

Wahba, Hayam; Elsayed, Khaled

## Article

# The mediating effect of financial performance on the relationship between social responsibility and ownership structure

Future Business Journal

## Provided in Cooperation with:

Faculty of Commerce and Business Administration, Future University

*Suggested Citation:* Wahba, Hayam; Elsayed, Khaled (2015) : The mediating effect of financial performance on the relationship between social responsibility and ownership structure, Future Business Journal, ISSN 2314-7210, Elsevier, Amsterdam, Vol. 1, Iss. 1/2, pp. 1-12, <https://doi.org/10.1016/j.fbj.2015.02.001>

This Version is available at:

<https://hdl.handle.net/10419/187929>

### Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

### Terms of use:

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*



<https://creativecommons.org/licenses/by-nc-nd/4.0/>

# The mediating effect of financial performance on the relationship between social responsibility and ownership structure

Hayam Wahba<sup>a,\*</sup>, Khaled Elsayed<sup>b</sup>

<sup>a</sup>*Business Administration Department, Faculty of Commerce, Ain Shams University, Main Campus (Western Division), Abbassia 11566, Cairo, Egypt*

<sup>b</sup>*Business Administration Department, Faculty of Commerce, Ain Shams University, Egypt*

Received 22 September 2014; received in revised form 27 November 2014; accepted 19 February 2015

Available online 11 March 2015

---

## Abstract

Existing literature is inconclusive about the relationship between social responsibility and institutional investors as it assumes, implicitly, that this relationship is direct. An alternative perspective, that has received less attention in the literature, is that this relationship can be mediated by other contextual variables such as financial performance. Thus, this study is aiming to provide some empirical evidence on this issue that may help in explaining divergence in prior work. Panel data regression was performed on a sample that includes all firms that are listed in the Egyptian social responsibility index during the period from 2007 to 2010. The results demonstrate that better (or worse) financial performance, and rather social responsibility, is the lead for institutional investors when they make their investment decisions.

© 2015 Faculty of Commerce and Business Administration, Future University. Production and Hosting by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

*Keywords:* Corporate social responsibility; Egypt; Financial performance; Institutional investors; Panel data

---

## 1. Introduction

The possibility that firms can develop a competitive edge over rivals by investing in social responsibility has been made increasingly likely over recent years by changes in investors' behavior and attitudes towards the society (Graves & Waddock, 1994; Saleh, Zulkifli, & Muhamad, 2010; Wahba, 2008b; Wahba & Elsayed, 2014a). As such, the concept of corporate social responsibility (CSR) is ever more on the agenda of business organizations. Despite literature suggests different definitions of CSR, generally, it refers to “the firm's consideration of and response to issues beyond the narrow economic, technical and legal requirements of the firm to accomplish social benefits along with the traditional economic gains which the firm seeks” (Davis, 1973, p. 313).

Change in corporate ownership structure with an increase in the stakes of institutional investors such as banks, mutual funds, insurance companies and pension funds (Sundaramurthy, Rhoades, & Rechner, 2005) has motivated

---

\*Corresponding author.

E-mail addresses: [Hayam.Wahba@commerce.asu.edu.eg](mailto:Hayam.Wahba@commerce.asu.edu.eg) (H. Wahba), [Khaled.Elsayed@commerce.asu.edu.eg](mailto:Khaled.Elsayed@commerce.asu.edu.eg) (K. Elsayed).

Peer review under responsibility of Faculty of Commerce and Business Administration, Future University

many scholars to investigate the relationship between social responsibility and institutional investors. In this context, prior work has presented two contested perspectives. The first perspective argues for a positive relationship between social responsibility and institutional investors. The underlying premise of this argument is that since institutional investors are risk-averse (Mahoney & Roberts, 2007), and firm's reputation in social and environmental responsibility reduces stocks' volatilities (Petersen & Vredenburg, 2009), firms that invest in social programs and initiatives will be able to attract more institutional investors (Graves & Waddock, 1994). The other perspective argues for a negative relationship between social responsibility and institutional investors on the basis that social responsibility orientation does not match with institutional investors' investment horizon. In other words, because investing in social responsibility programs and initiatives is likely to lead to considerable costs in the short term (Hart & Ahuja, 1996) and the market often responds to social responsibility initiatives in the long-term (Shank, Manullang, & Hill, 2005), institutional investors are less likely to prefer socially responsible firms. This is because short-term performance cycles discourage them from supporting long-term projects as institutional investors mainly prefer near-term earnings (Bushee, 2001; Koh, 2003). In a similar vein, empirical studies that have examined the relationship between social responsibility and institutional investors offer inconclusive evidence (Coffey & Fryxell, 1991; Cox, Brammer, & Millington, 2004; Graves & Waddock, 1994; Mahoney & Roberts, 2007; Saleh et al., 2010; Wahba, 2008b, 2010).

Indeed, existing literature can be challenged due to its implied and simplest conjecture that the relationship between social responsibility and institutional investors is a direct relationship. Opposing and mixed findings in prior studies may be traced back to the fact that this relationship is not a direct relationship. Rather, this relationship can be mediated by other contextual variables such as financial performance, a point that has received less attention in literature. Specifically, the main argument in this paper is that better (or worse) financial performance, and rather social responsibility, may, in turn, be the guide for institutional investors when they make their investment decisions. This is because, "while the emergence of social criteria may influence institutional investment activity, these criteria probably remain subordinate to economic criteria" (Coffey & Fryxell, 1991, p. 439). For instance, although many investors value social responsibility, financial performance is still their main concern (Matterson, 2000). Moreover, not only financial returns are important for ethical investors (Sparkes, 1998), but also institutional investors do not consider social responsibility data unless they are presented in a "financial form" (Teoh & Shiu, 1990).

