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## Article

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# The moderating effect of investment opportunities on the relation between analyst coverage and managerial myopia: evidence from Egypt

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## ABSTRACT

The purpose of this study is to investigate whether analyst coverage is associated with managerial myopia. Moreover, the effect of the interaction between analyst coverage and investment opportunities on managerial myopia is also investigated. We used data of 100 companies listed on the Egyptian stock exchange for the period 2014–2019. The results indicate that analyst coverage exacerbates managerial myopia. This result is consistent with the financial analysts' *pressure role*, which indicates that analyst coverage imposes excessive pressure on managers to achieve short-term goals and thereby exacerbates managerial myopia. Furthermore, this study finds that the interaction between analyst coverage and investment opportunities alleviates managerial myopia. This result is consistent with the financial analysts' *monitoring role*, which suggests that financial analysts, by acting as effective monitors, mitigate managerial myopia.

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## 1. Introduction

The purpose of this study is to investigate whether analyst coverage is associated with managerial myopia. Managerial myopia is the tendency of managers to attempt to induce increases of stock price by boosting current earnings at the expense of long-term objectives (Stein, 1988). This implies underinvestment in viable long-term projects, reduction of discretionary expenses (e.g. R&D), or taking exaggerated risks with the objective of achieving short-term goals (Dallas, 2012). As such, managerial myopia may decrease firm value and thereby shareholders' wealth.

Extant literature suggests that this relation is rather complex: for it may depend on the particular role financial analysts' coverage plays. Three distinct roles of financial analysts' coverage are generally identified: *monitoring*, *informational*, and *pressure roles*. First, financial analysts have experience with the businesses they cover in addition to accounting and finance training. Also, they follow firms on a regular basis, which enables them to inspect management behaviors and decisions on a continuous basis. Hence, analysts monitor firms' managers and effectively influence their decision-making (Chen et al., 2015; Degeorge et al., 2013; Doukas et al., 2008; Irani & Oesch, 2013; Sun, 2009; Yu, 2008). This is referred to as the financial analysts' *monitoring role*.

Second, financial analysts have the ability to gather, evaluate, and deliver corporates' information to investors and other stakeholders. Hence, they dilute information asymmetry between managers and investors and thereby add value to the financial market and enhance market efficiency (Derrien & Kecskés, 2013;

Healy & Palepu, 2001). This is referred to as the *informational role* of financial analysts. Consequently, financial analysts' informational and monitoring roles can encourage long-term investments and thereby mitigate managerial myopia. These two roles can be regarded as the beneficial influence of financial analysts on managerial behavior.

Finally, financial analysts create extreme pressure on management to achieve short-term earnings targets and attain analysts' earnings forecasts, since missing analysts' earnings forecasts leads to a significant decline in stock prices, a drop in management compensation, and a higher probability of management turnover (Graham et al., 2005). Hence, management is incentivized to forgo viable long-term investments in order to accomplish short-term goals (Clarke et al., 2015; He & Tian, 2013; Michenaud, 2008). This is known as the *pressure role* of financial analysts' coverage. This role can be viewed as financial analysts' detrimental influence on managerial behavior.

Evidence from previous studies on the relation between analyst coverage and managerial myopia is mixed. Thus, this relation is not yet fully understood and its nature is still an empirical issue. In the way of understanding this relation, we argue that managerial myopia may be moderated by the availability of investment opportunities. We hypothesize that the availability of good investment opportunities is expected to mitigate managerial myopia. On the other hand, if good investment opportunities are in short supply, the manager will be tempted to invest in short-term projects. This possibility is not evaluated in prior research and thus the current study could contribute to extant literature, especially as evidence originates in an emerging economy such as Egypt.

Most prior studies investigate whether analyst coverage is related to firms' investment in developed countries. Given that a country's institutional factors, such as legal and information infrastructure, could influence the effect of financial analysts on management behavior (Chang et al., 2000; Degeorge et al., 2013; Elbannan, 2013), the current study examines the relation between analyst coverage and managerial myopia and the moderating effect of investment opportunities on this relation in an emerging economy, namely Egypt.

Additionally, this study addresses one implication of agency theory by indicating how the interaction between analyst coverage and investment opportunities can improve the information environment through reducing information asymmetry and provide effective monitoring activities. Hence, the detrimental impact of moral hazard and adverse selection problems on investment decisions is decreased.

Our findings indicate that there is a positive effect of analyst coverage on managerial myopia, which supports the *pressure role* of financial analysts. Moreover, the findings suggest that analyst coverage affects managerial myopia only when the firm has good investment opportunities, which is consistent with financial analysts' *monitoring role*.

The remainder of this paper is organized as follows: [Section 2](#) presents theoretical background. [Section 3](#) presents empirical literature review and hypotheses development. [Section 4](#) describes the research design, variables measurement, and sample selection. In [section 5](#), empirical results, discussion, and additional analyses are presented. [Section 6](#) presents summary and conclusion. Limitations and future research ideas are laid down in the final section.

