucial for stakeholders such as regulators, investors, and credit providers. Besides, this study contributes to testing some factors that affect the level of DF in emerging countries such as Egypt.

Keywords: corporate social responsibility, debt finance, accounting conservatism, panel data, Egypt.

I. INTRODUCTION

The prior studies that interested in CSR revealed that CSR practices have many advantages to the firms and stakeholders, such as enhancing stakeholder engagement (Benabou & Tirole, 2010; Eccles et al., 2012), decreasing agency costs (Jones, 1995), and increasing firm performance (Jo & Harjoto, 2011; Servaes & Tamayo, 2013; Bose et al., 2017; Lins et al., 2017; and Albitar et al., 2019). Also, CSR disclosure is an important tool for reducing the information asymmetry in the market (Hung et al, 2015; Bose et al., 2017), and signals firms' long-term perspectives (Menz, 2010; Dhaliwal et al., 2011; and Cheng et al., 2014). Additionally, it provides competitive advantages by increasing innovation capacity (Asongu, 2007; Perrine, 2012; Rexhepi et al., 2013; and Martinez-Conesa et al., 2017), attracting higher quality employees (Greening & Turban, 2000; Coldwell et al., 2008; and Jones et al., 2013), and decreases the information risk that the holders of public debt may face, as well as minimizes the public debt issuing costs (Tan et al., 2020).

However, CSR can be criticized when used to improve the firm image to appear socially responsible without effective activities which is known as window dressing. Also, firms avoid disclosing negative information about social and environmental performance and choose to disclose positive information about these dimensions which affect the corporate image positively (Owen et al., 2001; Elijido-Ten et al., 2010; Clarkson et al., 2011; Lyon & Maxwell, 2011; Moser & Martin, 2012; and Cohen & Simnett, 2015).

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According to agency theory, firms that do not apply CSR strategies have less leverage than firms that have, because CSR reports give long-term forecasts to creditors. Also, CSR can enormously diminish the information asymmetry between firms and the providers of credit (Yang et al., 2018). Some earlier studies that examined the relationship between CSR and debt finance (DF) indicated a positive relation, in this regard, Dhaliwal et al. (2014), García-Sánchez and Noguera-Gámez (2017), and Lins et al. (2017) revealed that a good-quality CSR disclosure would improve a firm's access to the sources of DF. However, other studies show that CSR practices increase the debt cost and affect access to the DF negatively (Goss & Roberts, 2011; Chava, 2014; and Magnanelli & Izzo, 2017).

Previous literature indicated that accounting conservatism (AC) has been related to several advantages for the firms, such as reducing information asymmetry (Lara et al., 2011; Francis et al, 2013; Mora & Walker, 2015; and Ruch & Taylor, 2015), enhancing the efficiency of investment (Ahmed & Duellman, 2011; Lara et al., 2016), decreasing the risk of the stock price crash (Kim & Zhang, 2016; Andreou et al., 2017), and diminishing the risk of bankruptcy (Donovan et al, 2015; Balakrishnan et al., 2016; and Biddle et al., 2020). However, recognizing the possible losses earlier and delaying the recognition of possible revenues can allow managers to manipulate earnings and that will increase the information asymmetry (Guay & Verrecchia, 2006; Gigler et al., 2009; and Kothari et al., 2010).

AC may affect CSR positively through the help in providing financial resources to the firms to carry out the activities of CSR, as the AC reduces the possibilities of wealth distributions by either reducing the cash dividends or cancelling them as a result of the decrease in profits that are disclosed (Francis et al., 2013; Pyo and Lee, 2013; and Karsalari et al., 2017). However, some research indicated that AC negatively affects CSR practices (Cho et al., 2020; Anagnostopoulou et al., 2021) as CSR may aggravate the agency problem when it is related to overinvestment to satisfy managers' desire to build reputations and AC is a mechanism that reduces overinvestment (Goss & Roberts, 2011).