Thus, this study is designed to add to corporate finance as well as social responsibility literature in two ways. It seeks to explain the divergence in existing literature by examining the mediating effect of financial performance on the relationship between social responsibility and institutional investors. Moreover, it adds to our understanding by conducting research on a sample of firms from Egypt as a developing country, where much of the existing evidence reflects the context of developed countries. Presenting evidence from other less developed countries assists in developing existing theories of corporate finance as well as corporate social responsibility, as it may not be applicable to generalize conclusions from prior studies on other organizations that work in different cultures (Elsayed & Wahba, 2013).

The rest of this paper is structured as follows. The second section is devoted to presenting existing theoretical and empirical evidence regarding the relationship between social responsibility and institutional investors. Hypothesis development is introduced in the third section. Sample and variables measurement is presented in the fourth section. Econometric analysis is found in the fifth section. The final section is designated to introduce conclusion and implications of the main findings.

## 2. Social responsibility and institutional investors

Undoubtedly, the past few decades have witnessed a noticeable change in corporate ownership structure with an increase in the stakes of institutional investors such as banks, mutual funds, insurance companies and pension funds (Sundaramurthy et al., 2005). Institutional investors, according to the risk aversion theory, are rational investors who search for efficient investment by taking into account risk and return that associated with any proposed investment. Thus, they may consider corporate social initiatives and programs as a means to reduce potential risk (Wahba, 2008b). This is likely to occur as reputation in social and environmental activities may lower stock volatilities (Petersen & Vredenburg, 2009). Therefore, the net impact of social responsibility on institutional ownership, according to this perspective, is expected to be positive. In other words, firms that invest more in building its social reputation will be able to attract more institutional investors (Wahba, 2010; Wahba & Elsayed, 2014a). Conversely, institutional investors, according to the theory of myopic institutions (Hansen & Hill, 1991), are considered as

shortsighted investors who concern only with short-term return, as managers of these institutions are evaluated and compensated on their short-term results (Cox et al., 2004; Graves & Waddock, 1994; Michelson, Wailes, Laan, & Forst, 2004). Since, investment in social programs and activities is a long-term decision that needs time to gain cost savings (Mahoney & Thorne, 2005), organizations that invest in social responsibility will not be able to attract more institutional investors. Accordingly, this assertion implies that corporate social responsibility affects institutional investors negatively (Wahba, 2010).

Empirical studies that examined the relationship between corporate social responsibility and institutional investors also present opposing findings. For instance, Teoh and Shiu (1990) showed that available data on corporate social responsibility in company reports have no impact on decisions of institutional investors. Coffey and Fryxell (1991) did not find a clear pattern regarding this relationship. Graves and Waddock (1994) and Cox et al. (2004) pointed out that institutional investors invest in socially responsible firms. Mahoney and Roberts (2007) as well as Saleh et al. (2010) found that firms are able to attract and maintain their institutional investors while they engage in social initiatives and programs.

In the Egyptian context, existing evidence regarding the relationship between social responsibility and ownership structure is limited. For instance, El-Zayat, Ibraheem, and Kandil (2006) pointed out that although Egyptian firms have a positive attitude toward environmental issues, existing practices are less effective and compliance with environmental regulations is minimal. They traced this finding back to the “soft” introduction of environmental regulations from the government side and the “soft” implementation of environmental mandates from the side of business organizations. Moreover, in surveying environmentally reporting practices using 60 annual reports in nine industrial sectors, Rizk, Dixon, and Woodhead (2008) documented some differences in social and environmental disclosure among Egyptian firms and the importance of ownership structure in reporting decision.

Wahba (2008b) found that firm's environmental policy has exerted a positive and significant coefficient on institutional ownership. However, when an interaction term between environmental policy and financial performance is included, the results verified that environmental policy has a neutral impact on the preferences of institutional investors. Moreover, by classifying firms into two subgroups, according to their financial performance, environmental policy was found to have a positive and significant impact on institutional ownership only when financial performance is high. In addition, the findings of Wahba (2010) revealed that Egyptian institutional investors are more likely to use environmental policy to offset their inability to confront managerial discretionary power. The study concludes that not only different types of stakeholders will ask for different levels of environmental orientation, but also the same type of stakeholder may ask for different levels of environmental orientation in different contexts.

### 3. Hypothesis development

The key argument in this paper is that corporate social responsibility is expected to affect financial performance positively (negatively), which, in turn, attracts (repels) institutional investors. The positive effect of social responsibility, in fact, on financial performance is based on two premises. First, there is a trade-off relationship between the firm's explicit costs (e.g., payments to bondholders) and the firm's implicit costs to other stakeholders (e.g., pollution control cost) (Wood, 1991; Wood & Jones, 1995). Thus, if the firm decides to lower its implicit cost by behaving in a socially irresponsible way, it will incur higher explicit costs, which will result in a competitive disadvantage (Waddock & Graves, 1997). As a result, the expected payoff of corporate social responsibility may outweigh the initial cost.

Second, firms, according to the raising rivals' costs theory, have different strategies to increase the cost of their competitors. One of these strategies is to use differentiation to create unique reputation that cannot be easily imitated (McWilliams, Van Fleet, & Cory, 2002). Put simply, corporate social responsibility creates some organizational capabilities that enable firms to achieve competitive advantages, such as being the first mover in the industry (Preston and O'Bannon, 1997; Russo & Fouts, 1997; Waddock & Graves, 1997). Thus, by investing in superior social responsibility, a firm builds up a stock of reputational capital, and hence boosts its financial performance.

On the other hand, the premise of the negative effect of social responsibility on financial performance is that the expected cost of social responsibility is likely to outweigh the resulting benefits (Friedman, 1970). Put simply, firms that invest in social activities and programs will incur costs that can be easily avoided and hence they will incur competitive disadvantage. For instance, those firms that spend money on some pollution control instruments will

incur costs that may affect their price and thus profitability, whilst other competitors did not do that on the basis that it is the government's responsibility (Aupperle, Carroll, & Hatfield, 1985).