## 2. Theoretical background

In an ideal environment that is free from friction, managers will engage in projects with positive net present values (Modigliani & Miller, 1958). However, in the real world, literature indicates that firms make suboptimal investment decisions. The conflict of interests between managers and shareholders and managers tendency to act in their own interests at the expense of stakeholders' interests (i.e. agency problem), explain the existence of suboptimal investment decisions (Chen et al., 2017; Jensen & Meckling, 1976; Stein, 2003). The improvement of firms' information environment and the effective monitoring exercised by institutional investors, financial analysts, and other stakeholders can lessen both moral hazard and adverse selection problems induced by the separation of ownership and control (Chen et al., 2017; Jensen & Meckling, 1976).

Stein (1989) suggests that managers can behave myopically even in a perfectly efficient market for two reasons: managers primary concern with stock prices and the unobservability of managerial actions and managers' private information advantage over shareholders. According to Stein (1989) model,

shareholders make predictions of future earnings based on their current earnings. Hence, managers are incentivized to manipulate signals to shareholders by exaggerating current earnings to increase anticipated future earnings. The stock market, on the other hand, makes its projections based on anticipating a specific level of earnings growth. Further, Bebchuk and Stole (1993) argue that short-term objectives, along with imperfect information, may cause underinvestment or overinvestment in long-term projects based on the observability of the level of investment and its productivity. They provide evidence that underinvestment can occur when investors are not able to observe the level of investment undertaken, whereas overinvestment can occur when investors are able to perceive the level of investment but not its productivity.

On the one hand, financial analysts act as effective monitors of managers' behavior because they have distinctive characteristics (Jensen & Meckling, 1976). Hence, analysts can mitigate the moral hazard problem and encourage long-term investment that maximizes shareholders' wealth and firm value. On the other hand, the capital market punishes companies that do not meet or beat analysts' forecasts (Mizik, 2010). Therefore, managers have incentives to behave myopically and forgo good investment opportunities.

### 3. Literature review and hypotheses development

#### 3.1. Analyst coverage and managerial myopia

The influence of analyst coverage on corporate investment and financing decisions has been investigated in prior studies. Doukas et al. (2008) find that firms increase their investment as a result of increased analyst coverage. Derrien and Kecskés (2013) indicate that a decline in analyst coverage decreases firm investment and financing activities. Furthermore, this result is more significant for smaller firms and those with higher financial constraints. These findings are consistent with the idea that a rise in information asymmetry resulting from a reduction in analyst coverage can increase the cost of capital, which in turn causes a reduction in long-term investment. In other words, management of firms with less analyst coverage tends to become myopic.

This stream of literature documents how institutional characteristics of a country affect the role of analyst coverage as external monitors. Sun (2009) finds that firms tend to manage earnings less due to increasing analyst coverage. In addition, this relation is more significant for countries with weak investor protection. Degeorge et al. (2013) find that the financial development of a country affects financial analysts' monitoring role using data from 21 countries.

Regarding financial analysts' pressure role, a number of studies indicate that financial analysts, by determining short-term earnings targets to accomplish, impose undue pressure on firms' managers. Michenaud (2008) finds that firms decrease long-term investment when analysts pressure to increase earnings per share is high. Also, the decline in firms' investment increases managers' ability to achieve analysts' earnings targets. He and Tian (2013) show that managers are more likely to decrease firm innovation because of increasing analyst coverage.

Clarke et al. (2015), on the other hand, find that analyst coverage hinders innovation and thereby exacerbates managerial myopia in firms that are low-quality innovators, whereas analysts encourage innovation in firms that are efficient innovators, implying that analysts have a beneficial role in allocating capital funds to profitable long-term investments by impairing wasteful innovation. Guo et al. (2019) indicate that firms decrease R&D expenditures as a result of increasing analyst coverage. In the meantime, analyst coverage may enhance firms' investment in acquisitions and corporate venture capital, which suggests that the financial analysts' information and pressure roles differ throughout the numerous policies that a firm invests in.

In sum, financial analysts communicate information about firms' long-term investments to other stakeholders and enable them to realize the real value of such investments by decreasing the information asymmetry between managers and investors. Also, financial analysts, by acting as external monitors for firms' managers, assist managers in allocating capital funds to the proper long-term investment. Consequently, analyst coverage induces managers to engage in long-term investments and thereby decreases the possibility of managerial myopia.

An alternative view suggests that financial analysts exercise undue pressure on managers to attain short-term goals. Thus, managers are willing to decrease long-term investment and as such exacerbate managerial myopia.

According to the prior studies reviewed above, two competing hypotheses are formulated.