Firms with a high level of conservatism are expected to access DF sources in a better way because conservatism allows creditors to oversee managers by stopping them from shifting wealth to stockholders (Ahmed et al., 2002; Beatty et al., 2008; and García-Meca & Sánchez-Ballesta, 2009). In this regard, previous studies showed that AC lowers the cost of debt and increases the DF (Hille, 2011; Kang et al., 2017). Conversely, Gigler et al. (2009) showed that AC decreases the efficiency of debt contracts, and Lee (2012) indicated that firms with greater conservatism in their reports are less flexible regarding the decisions of issuing debts. Based on the past empirical evidence of AC's effect on CSR and DF, it is expected that AC will moderate the effect of CSR on DF

Some Egyptian researchers examined the effect of CSR practices on different aspects such as earnings management (Mohammed, 2012; Ibrahim, 2014; and Sobeih, 2017), earning quality (Radwan, 2015), and financial performance (Omar, 2016; Abo Zeid, 2017). Regarding the relations between CSR, DF, and AC, Abdel-Rehim (2019) examined the direct relation between AC and debt cost, and the indirect relation between AC and debt cost in the presence of CSR, the sample includes 77 Egyptian listed firms from 2012 to 2017, the results showed a negative relation between AC and debt cost, a positive relation between AC and CSR, and a negative relation between CSR and debt cost.

Based on the above discussions, it can be noticed that there is little empirical evidence on the relationship between CSR practices and DF, and it is also clear that there is no evidence about the impact of CSR practices on DF in emerging markets. Furthermore, the studies that examined the relationship between CSR practices and DF did not focus on investigating the moderating effect of the AC. So, the motivation for conducting this research is to obtain empirical evidence from the emerging markets about the impact of CSR practices on DF using a sample of listed Egyptian firms, in addition to testing the effect of the AC on this relationship.

The rest of this paper consists of the following parts: part two shows the framework of CSR in Egypt, part three discusses the literature review and hypotheses development, part four is related to the research methodology, part five shows the results, part six includes the discussions, finally, part seven concludes the paper.

1.1. The Framework of CSR in Egypt

The Egyptian index of environmental, social responsibility and governance (ESG) was issued on 22 March 2010 through collaboration between the Egyptian centre for corporate responsibility (ECCR), the Egyptian Institute of directors (EIOD), the standard & poor's foundation, Chrysel, and the Egyptian stock exchange (ESE). This index is the first in the Arab region and the second in the emerging markets, as the first index was issued in India in January 2008 (EIOD, 2010).

The Egyptian ESG Index measures the performance of firms that score well along with ESG parameters relative to their market peers, to provide investors with objective benchmarks for managing their ESG investment portfolios. The listed firms in the EGX 100 index are evaluated annually to choose the best thirty companies to receive the ranking they deserve in the index (EIOD, 2010; S&P Dow Jones Indices, 2021).

ESG index includes two stages: in the first stage firms are evaluated based on what information they disclose to the public through annual reports, the firm's website, or what information they send to the ESE in the following main sections: shareholder equity and ownership structure, operational and financial information, corporate governance (CG), work ethic and social responsibility, environmental protection, workers' rights, and the customers. The second stage concentrates on assessing the actual practices of the firm by verifying the available news in CSR reports, specialized magazines, and various trusted media, and also by contacting government agencies and non-governmental organizations to find out if there are any violations committed by the firm (EIOD, 2010; S&P Dow Jones Indices, 2021).

The ESG index is composed of 30 stocks from the pool of top 100 Egyptian firms by annual value traded, derived from the below selection process, The firms are subject to an annual screening conducted by EGX (EIOD, 2010; S&P Dow Jones Indices, 2021):

1) Quantitative score - each firm is assigned a quantitative rating in the selection universe based on two parts – transparency and disclosure (T&D) of (a) CG and (b) environmental practices & social governance (E&S).
2) Qualitative sore – CSR filings are used to assess the actual performance of the firm on a scale of 1 to 5, with 5 being the highest and 1 being the lowest, and a final qualitative score is assigned to each firm.
3) Composite score - is calculated by summing the quantitative score and the qualitative score for each firm. Based on this score, the top 100 stocks are chosen as the eligible pool, from which the final top 30 stocks are picked.

II. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1. The Effect of CSR on DF

Earlier studies that investigated the association between CSR and DF revealed mixed results. Some studies showed that CSR affects the firm's access to DF positively (Cheng et al., 2014; Anis & Utama, 2016; Hamrouni et al., 2019; and Tan et al., 2020). However, other studies document a negative effect. (Magnanelli & Izzo, 2017; Michaels & Grüning, 2017).