Better (or worse) financial performance, and rather social responsibility, may, in turn, be the reference guide for institutional investors when they make their investment decision. We draw this proposition from existing evidence in literature that verifies, first, that managers of these institutions are evaluated and compensated for their short-term results (Cox et al., 2004; Graves & Waddock, 1994), whereas investing in social responsibility programs and initiatives is likely to lead to considerable costs in the short term (Hart & Ahuja, 1996), and the market often values social responsibility characteristics in the long-term (Shank et al., 2005). Second, a very few institutional investors take social and environmental information into account when making their investment decisions (Hummels & Timmer, 2004). For instance, Matterson (2000) revealed that although many investors have valued social and environmental responsibility, financial performance was still their main concern. A finding that is consistent with not only the work of Sparkes (1998) who pointed out that financial returns are important for ethical investors, but also the conclusion of Teoh and Shiu (1990) who revealed that available data on social responsibility in company reports have no impact on decisions of institutional investors unless they are presented in a “financial form”.

Third, institutional investors may own stocks of firms not only because of their social and environmental reputation, but also for their financial performance (Johnson & Greening, 1999). This is because “socially responsible investors are clearly not interested in considering unprofitable investment options or paying a significant penalty for ethical choices, since financial return remains an important consideration” (Michelson et al., 2004, p. 5). Put in another way, “while the emergence of social criteria may influence institutional investment activity, these criteria probably remain subordinate to economic criteria” (Coffey & Fryxell, 1991, p. 439). For instance, in studying the effect of social responsibility on institutional shareholdings, Cox et al. (2004) reported a positive and significant impact of corporate financial performance on institutional ownership and concluded that “financial performance attributes also play an important role in influencing institutional investors” (p. 38).

In short, the above discussion indicates that social responsibility is expected to enhance (detract from) firm financial performance, which, in turn, is likely to affect positively (negatively) institutional ownership. In fact, identifying the positive or negative effect is a matter of empirical analysis. This argument is presented in Fig. 1: the effect of corporate social responsibility on institutional investors (relation (c)) through a role of financial performance “mediation” (relation (a × b)). We aim to test empirically our argument through the following hypothesis:

**H1.** It is expected that the relationship between social responsibility and institutional investors will be mediated by financial performance.

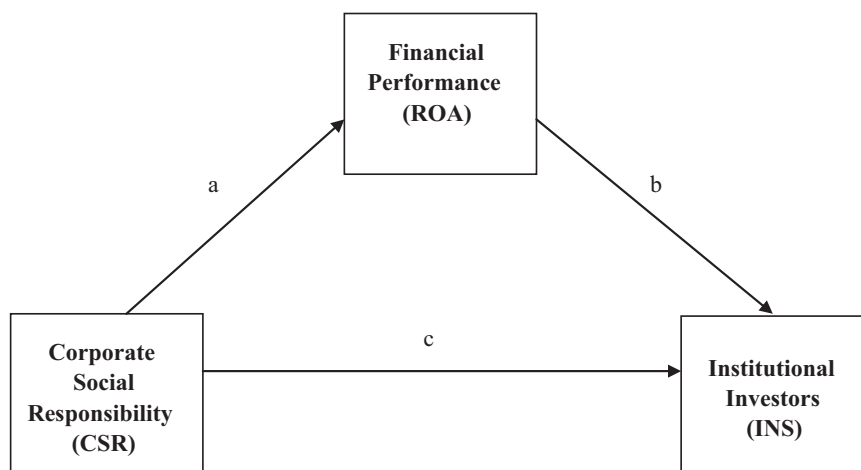


Fig. 1. The relationship between corporate social responsibility, financial performance and institutional investors.

#### 4. Sample and variables measurement

The sample of this study includes Egyptian firms that are listed in the S&P/EGX Index for corporate social responsibility (ESG Egypt), which is prepared and published by the Egyptian Corporate Responsibility Center (ECRC). The Egyptian government represented by the Ministry of Investment, took the lead in developing the ESG index in Egypt to encourage companies to be more transparent and to disclose their governance, social and environmental practices more clearly to increase their competitive advantage. The index is being developed by a consortium of Standard & Poor's, CRISIL and KLD. Standard & Poor's assisted the Egyptian Institute of Directors (EIOD) in partnership with the Egyptian Stock Exchange to develop, calculate, publish and maintain an index comprised of a capitalization weighted list of socially responsible companies which are publicly listed for trading on the exchange. The index is based on quantitative factors as well as qualitative ones. Through the process, environmental, social and corporate governance factors will be translated into a series of scores measuring securities in the universe of publicly traded Egyptian companies (ECRC, 2012).

The S&P-EGX/ESG index determines annually the ranking of 30 best Egyptian firms, according to their social programs, initiatives and activities. The sample covers all the firms that are included in the index from 2007 to 2010, as the index was first published in 2007. In fact, data after 2010 have not been included because of the occurrence of the Egyptian revolution in January 2011, which, in turn, may lead to different conclusions.

The total number of firms in the sample is 38 with 149 observations during the period 2007–2010 and covers 12 different industrial sectors. Table 1 presents the distribution of firms according to their industrial sectors.