According to legitimacy theory, CSR practices enhance the social legitimacy of the firm and improve its reputation so it can access DF (Lindblom, 1994; Suchman, 1995, Cho & Patten, 2007; Chen & Roberts, 2010; Kuo & Chen, 2013; Chauvey et al., 2015; Mathuva et al., 2017; and Yang et al., 2018). In this regard, Cheng et al. (2014) examined the association between CSR strategies and DF, the study used a sample that includes firms from 49 countries, and the findings showed that the capital constraints are less for firms that have better CSR performance. Hamrouni et al. (2019) examined how CSR reporting affects leverage ratios, using a sample of 80 French firms from 2010 to 2015, the results indicated a positive relationship between CSR disclosure scores and leverage ratios.

Also, the level of long and short-term debt is increasing with the CSR disclosure. In the same line, Yang et al. (2018) used a sample that included 1,208 Chinese firms to test the relationship between CSR reporting and capital structure, the results showed that CSR disclosures increase long-term leverage. Also, Tan et al. (2020) examined the effect of CSR on firms' choices of public versus private finance, using a sample of 1591 US firms from 2005 to 2013, the results showed that firms with a higher level of CSR disclosure tend to issue bonds at more favourable terms like longer maturity and lower bonds yield spread.

Similarly, some studies found a positive effect of CSR disclosure on DF applying to banks and financial institutions, in this respect, Bae et al. (2018) investigated the impact of CSR activities on loan spreads, the sample contained 5800 banks from 1991 to 2008, the results showed that CSR strengths work to reduce firms risk and hence decrease the loan spread. Goss and Roberts (2011) examined the effect of CSR on bank debt, using a sample consisting of 1,534 US firms from 1991 to 2006, the findings indicated that firms with the lowest CSR scores pay up to 20 basis points more than other firms which are most responsible. Anis and Utama (2016) found that banks gave value to CSR disclosure in their lending decision and CSR disclosure is perceived to give additional information to the bank in assessing borrowers' risk.

Contrastingly, other studies indicated a negative relation between CSR and access to DF. Magnanelli and Izzo (2017) examined the association between corporate social performance and debt cost, using a sample of 332 international firms from 2005 until 2009, the results revealed that CSR performance affects the debt cost positively, this implies that financial institutions avoid applying any risk reduction for CSR activities and also consider them as a waste of resources, which affects the DF negatively. According to Chava (2014), some lenders could avoid lending the firms based on their environmental profile, either to avert the reputation risk and potential lender liability or for social responsibility considerations. Magnanelli and Izzo (2017) suggested that banks consider CSR activities as a costly diversion of firm resources. Menz (2010) examined the relationship between CSR and the corporate bond market, using a sample consisting of 498 bonds, the results showed that CSR does not affect the pricing of corporate bonds.

According to the above discussion, it appears that there is a lack of evidence regarding the effect of CSR practices on DF, especially in emerging markets. So, the first hypothesis will be as follows:

H₁: there is a significant association between CSR practices and DF in Egyptian firms.

2.2. The Effect of AC on the Relationship between CSR and DF

Regarding the effect of AC on CSR, most of the previous studies proved that there is an effect of AC on CSR, but the results of these studies were mixed regarding the type of this effect. AC may negatively affect CSR activities, as CSR may be related to overinvestment to satisfy managers' desire to build reputations without effective activities which is known as window dressing (Goss & Roberts, 2011), and AC is an effective mechanism that reduces overinvestment (Anagnostopoulou et al., 2021). Cho et al. (2020) tested the relation between the degree of conservatism, voluntary CSR, and stock price reaction to such disclosure, the sample included 384 firms from 2007 to 2011, the results showed that CSR disclosures are less for firms that have conservative financial reporting, and the market reaction to firms CSR disclosure is reduced when its financial reporting is more conservative. Anagnostopoulou et al. (2021) investigated the relation between AC and CSR disclosure, the results showed that a higher level of AC is negatively associated with CSR orientation shown by US firms. Also,

Conversely, Francis et al. (2013) and Pyo and Lee (2013) indicated that AC may help in providing financial resources to the firms to carry out the activities of CSR, as AC reduces the management's ability to conduct opportunistic behaviours through which it achieves its interests, and reducing the possibilities of wealth distributions to one of the stakeholders at the expense of other stakeholders. In this regard, Francis et al. (2013) investigated the association between AC and corporate social performance, the sample contained 293 firms from 1998 to 2002, and the results revealed a positive relation between AC and strong social performance. While Kurniawan and Wibowo (2009) analyzed the association between AC and CSR disclosure, the sample included 21 Indonesian banks listed on IDX from 2004 to 2007, the results showed that there is no association between AC and CSR disclosures. Also, Anis and Utama (2016) found that AC has no significant effect on CSR.

Conservatism helps lenders in assessing the credibility of the borrower (Ibrahim et al., 2019) and allows early loss recognition which provides timely information about default risk to lenders, this can help detect covenant violations in a timelier manner and reduce the downside risk. Also, it helps the borrowers by lowering the cost of debt (Ball et al., 2008; Zhang, 2008). Concerning the studies that examined the effect of AC on DF, Kang et al. (2017) examined the relationship between AC and DF access to attain firm growth, the sample consisted of US firms from 1987 to 2008, the results showed a positive relation between AC and future growth funded by debt. On the opposite, Lee (2012) examined whether there is a relationship between financial reporting conservatism and the financial flexibility of firms regarding issuing debts, the sample included 43,598 US firms from 1971 to 2007, the results showed that liquidity management is less flexible in firms with greater reporting conservatism regarding the decisions of issuing debts. The results indicated that firms that report conservatively enjoy lower debt costs, however, they forgo some flexibility in future access to capital. Also, Gigler et al. (2009) examined how AC affects the efficiency of debt contracting. The results showed that AC decreases debt contract efficiency.

Based on the above discussion, it is clear that most studies that examined the effect of AC on CSR and DF were conducted in developed countries, also, prior studies have discussed either the impact of AC on CSR or the association between AC and DF, to the best of our knowledge, there is no study examined the moderating effect of AC on the relationship between CSR practices and DF, especially in the emerging countries such as Egypt. Therefore, the second hypothesis will be as follow:

H₂: AC has a moderating effect on the association between CSR practices and DF in Egyptian firms.

III. RESEARCH METHODOLOGY

3.1. Data Description

The study sample consists of firms listed in the ESE, the data extracted from the annual reports in the Thomson Reuters Eiko Database for 120 firms with total observations of 960 from 2012 till 2019, we excluded financial institutions and banks because they are subject to regulations that differ from other sectors. Table 1 exhibits the description of the sample selection. Finally, the data were processed using panel corrected standards errors (PCSE), and the generalized least squares (GLS) by STATA software.

Table 1
Sample Selection

	No. of Firms	No. of Observations
Initial sample (all firms listed in the ESE)	218	1744
Less: financial firms and banks	45	360
Less: missed data	53	424
Final sample	120	960

3.2. The Research Models and Variables Measurement

CSR practices were measured using two proxies, first, as a dummy variable equals (1) if the firm is listed in the ESG index and (0) otherwise, second, by the ranking weight. DF was measured by the ratio of total debts divided by total assets (Hamrouni et al., 2019). Following (Ahmed & Duellman, 2007; Al-Amri et al., 2015), AC was measured by dividing the net profit before extraordinary items less operating cash flows plus depreciation expense by total assets multiplied by -1. According to the literature review of DF such as (Anis & Utama, 2016; Magnanelli & Izzo, 2017; Hamrouni et al., 2019; and Tan et al., 2020), firm size, sales, audit quality, and Tobin-Q were used as control variables. To test the study hypotheses and achieve its objectives, this study used the following four models:

$$\text{DF}_{it} = \beta_0 + \beta_1 \text{CSR1-0}_{it} + \beta_2 \text{AC}_{it} + \beta_3 \text{TQ}_{it} + \beta_4 \text{SAL}_{it} + \beta_5 \text{SZ}_{it} + \beta_6 \text{AQ}_{it} + \varepsilon_{it} \quad (1)$$

$$\text{DF}_{it} = \beta_0 + \beta_1 \text{CSRW}_{it} + \beta_2 \text{AC}_{it} + \beta_3 \text{TQ}_{it} + \beta_4 \text{SAL}_{it} + \beta_5 \text{SZ}_{it} + \beta_6 \text{AQ}_{it} + \varepsilon_{it} \quad (2)$$

$$\text{DF}_{it} = \beta_0 + \beta_1 \text{CSR1-0}_{it} + \beta_2 \text{AC}_{it} + \beta_3 \text{ACxCSR1-0}_{it} + \beta_4 \text{TQ}_{it} + \beta_5 \text{SAL}_{it} + \beta_6 \text{SZ}_{it} + \beta_7 \text{AQ}_{it} + \varepsilon_{it} \quad (3)$$

$$\text{DF}_{it} = \beta_0 + \beta_1 \text{CSRW}_{it} + \beta_2 \text{AC}_{it} + \beta_3 \text{AC} \times \text{CSRW}_{it} + \beta_4 \text{TQ}_{it} + \beta_5 \text{SAL}_{it} + \beta_6 \text{SZ}_{it} + \beta_7 \text{AQ}_{it} + \varepsilon_{it} \quad (4)$$