It may be argued that a sample size of 38 firms may limit the representativeness of the sample and generalizability of the findings. Consequently, different tests were conducted to evaluate the internal and external validity of the sample. First, the sample represents 14.15% of the total listed firms in 2010 (the total number of listed firms in the EGX is 212 firms in 2010). Thus, the proportion of the sample size to the overall population is comparable to previous research in the Egyptian context (see, for example, Wahba, 2008a, 2014). Second, to test for whether the sample of the current study represents all listed firms in the EGX, the average of the total market capitalization during 2008–2010 for all companies listed in the EGX, as well as for those firms constituting the sample, is computed. The average for all listed firms was LE 487.13 billion and reached LE 204 billion for the sample. Given that the sample accounted for 41.8% of the total market capitalization of the entire market during 2008–2010, it can be argued that the sample does represent the population (i.e., all firms listed in the Egyptian Exchange). This is also comparable with prior work such as Abdel Shahid (2003) who used a sample that consists of the 90 most active firms in the Egyptian context. Abdel Shahid revealed that the sample represents 44% of the total market capitalization and is accounted for 87% of the total deals.

Third, analysis of variance (ANOVA) test as well as Kruskal–Wallis test was conducted to determine if there is a significant amount of variation among the industrial sectors. According to the results that are reported in Table 2,

Table 1  
Distribution of the sample according to industrial sectors.

Sector	Firms (2007–2010)	
	N	%
Construction & Materials	1	3
Telecommunications, Technology	4	11
Personal and household	3	8
Financial services (except Banks)	6	16
Chemicals	2	5
Banks	4	11
Industrial goods, services and Automobiles	5	13
Oil and gas	1	3
Real State	7	18
Basic Resources	3	8
Travel and Leisure	1	3
Food and Drinks	1	3
	38	100

Table 2  
ANOVA and Kruskal–Wallis of variables across the industrial sectors.

	ANOVA ( <i>F</i> )	Kruskal–Wallis ( $\chi^2$ )
CSR	3.50***	31.29***
INS (%)	9.23***	52.79***
ROA (%)	8.66***	54.79***
SIZ	9.84***	60.12***
AGE	6.73***	53.05***
LEV (%)	3.81***	55.23***
DIV	2.92**	12.46
LIQ (%)	2.39*	43.81***
CAP (%)	1.50	77.11***

\* $p < 0.05$ .

\*\* $p < 0.01$ .

\*\*\* $p < 0.001$ .

The *F*-statistic as well as the  $\chi^2$ -statistic is significant in all cases. For instance, social responsibility, institutional investors and return on assets have *F*-statistics ( $\chi^2$ -statistics) of 3.50 (31.34), 9.23 (52.79), and 8.66 (54.79), respectively at 1% significance level. Fourth, the key variables in the sample were compared with variables' means that are reported in prior work to check for external validity. For instance, the *T*-statistic for the difference between institutional ownership in this study and what is reported in Elsayed and Wahba (2013) is  $-0.0907$  ( $p=0.3661$ ). These findings give supportive evidence for applicability of the current sample.

The main dependent variable is institutional ownership (INS) that is measured by the fraction of common shares owned by institutional investors (Cox et al., 2004; Graves & Waddock, 1994; Johnson & Greening, 1999). The main independent variable is corporate social responsibility (CSR), which, as explained above, is expressed by the ranking of Egyptian firms in the S&P/EGX Index for corporate social responsibility (ESG Egypt). The S&P/EGX index assigns ranks from (1) to (30), as lower value means a better social responsibility. For ease of presentation and explanation, annual ranks are reversed so that higher values mean better rather than worse. The proposed mediating variable is financial performance. Although there is a wide literature on the appropriate measurement of performance, and this literature has led to little consensus on the best approach to take, financial performance, in this study, is expressed by return on assets as it reflects the operating results rather than decisions of capital structure (Schmalensee, 1989). Return on assets (ROA) is calculated by dividing firm profits before taxes by its total assets (Cox et al., 2004; Wahba & Elsayed, 2014b).

The study controls several variables that might confound the relationship between social responsibility, financial performance, and institutional investors. Following previous work (Cox et al., 2004; Elsayed, 2006; Graves & Waddock, 1994; Johnson & Greening, 1999; Wahba, 2010), control variables include firm size, firm age, financial leverage, dividend per share, liquidity, capital intensity, and industry heterogeneity.

Firm size (SIZ) is a relevant variable that could confound the relationship between social responsibility and institutional investors for several alternative arguments. First, large firms are likely to have more resources and that enhances a firm's ability to possess and process social information, which in turn gives the firm more competitive advantages (Russo & Fouts, 1997). Second, firm size may reflect the legitimacy principle, or to what extent the firm is visible to the public and this is because a large firm is either seen as industry leader (Henriques & Sadosky, 1996), or is likely to have more environmental risk (Cohen, Fenn, & Konar, 1995). Third, it is argued also that firm size could moderate the relationship between social strategy and stakeholder orientation (Buysse & Verbeke, 2003). Finally, firm size has been related to the existence of scale economies inherent in social oriented investments (Chapple, Morrison, & Harris, 2005; Elsayed & Paton, 2005). Firm size is represented by the firm total assets (Wahba, 2015). The natural logarithm is employed to transform firm size, as the Shapiro–Wilk *W* test for normality is significant ( $W=0.681$ ,  $p < 0.001$ ).

Firm age (AGE) is also controlled for as management problems and principles are rooted in time (Greiner, 1972). Further, controlling for firm age is becoming important on the base that the more developed the firm, the greater is the likelihood that problems associated with path dependency will hinder strategic change in the firm (Henderson and

Clark, 1990). It is represented by the time period from the incorporation date and the year of analysis (Elsayed and Wahba, 2013).

Financial leverage (RSK) is employed in the literature (e.g., Waddock & Grave, 1997) as a proxy for the risk. It is used to reflect management's risk tolerance that influences its attitude towards social activities and measured by the ratio of total debt to total assets. Dividend per share (DIV) is included to reflect available investment opportunities (Wahba, 2010), and measured by the total dividend paid to ordinary shares divided by number of ordinary shares. Liquidity (LIQ) is added to control for managerial discretion regarding social initiatives and programs (Elsayed & Paton, 2009), and proxied by the ratio of current assets to current liabilities. Capital intensity (CAP) is also included as a control variable for the expected relationship between capital intensity and social investment decision (Rust & Rothwell, 1995). Capital intensity is measured by the ratio between payments in fixed assets and the firm's total assets. Controlling for industry effects (SIC) is also important as product differentiation may depend on the industry to which the firm belongs (McWilliams & Siegel, 2001). Consequently, the study supplements the models by experimenting with the inclusion of dummy variables for each two-digit standard industrial classification (SIC) code. Variables descriptive statistics are presented in Table 3.

## 5. Econometric analysis

To examine whether financial performance mediates the relationship between social responsibility and institutional investors, we used Baron and Kenny's (1986) regression approach, while taking into our consideration the recent critique and modifications suggested by Zhao, Lynch, and Chen (2010). According to Baron and Kenny (1986), testing for mediation effect can be done in three steps: first, regressing the mediator on the independent variables. Second, regressing the dependent variable on the independent variables. Third, regressing the dependent variable on both the independent variables and mediator. They pointed out that the independent variable in the first two models is expected to show a statistical significance, while the third model is expected to show a statistical significance of the mediator variable and the insignificance of the independent variable.

Recently, Zhao et al. (2010) demonstrated that the significant relationship between independent variable and dependent variable is not necessary and can be misleading. This is because it represents the total effect of the sum of direct and indirect effects, including the mediator, and that mediation must be only established by the existence of an indirect effect. Put simply, to demonstrate mediation “all that matters is that the indirect effect is significant” (Zhao et al., 2010, p. 204). Thus, the following two models of analysis are employed to test for the mediation effect of financial performance, according to the main hypothesis in this study.

$$ROA_{it-1} = \alpha + b_1 CSR_{it-2} + b_2 SIZ_{it-1} + b_3 AGE_{it-1} + b_4 LEV_{it-1} + b_5 DIV_{it-1} + b_6 LIQ_{it-1} + b_7 CAP_{it-1} + b_8 SIC_i + \mu_i + v_{it}$$

$$INS_{it} = \alpha + b_1 CSR_{it-2} + b_2 ROA_{it-1} + b_3 SIZ_{it} + b_4 AGE_{it} + b_5 LEV_{it} + b_6 DIV_{it} + b_7 LIQ_{it} + b_8 CAP_{it} + b_9 SIC_i + \mu_i + v_{it}$$

where ( $\alpha$ ) is a constant and ( $b_1 : b_9$ ) are the parameters for the explanatory variables. The subscript ( $i$ ) refers to the firm number and the subscript ( $t$ ) denotes the time period. ( $\mu_i$ ) is the unobservable individual heterogeneity, and ( $v_{it}$ )

Table 3  
Variables descriptive statistics.

	Mean	SD	25th percentile	Median	75th percentile
CSR	15.87	8.51	8	16	23
INS (%)	33.53	24.09	16	32.4	52
ROA (%)	7.73	9.36	2.52	5.40	10.40
SIZ	21.51	2.18	19.87	21.74	23.20
AGE	26.41	19.68	12	22.5	33
LEV (%)	55.98	40.60	28.65	56.83	71.79
DIV	3.09	20.33	0	0	1
LIQ (%)	3.69	8.18	1.13	1.36	2.92
CAP (%)	20.82	20.29	1.28	14.68	34.56



Table 4

The impact of social responsibility on institutional investors: the mediating effect of financial performance.

	Model 1 (Mediator=ROA)	Model 2 (Dependent variable=INS)
CSR	−0.461*** (0.038)	0.049 (0.157)
ROA		−0.950*** (0.353)
SIZ	1.123*** (0.245)	−6.72*** (1.514)
AGE	0.006 (0.030)	0.899*** (0.154)
LEV	−0.036*** (0.008)	0.192*** (0.053)
DIV	0.089*** (0.007)	0.145* (0.063)
LIQ	0.060 (0.038)	−1.02*** (0.126)
CAP	0.147 (0.087)	19.69 (14.01)
Industry effects ( <i>F</i> -test)	225.96***	390.78***
Wald ( $\chi^2$ )	1306.9***	2035.9***
<i>F</i> -test	1.64*	10.04***
B–P LM test	4.85*	42.01***
Hausman	10.79	6.60
Heteroscedasticity	43,985.2***	2.0e <sup>+06</sup> ***
Serial correlation	67.92***	91.84***
CSR (predicted value) test	1.62	0.16
ROA (predicted value) test		1.40

(i) \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ .

(ii) Figures in brackets are standard errors robust to heteroscedasticity.

(iii) *F*-test provides a test of the pooled OLS model against the fixed effects model based on the OLS residuals.

(iv) B–P LM test is the Breusch and Pagan's (1980) Lagrange Multiplier statistic that provides a test of the pooled OLS model against the random effects model based on the OLS residuals.

(v) Hausman is the Hausman (1978) specification test for fixed effects over random effects.

(vi) Wald is the Wald test ( $\chi^2$ ) for model goodness-of-fit.

(vii) Heteroscedasticity is the modified Wald statistic for group-wise heteroscedasticity (Greene, 2003).

(viii) Serial correlation is the Wooldridge test for autocorrelation in panel-data models (Wooldridge, 2002).

(ix) CSR test and ROA test are  $\chi^2$ -tests for expected endogeneity.

is the remainder disturbance or the usual disturbance in the regression model that varies with individual units and time.

The Hausman specification test (Hausman, 1978) was applied to test for whether corporate social responsibility, institutional ownership and return on assets can be considered as endogenous variables or not. Following the recommendation of Gujarati (2003), the predicted values of corporate social responsibility, institutional ownership and return on assets were estimated and used with original values as well as other control variables as explained above. The  $\chi^2$ -statistics for the predicted values of corporate social responsibility and return on assets, as reported in Table 4, were not significant. Thus, corporate social responsibility, institutional ownership and return on assets can be treated as exogenous variables.