Table 2
Variables Measurement

Variables	Proxies		
	Name	**Abbreviation**	**Measure**
Dependent Variable	Debt Finance	DF	The ratio of total debts divided by total assets.
Independent Variable	Corporate Social Responsibility	CSR1-0	Dummy variable equals (1) if the firm is listed in the ESG index and (0) otherwise.
		CSRW	Firms listed in the ESG index would take their ranking weight and (0) otherwise.
Moderating Variable	Accounting Conservatism	AC	Net profit before extraordinary items less operating cash flows plus depreciation expense deflated by assets multiply by -1.
Control Variables	Tobin-Q	TQ	The ratio of the market capitalization plus total debt to total assets.
	Sales	SAL	The log of total sales.
	Size	SZ	The log of total assets.
	Audit quality	AQ	Dummy variable takes (1) if the firm is audited by Big 4 and (0) otherwise.

IV. RESULTS AND DISCUSSIONS

4.1. Descriptive Analysis

Table 3 provides the descriptive statistics of the study variables, it shows that the Egyptian firms included in the sample depend on DF by 15% on average, DF has a maximum value of 55% and a minimum value of 0, and this indicates that some firms do not have debt. The level of AC varies between -.54 % and .83 %. The percentage of firms included in the ESG index is 28.4%, and the maximum weight of CSR obtained by firms in the ESG index is 32%. The percentage of firms audited by BIG 4 is 43%, the results also reveal that TQ, SAL, and SZ have a mean of 1.39, 5.53, and 6.11 respectively.

Table 3
Descriptive Analysis

	Obs.	Minimum	Maximum	Mean	Std. Deviation
DF	960	0	.551	.152	.154
AC	960	-.541	.836	-.139	.118
CSR1-0	960	0	1	.284	.451
CSRW	960	.0	.32	.010	.027
TQ	960	.063	12.704	1.398	1.188
SAL	960	1.255	7.632	5.539	1.047
SZ	960	4.401	7.993	6.114	.769
AQ	960	0	1	.432	.495

4.2. Correlation

The correlation matrix is shown in Table 4 between the dependent variable (DF), and all other variables, the results in Table 4 reveal that DF is correlated negatively with AC and CSR. Also, there is a positive significant relation between AQ, SZ, SAL, and DF, while there is no correlation between TQ and DF. Besides, Table 4 reveals no multicollinearity between the independent variables (VIF < 10).

Table 4
Correlation Matrix

	DF	AC	CSR1-0	CSRW	TQ	SAL	SZ	AQ	VIF
DF	1.000								
AC	-.104***	1.000							1.14
CSR1-0	-.127***	.023	1.000						1.75
CSRW	-.114***	.012	.616***	1.000					1.68
TQ	.106	.053*	.082***	.071**	1.000				1.10
SAL	.331***	-.118***	.113***	-.049	.065*	1.000			2.57
SZ	.221***	-.048	.298***	.152***	.020	.740***	1.000		2.68
AQ	.361***	-.097***	.107***	.018	.073**	.387***	.415***	1.000	1.26

Note: * significant at the 10 % level, ** significant at the 5% level, and *** significant at the 1% level.