The above stated models of analysis, in which return on assets and institutional ownership are treated as dependent variables, were estimated using panel data regression. For panel data estimates, the *F*-test (Baltagi, 1995) and the Breusch and Pagan (1980) Lagrange Multiplier test (B–P) were performed to decide between pooled regression and the alternatives of panel data (i.e., fixed and random effects, respectively). According to the results that are reported in Table 4, both tests are significant. The implication of these results is that the fixed effects model and the random effects model are preferred to the pooled model. Thus, the Hausman (1978) specification test was conducted to decide between the fixed effect model and the random effect model. The Hausman test, as reported in Table 4, was insignificant in all cases. This implies that the random effects model is preferred to the fixed effects model, under any case (Baltagi, 1995; Greene, 2003).

Heteroscedasticity and serial correlation are two serious problems that can affect the estimate of the random effects model. The presence of these problems means that the standard errors associated with each regression coefficient will not be correct (Gujarati, 2003). Therefore, the modified Wald test (Greene, 2003) and the Wooldridge (2002) test were performed to check for heteroscedasticity and serial correlation, respectively, and the results are reported in Table 4. The results show that heteroscedasticity and serial correlation are present in all cases. Therefore, the

generalized least squares (GLS) method was employed to correct for heteroscedasticity and serial correlation in all models (Hausman, 1978).

According to results that are reported in Table 4, corporate social responsibility, as an independent variable, affects the mediator variable (return on assets), under Model 1, negatively and significantly ( $-0.461, p < 0.001$ ). When return on assets and corporate social responsibility, as well as control variables, are included in Model 2, it is found that corporate social responsibility (relation (c) in Fig. 1) has no significant direct effect ( $0.049, p > 0.10$ ), while return on assets has exerted a negative and significant coefficient ( $-0.950, p < 0.01$ ) on institutional ownership. Thus, the indirect effect ( $(a \times b)$  in Fig. 1) is 0.438. The conservative Sobel–Goodman test for the indirect effect showed that the effect of corporate social responsibility of institutional ownership through its indirect effect via return on assets is significant ( $Z=2.639, p=0.008$ ).

The bootstrap test (with 5000 bootstrap samples), which offers a much more alternative that imposes no distributional assumption (Preacher & Hayes, 2008; Zhao et al., 2010), is employed to test the mediation effect of return on assets between corporate social responsibility and institutional ownership. The results show that the indirect effect is positive and significant with a bias corrected 95% confidence intervals excluding zero (0.136, 0.829). According to Zhao et al. (2010), these results suggest indirect-only mediation, because the indirect effect ( $a \times b$ ) is significant, but (c) is not, and give support evidence for applicability of the main hypothesis in this study.

## 6. Conclusion and implications

Existing literature is inconclusive about the relationship between social responsibility and institutional investors as it assumes, implicitly, that this relationship is direct. An alternative perspective, that has received less attention in the literature, is that this relationship can be mediated by other contextual variables such as financial performance. Thus, this study is aiming to provide some empirical evidence on this issue that may help in explaining divergence in prior work.

Results of panel data analysis showed that financial performance mediates the effect of social responsibility on institutional investors. Specifically, the findings demonstrated that social responsibility affects financial performance negatively, which, in turn, affects institutional investors also negatively. Put simply, the results demonstrate that better (or worse) financial performance, and rather social responsibility, is the lead for institutional investors when they make their investment decisions. The implication of this finding is that financial performance plays an important mediating role in the relationship between social responsibility and institutional investors. Thus, overlooking that the relationship between social responsibility and institutional investors is probably subordinate to economic criteria may result in spurious conclusions.

This study, to the best of our knowledge, is the first one that offers empirical evidence regarding the effect of mediating effect of financial performance on the relationship between social responsibility and institutional investors. Moreover, the paper adds to the corporate finance literature by providing empirical evidence from Egypt as an emerging market, where much of the existing evidence comes from more developed countries.

The findings of this paper have some implications for practitioners and academic research. For practitioners, if it is true that both ethically-oriented and non-ethically-oriented investors are interested in financial performance, then managers will have a great opportunity to optimize their firms' attractiveness in the eyes of investors, especially institutions investors, by justifying their social programs and activities in a financial form. In other words, managers should seek to establish financial motivations for their social orientation. This is, in fact, a very important issue as “in the absence of strong financial motivations, some institutions may be reacting to a current need to look socially responsible by making small or token investment in high-CSP [corporate social performance] companies” (Graves and Waddock, 1994, p. 1044).

The findings of this study open some directions for future work in corporate finance literature. Future studies are invited to investigate the mediating effect of financial performance on the relationship between social responsibility and institutional investors in other contexts or countries. This becomes very important not only because “socially responsible investment has no universal principles” (McLachlan & Gardner, 2004, p. 20), and corporate social responsibility has often “a location-specific context” (Welford, Chan, & Man, 2008), but also because the influence of institutional investors varies with country specifications (Seifert, Gonenc, & Wright, 2005), as national institutions may allocate power within firms in a different way (Aguilera, 2005). This direction is expected also to add value to our understanding with the increase in the adoption of corporate social programs and initiatives.

The outcome of such cross-countries' studies is more likely to detect possible alternatives that can be applied to encourage companies to be more socially responsible.

Furthermore, the significant effect of industry heterogeneity that is reported in this paper demonstrates that studying the effect of industry type on investors' perception toward corporate social responsibility is another promising area for future research. In fact, this is an important issue as some investors may not desire to invest, for example, in the tobacco industry as a result of their ethical orientation, while this industry for many other investors is an “uncontrolled financial risk” (Hummels & Timmer, 2004).

Institutional investors may engage in social programs and initiatives to protect their investment, but in different ways. For instance, they are more likely to utilize social responsibility as a tool to legitimize their existence and operations, conform with the industry's norms or lessen managerial discretion (Wahba, 2010). Thus, future studies are also invited to examine how the relationship between corporate social responsibility and institutional investors varies with the effect of any non-financial motivations. Moreover, since social activities may become, for example, an effective managerial entrenchment strategy (Cespa & Cestone, 2007), future studies are needed to investigate the relationship between other types of ownership (such as managerial ownership and foreign shareholding) and corporate social responsibility.

## References

- Abdel Shahid, S. (2003). *Does ownership structure affect firm value? Evidence from the Egyptian stock market*. Working paper (SSRN: social science research network). <http://dx.doi.org/10.2139/ssrn.378580>.
- Aguilera, R. (2005). Corporate governance and director accountability: An institutional comparative perspective. *British Journal of Management*, 16(S1), 39–54.
- Aupperle, K., Carroll, A., & Hatfield, J. (1985). An empirical examination of the relationship between corporate social responsibility and profitability. *Academy of Management Journal*, 28(2), 446–463.
- Baltagi, B. H. (1995). *Econometric analysis of panel data*. New York: John Wiley.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality & Social Psychology*, 51, 1173–1182.
- Breusch, S., & Pagan, R. (1980). The Lagrange multiplier test and its applications to model specification in econometrics. *Review of Economic Studies*, 47(1), 239–253.
- Bushee, B. (2001). Do institutional investors prefer near-term earnings over long-run value? *Contemporary Accounting Research*, 18(2), 207–246.
- Buysse, K., & Verbeke, A. (2003). Proactive environmental strategies: A stakeholder management perspective. *Strategic Management Journal*, 24(5), 453–470.
- Cespa, G., & Cestone, G. (2007). Corporate social responsibility and managerial entrenchment. *Journal of Economics & Management Strategy*, 16(3), 741–771.
- Chapple, W., Morrison, C., & Harris, R. (2005). Manufacturing and corporate environmental responsibility: Cost implication of voluntary waste minimization. *Structural Change and Economic Dynamics*, 16(3), 347–373.
- Coffey, B., & Fryxell, G. (1991). Institutional ownership of stock and dimensions of corporate social performance: An empirical examination. *Journal of Business Ethics*, 10, 437–444.
- Cohen, M., Fenn, S., & Konar, S. (1995). *Environmental and financial performance: Are they related?* Owen Graduate School of Management working paper. Vanderbilt University.
- Cox, P., Brammer, S., & Millington, A. (2004). An empirical examination of institutional investor preferences for corporate social performance. *Journal of Business Ethics*, 52, 27–43.
- Davis, K. (1973). The case for and against business assumption of social responsibilities. *Academy of Management Journal*, 16(2), 312–322.
- ECRC (Egyptian Corporate Responsibility Center). (2012). *The S&P/EGX index*, (<http://www.ecrc.org.eg/Index.aspx>).
- Elsayed, K. (2006). Reexamining the expected effect of available resources and firm size on firm environmental orientation: An empirical study of UK firms. *Journal of Business Ethics*, 65, 297–308.
- Elsayed, K., & Paton, D. (2005). The impact of environmental performance on firm performance: Static and dynamic panel data evidence. *Structural Change and Economic Dynamics*, 16(3), 395–412.
- Elsayed, K., & Paton, D. (2009). The impact of financial performance on environmental policy: Does firm life cycle matter? *Business Strategy and the Environment*, 18, 397–413.
- Elsayed, K., & Wahba, H. (2013). Investigating the relationship between ownership structure and inventory management: A corporate governance perspective. *International Journal of Production Economics*, 143, 207–218.
- El-Zayat, H., Ibraheem, G., & Kandil, S. (2006). The response of industry to environmental regulations in Alexandria, Egypt. *Journal of Environmental Management*, 79, 207–214.
- Friedman, M. (1970). The Social Responsibility of Business is to increase its profits. *New York Times Magazine* September 13, 122–126.
- Graves, S., & Waddock, S. (1994). Institutional owners and corporate social performance. *Academy of Management Journal*, 37(4), 1034–1046.
- Greene, W. (2003). *Econometric analysis* (4th edition). NJ: Prentice-Hall.
- Greiner, L. (1972). Evolution and revolution as organizations grow. *Harvard Business Review*, 50(4), 37–46.