4.3. Regression Analysis

The study hypotheses were tested with the panel data methodology, panel data technique has many advantages, specifically lower collinearity between explanatory variables, more control for individual heterogeneity, a larger number of data points, and more degrees of freedom (Baltagi, 2005). Regarding the endogeneity problem, the Durbin–Wu–Hausman (DWH) test was used, the p-value of this test is not significant, hence, the endogeneity problem is not presented in our empirical models. The ordinary least squares (OLS) was used first to test the effect of AC on the relationship between CSR and DF, and also to test the effect of the control variables (SZ, SAL, AQ, and TQ), the Wooldridge test for autocorrelation in panel data indicates a problem of autocorrelation (Prob. > F= 0.0000), also, the results reveal a problem of heteroscedasticity (Prob. > chi2= 0.0000), to solve these problems the study used panel corrected standards errors (PCSE) method and the generalized least squares (GLS) method. PCSE method estimates linear cross-sectional time-series models where the parameters are estimated by either OLS or Prais-Winsten regression, PCSE assumes that the disturbances are by default heteroscedasticity and contemporaneously correlated across the panel. Also, the GLS method enables estimation of the existence of AR (1) autocorrelation with the year and firm correlation and heteroscedasticity across panels, According to the Hausman test to distinguish between fixed effect and random effect, the p-value is less than 0.05 (p < 0.05) in all models, then the fixed effect generalized least squares (FGLS) method was used in all models.

To test the study hypotheses, models 1 and 2 were designed to test the effect of CSR practices (measured by CSR1-0 and CSRW) on DF, in addition to that, models 3 and 4 were designed to examine the effect of AC on the relationship between CSR (CSR1-0 and CSRW) and DF. According to Table 5, models 1 and 2 are significant and the results of PCSE (Prais-Winsten) and FGLS indicate that CSR affects DF negatively. Also, AC affects DF negatively using the FGLS method. Regarding the control variables, the results of the PCSE method indicate a positive effect of AQ and SAL on DF. While the effect of SZ is negative. The summary of Table 5 shows that the R square of models 1 and 2 using the PCSE method are 21 % and 19 % consecutively, this determines that the applied independent variables explain about 21 % and 19 % of the variance of DF in the Egyptian firms.

Table 5
The Effect of CSR on DF (Debts to Assets Ratio)

DF	PCSE				FGLS			
	M 1		M 2		M 1		M 2	
	Coef.	Z	Coef.	Z	Coef.	Z	Coef.	Z
CSR 1 -0	-.059	-5.05***	-	-	-.004	-2.08**	-	-
CSRW	-	-	-.511	-2.87***	-	-	-.001	-0.11
AC	-.0545	-1.26	-.059	-1.38	-.111	-1.66*	-.010	-1.59
TQ	-.000	-0.17	-.001	-0.40	-.000	-0.10	-.000	-0.05
SAL	.039	10.51***	.041	9.27***	-.001	-0.50	-.000	-0.40
SZ	-.010	-2.45**	-.018	-4.92***	.010	2.04*	.009	1.95*
AQ	.091	16.90***	.090	19.31***	.002	0.75	.003	0.79
Constant	-.029	-1.77	.007	0.46	.292	7.51	.294	7.57
Firm effect	-		-		Yes		Yes	
Year effect	-		-		Yes		Yes	
N	959		960		960		960	
R square	0.21		0.19		-		-	
Model sig.	.000		.000		.000		.000	
Hausman test	-		-		.000		.000	

Note: *** significant at 1%, ** significant at 5%; and * significant at 10%.

According to model 3 in Table 6, the results of the PCSE method show that AC increases the negative relationship between the presence of CSR practices and DF. This means that firms that engage in CSR practices do not depend on debt financing especially when those firms are highly conservative. Also, the results of the PCSE method indicate that SAL and AQ have a positive effect on DF. Regarding the size, the result of the PCSE method indicates a negative effect of size on DF. But, this effect is positive using the FGLS method. Also, Table 6 shows that the R square of models 3 and 4 using PCSE are 21 % and 19% respectively.

Table 6
The Effect of AC on the Relationship between CSR and DF (Debts to Assets Ratio)

DF	PCSE				FGLS			
	M 3		M 4		M 3		M 4	
	Coef.	Z	Coef.	Z	Coef.	Z	Coef.	Z
CSR1-0	-.058	-5.03***	-	-	-.005	-2.21**	-	-
CSRW	-	-	-.54	-2.99***	-	-	-.00	-.07
AC	-.034	-0.85	-.038	-1	-.009	-1.32	.008	-1.22
AC*CSR1or0	-.179	-1.82*	-	-	-.12	-.69	-	-
AC*CSRW	-	-	-5.04	-1.55	-	-	-.28	-.55
TQ	-.000	-0.14	-.001	-.38	-.000	-.31	-.000	-.16
SAL	.039	10.20***	.040	8.73***	-.000	-.43	-.000	-.29
SZ	-.010	-2.62***	-.019	-4.66***	.010	1.95 **	.009	1.93 *
AQ	.091	16.70***	.090	21.19***	.003	.76	.003	.86
Constant	-.023	-1.33	.009	.53	.291	7.20	.291	7.33
Firm effect	-		-		Yes		Yes	
Year effect	-		-		Yes		Yes	
N	960		959		960		960	
R square	0.21		0.19		-		-	
Model sig.	.000		.000		.000		.000	
Hausman test	-		-		.000		.000	