- Gujarati, D. (2003). *Basic econometrics* (4th edition). New York: McGraw-Hill.
- Hansen, S., & Hill, L. (1991). Are institutional investors myopic? A time series study of four technology-driven industries. *Strategic Management Journal*, 12, 1–16.
- Hart, S. L., & Ahuja, G. (1996). Does it pay to be green? An empirical examination of the relationship between emission reduction and firm performance. *Business Strategy and the Environment*, 5(1), 30–37.
- Hausman, J. (1978). Specification tests in econometrics. *Econometrica*, 46, 1251–1271.
- Henderson, R., & Clark, K. (1990). Architectural innovation: The reconfiguration of existing. *Administrative Science Quarterly*, 35(1), 9–30.
- Henriques, I., & Sadosky, P. (1996). The determinants of an environmentally responsive firm: An empirical approach. *Journal of Environmental Economics and Management*, 30(3), 381–395.
- Hummels, H., & Timmer, D. (2004). Investors in need of social, ethical and environmental information. *Journal of Business Ethics*, 52, 73–84.
- Johnson, R., & Greening, D. (1999). The effects of corporate governance and institutional ownership on corporate social performance. *Academy of Management Journal*, 42(5), 564–576.
- Koh, P. (2003). On the association between institutional ownership and aggressive corporate earnings management in Australia. *The British Accounting Review*, 35, 105–128.
- Mahoney, L., & Roberts, W. (2007). Corporate social performance, financial performance and institutional ownership of Canadian firms. *Accounting Forum*, 31, 233–253.
- Mahoney, L., & Thorne, L. (2005). Corporate social responsibility and long-term compensation: Evidence from Canada. *Journal of Business Ethics*, 57, 241–253.
- Matterson, H. (2000). Ethics admirable, but money comes first. *The Australian*, 35. (21 August).
- McLachlan, J., & Gardner, J. (2004). A comparison of socially responsible and conventional investors. *Journal of Business Ethics*, 52, 11–25.
- McWilliams, A., & Siegel, D. (2001). Corporate social responsibility: A theory of the firm perspective. *Academy of Management Review*, 26, 117–127.
- McWilliams, A., Van Fleet, D., & Cory, K. (2002). Raising Rivals' costs through political strategy: An extension of resource-based theory. *Journal of Management Studies*, 39(5), 707–723.
- Michelson, G., Wailes, N., Laan, S., & Forst, G. (2004). Ethical investment process and outcomes. *Journal of Business Ethics*, 52, 1–10.
- Petersen, H. L., & Vredenburg, H. (2009). Morals or economics? Institutional investor preferences for corporate social responsibility. *Journal of Business Ethics*, 90(1), 1–14.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40, 879–891.
- Preston, L., & O'Bannon, D. (1997). The corporate social–financial performance relationship: A typology and analysis. *Business and Society*, 36(4), 419–429.
- Rizk, R., Dixon, R., & Woodhead, A. (2008). Corporate social and environmental reporting: A survey of disclosure practices in Egypt. *Social Responsibility Journal*, 4(3), 306–323.
- Russo, M., & Fouts, P. (1997). A resource-based perspective on corporate environmental performance and profitability. *Academy of Management Journal*, 40(3), 534–559.
- Rust, J., & Rothwell, G. (1995). Optimal response to a shift regulatory regime: The case of the US nuclear power industry. *Journal of Applied Econometrics*, 10(4), 75–118.
- Saleh, M., Zulkifli, N., & Muhamad, R. (2010). Corporate social responsibility disclosure and its relation on institutional ownership: Evidence from public listed companies in Malaysia. *Managerial Auditing Journal*, 25(6), 591–613.
- Schmalensee, R. (1989). Inter-industry studies of structure and performance. In: R. Schmalensee, & R. Willig (Eds.), *Handbook of industrial organization* (pp. 951–1009). Amsterdam: Elsevier.
- Seifert, B., Gonenc, H., & Wright, J. (2005). The international evidence on performance and equity ownership by insiders, blockholders, and institutions. *Journal of Multinational Financial Management*, 15, 171–191.
- Shank, T., Manullang, D., & Hill, R. (2005). Doing well while doing good revisited: A study of socially responsible firms' short-term versus long-term performance. *Managerial Finance*, 31(8), 33–46.
- Sparkes, R. (1998). The challenge of ethical investment: Activism assets and analysis. In: I. Jones, & M. Pollitt (Eds.), *The role of business ethics in economic performance* (pp. 141–170). London: McMillan Press.
- Sundaramurthy, C., Rhoades, D., & Rechner, P. (2005). A meta-analysis of the effects of executive and institutional ownership on firm performance. *Journal of Managerial Issues*, 15, 494–510.
- Teoh, H., & Shiu, G. (1990). Attitudes towards corporate social responsibility and perceived importance social responsibility information characteristics in a decision context. *Journal of Business Ethics*, 9, 71–77.
- Waddock, S., & Graves, S. (1997). The corporate social performance–financial performance link. *Strategic Management Journal*, 18(4), 303–319.
- Wahba, H. (2008a). Does the market value corporate environmental responsibility? An empirical examination. *Corporate Social Responsibility and Environmental Management*, 15, 89–99.
- Wahba, H. (2008b). Exploring the moderating effect of financial performance on the relationship between corporate environmental responsibility and institutional investors: Some Egyptian evidence. *Corporate Social Responsibility and Environmental Management*, 15, 361–371.
- Wahba, H. (2010). How do institutional shareholders manipulate corporate environmental strategy to protect their equity value? A study of the adoption of ISO 14001 by Egyptian firms. *Business Strategy and the Environment*, 19(8), 495–511.
- Wahba, H. (2014). Capital structure, managerial ownership and firm performance: Evidence from Egypt. *Journal of Management & Governance*, 18(4), 1041–1061.
- Wahba, H. (2015). The joint effect of board characteristics on financial performance: Empirical evidence from Egypt. *Review of Accounting and Finance*, 14(1), 20–40.

- Wahba, H., & Elsayed, K. (2014a). The effect of institutional investor type on the relationship between CEO duality and financial performance. *International Journal of Business Governance and Ethics*, 9(3), 221–242.
- Wahba, H., & Elsayed, K. (2014b). The effect of life cycle stage of a firm on the relationship between board size and financial performance. *International Journal of Managerial and Financial Accounting*, 6(4), 273–295.
- Welford, R., Chan, C., & Man, M. (2008). Priorities for corporate social responsibility: A survey of businesses and their stakeholders. *Corporate Social Responsibility and Environmental Management*, 15, 52–62.
- Wood, D. J. (1991). Corporate social performance revisited. *Academy of Management Review*, 16, 691–718.
- Wood, D. J., & Jones, R. E. (1995). Stakeholder mismatching: A theoretical problem in empirical research in corporate social performance. *International Journal of Organizational Analysis*, 3, 229–267.
- Wooldridge, M. (2002). *Econometric analysis of cross section and panel data*. Cambridge, MA: MIT Press.
- Zhao, X., Lynch, J., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research*, 37, 197–206.