Note: *** significant at 1%, ** significant at 5%; and * significant at 10% .

4.4. Robustness Test

This study conducted a further analysis by using the debt-equity ratio as a measure of DF. The previous four models have been applied again in the robustness analysis to confirm the results, models 5 and 6 were designed to test the effect of CSR practices (measured by CSR1-0 and CSRW) on DF (measured by debts-equity ratio), besides, models 7 and 8 were designed to examine the effect of AC on the relationship between CSR and DF.

According to Table 7, the regression results of the robustness analysis confirm the negative relationship between CSR and DF measured by debt-equity ratio using the PCSE and FGLS methods, moreover, using the PCSE method, the results of the robustness analysis support our results regarding the positive effect of SAL and AQ on DF, the results of FGLS method show that the positive effect of TQ and SZ on DF. According to models 5 and 6, the results of the PCSE method show that the independent variables explain about 11 % and 9 % respectively of the variance of DF (debts-equity ratio) in the Egyptian firms.

Table 7
The Effect of CSR on DF (Debts to Equity)

DF	PCSE				FGLS			
	M 5		M 6		M 5		M 6	
	Coef.	Z	Coef.	Z	Coef.	Z	Coef.	Z
CSR 1 -0	-.113	-4.82***	-	-	-.013	-2.29**	-	-
CSRW	-	-	-1.17	-2.99***	-	-	-.017	-.64
AC	-.063	-0.75	-.074	-0.87	-.014	-0.83	-.014	-.85
TQ	-.007	-1.26	-.009	-1.42	.006	2.41**	.006	2.30**
SAL	.030	2.44**	.030	2.42**	-.009	-1.64	-.010	-1.63
SZ	-.051	-3.40***	-.066	-5.01***	.041	2.83***	.036	2.51**
AQ	.166	9.89***	.164	10.18***	-.000	-0.04	.001	.12
Constant	.409	11.86	.473	14.83	.241	3.27	.242	2.63
Firm effect	-		-		Yes		Yes	
Year effect	-		-		Yes		Yes	
N	959		960		960		960	
R square	.11		.09		-		-	
Model sig.	.000		.000		.000		.000	
Hausman test	-		-		.000		.000	

Note: *** significant at 1%, ** significant at 5%; and * significant at 10%.

According to the FGLS method, the results of the robustness analysis in Table 8 show negative signs for the effect of AC on the relationship between CSR and DF. The results of the PCSE method remained unchanged regarding some control variables such as SAL, SZ and AQ. Table 8 shows that the R square of the models 7 and 8 using the PCSE method is 11 % and 9 % respectively. Overall, the regression results of the robustness analysis using the PCSE and GLS methods display the same sign and statistical significance as our presented results regarding the negative relationship between CSR practices on DF.

Insert Table 8 here.

4.5. Discussion

This study aims to investigate the impact of CSR practices on the DF of Egyptian firms. Also, tests the moderating role of AC on this relation, concerning the effect of CSR on DF, the findings of the previous studies differed about the effect of

CSR on DF (Chava, 2014; Dhaliwal et al., 2014; García-Sánchez & Noguera-Gámez, 2017; Lins et al., 2017; Magnanelli & Izzo, 2017), the results of the current study reveal that CSR practices have a negative effect on DF of the Egyptian firms at a significant level of 1% using PCSE and GLS, this result is consistent with (Chava, 2014; Magnanelli & Izzo, 2017; and Michaels & Grüning, 2017) and may be due to one of the following reasons:

1) CSR activities may limit the firm ability to borrow, as lenders may do not value the CSR practices and may consider CSR activities as a waste of resources, so they may avoid lending to the firms based on their environmental profile, either to avoid reputation risk and the potential lender liability or for social responsibility considerations. Also, credit providers may see CSR activities as a way used by managers to improve the firm image to appear socially responsible without effective activities and it negatively affects the firm's ability to obtain debt financing.

2) Firms that engage in CSR activities may have less need to borrow and they find it easier to raise finance from equity, as CSR activities may positively affect the firm reputation by enhancing stakeholder engagement, decreasing agency costs, increasing firm, reducing the information asymmetry.

Table 8
The Effect of AC on the Relationship between CSR and DF (Debts to Equity)

	PCSE				FGLS			
DF	**M 7**		**M 8**		**M 7**		**M 8**	
	Coef.	Z	Coef.	Z	Coef.	Z	Coef.	Z
CSR1-0	-.113	-4.86***	-	-	-.013	-2.37**	-	-
CSRW	-	-	-1.21	-3.05***	-	-	-.018	-.65
AC	-.040	-.45	-.052	-.59	-.005	-.33	-.004	-.25
AC*CSR1-0	-.205	-1.28	-	-	-.065	-1.86*	-	-
AC*CSRW	-	-	-5.28	1.22	-	-	-2.15	-1.88*
TQ	-.007	-1.25	-.008	-1.40	.0064	2.31**	.006	2.26**
SAL	.030	2.44**	.030	2.43**	-.011	-1.85*	-.010	-1.69*
SZ	-.052	-3.42***	-.066	-4.97***	-.041	-2.86***	.036	2.54**
AQ	.166	9.91***	.164	10.25***	-.001	-.13	.002	.31
Constant	.415	11.33	.475	14.53	.241	3.30	.244	2.65
Firm effect	-		-		Yes		Yes	
Year effect	-		-		Yes		Yes	
N	959		960		960		960	
R square	0.11		0.09		-		-	
Model sig	.000		.000		.000		.000	
Hausman test	-		-		.000		.000	

Note: *** significant at 1%, ** significant at 5%; and * significant at 10%.

Regarding the moderating impact of Ac on the association between CSR practices and DF of the Egyptian firms, The PCSE regression indicates a negative effect of AC on the relationship between the existence of CSR practices and DF at a significant level of 10%, which means that the negative effect of CSR activities on DF is more pronounced when those firms are highly conservative. This result can be explained that firms with greater reporting conservatism show less flexibility regarding DF (Gigler, 2009; Lee, 2012), also AC may increase the CSR practices (which negatively affect the DF) by providing financial resources to the firms to carry out the activities of CSR, as well, reducing the possibilities of wealth distributions to one of

the stakeholders at the expense of other stakeholders (Francis et al., 2013; Pyo & Lee, 2013).

Respecting the control variables, the results indicate a positive impact of AQ, TQ, and SAL on DF, this means the firms with higher Tobin's-Q, sales and audited by one of the big 4 have better access to DF, while the effect of size on DF is negative.

V. CONCLUSION AND LIMITATIONS

This study aims to introduce empirical evidence regarding the effect of CSR practices on DF of the Egyptian firms, and also examine the moderating effect of AC as a determinant of this relation, the study was conducted using a sample consisting of 120 Egyptian firms listed in the ESE with total observations of 960 from 2012 till 2019, the results indicated a negative effect of CSR practices on DF. Also, the results showed that the negative effect of the existence of CSR practices on DF is more pronounced in firms that have high conservatism.

This study adds to the literature by providing empirical evidence from Egypt about the impact of CSR practices on DF and testing the effect of AC as one of the determinants of this relation, it also provides insights to regulators, investors, and creditors to clearly understand the implications of CSR practices in one of the emerging markets such as Egypt. Also, this study contributes to testing some factors that affect firms' reliance to obtain debt financing in emerging countries. Finally, this study is the first to investigate the impact of CSR practices on DF and test the moderating role of AC in emerging countries such as Egypt.

The limitations of this study are not investigating the effect of each dimension of CSR (such as social, environmental, and governance), or the quality of CSR disclosure on DF due to the lack of data. Also, this study cannot rule out varied sources of endogeneity such as the possibility of omitted correlated variables and reverse causality. Future studies can test the effect of CSR components or the quality of CSR disclosure on DF, and investigate other determinants of the relationship between CSR practices and DF such as corporate governance mechanisms. Also, future research may provide empirical evidence about mediating effect of the cost of debt and financial constraints on the relationship between CSR activities and ownership structure.

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