*H1-a: The information and monitoring role:*

*Analysts' coverage mitigates managerial myopia.*

*H1-b: The pressure role:*

*Analysts' coverage enhances managerial myopia.*

### **3.2. The moderating effect of investment opportunities on the relation between analyst coverage and managerial myopia**

The proposed moderating effect of investment opportunities on managerial myopia is a novel addition to the extant literature. The rationale of this proposed moderating effect is that in an environment, with rich investment opportunities coupled with adequate analyst coverage, forgoing profitable investment opportunities grows exceedingly difficult for the manager. As such in this environment, myopia is difficult to expect. In other words, financial analysts, by serving as effective monitors and reducing information asymmetry, encourage managers to increase investments that maximize firms' value and thereby maximize shareholders' wealth, given profitable investment opportunities. Consequently, the beneficial effect of analyst coverage on managerial myopia will be observed given the existence of investment opportunities.

Consequently, the next hypothesis is formulated:

*H2: Investment opportunities moderate the relation between analyst coverage and managerial myopia.*

## **4. Research design**

### **4.1. Model specification**

The following logistics regression model is estimated in order to examine the effect of analyst coverage and the moderating effect of investment opportunities on managerial myopia:

$$MM_{it} = \beta_0 + \beta_1 COV_{it} + \beta_2 INVOPP_{it} + \beta_3 COV_{it} * INVOPP_{it} + \beta_4 SIZE_{it} + \beta_5 ROA_{it} + \beta_6 LEV_{it} + \beta_7 INST_{it} + \beta_8 FCF_{it} + \beta_9 \Delta INV_{it-1} + \beta_{10} \sum Year_{it} + \beta_{11} \sum industry_{it} + \varepsilon_{it}$$

where MM is managerial myopia; COV is analyst coverage; INVOPP is investment opportunities; SIZE is firm size; ROA is return on assets; LEV is leverage; INST is institutional ownership; FCF is free cash flow;  $\Delta INV$  is prior year's change in the firm's investment.  $\varepsilon_{it}$  is error term.

Industry and year dummies are included to capture the potential effects related to the industry and the year.

#### **4.1.1. Measurement of dependent variable**

Firms' investment in fixed assets is used to capture managerial myopia. Investment in fixed assets reduces earnings through increasing depreciation. It is also financed by decreasing cash or increasing debt. Hence, the reduction in investment in fixed assets leads to meeting short-term goals (Edmans et al., 2017; Graham et al., 2005; Kraft et al., 2018). Furthermore, several studies suggest that underinvestment in fixed assets is used as a proxy for managerial myopia. For instance, Graham et al. (2005) indicate that managers postpone initiating new investments and delay the maintenance of equipment to fulfill

short-term objectives. Kraft et al. (2018) examine the managerial myopia hypothesis by investigating how reporting frequency influences capital investment levels.

Managerial myopia (MM) is measured as a dichotomous variable that equals one if the change in net fixed assets scaled by total assets at the start of the year is less than or equal to zero, and 0 otherwise.

#### **4.1.2. Measurement of independent variable**

Following (Clarke et al., 2015), analyst coverage (COV) is measured as the natural logarithm of one plus the number of analysts covering the firm.

#### **4.1.3. Measurement of moderator variable**

Investment opportunities (INVOPP) are measured using Tobin's Q, which equals the market value of equity plus total debt at end of year over the book value of assets at the beginning of the year.

#### **4.1.4. Measurement of control variables**

First, regarding *firm size*, larger firms have a better information environment than smaller firms. Smaller firms, on the other hand, may suffer cash flow constraints that limit their ability to invest (Bushee, 1998). Therefore, managerial myopia is likely to be induced for smaller firms. Firm size (SIZE) is measured by natural logarithm of total assets. Second, more profitable firms are more likely to encourage long-term investment and thereby mitigate managerial myopia (Guo et al., 2019). Profitability (ROA) is measured by the return on assets.

Third, Jensen (1986) argues that debt payments force managers to payout cash, and thereby firms may have cash flow shortages that lessen the likelihood of increasing investments. Firms with higher leverage are reported to engage in myopic behavior (Cheng et al., 2013; Kraft et al., 2018). We control for leverage (LEV), which is measured as the ratio of total debt scaled by total assets.

Fourth, institutional investors have an impact on firms' investment behavior in two different ways. On the one hand, institutional investors who have a high portfolio turnover and engage in momentum trading strategies can induce managers to behave myopically. On the other hand, institutional investors may mitigate managerial myopia by providing a higher degree of monitoring of managerial behavior (Bushee, 1998; Wahal & McConnell, 2000). Hence, we control for institutional investors (INST), which is measured as the ratio of a firm's shares held by institutional investors.

Fifth, firms with high free cash flow are more likely to increase firms' investment (Jensen, 1986). Additionally, firms with substantially negative free cash flow have a greater need to raise capital and thus have incentives to behave myopically to increase earnings and achieve short-term goals (Bushee, 1998). We control for free cash flow (FCF), which is measured as cash flow from operations less capital expenditures scaled by total assets.

Sixth, we control for the prior year's change in firm's investment ( $\Delta INV$ ), which is measured as firm's investment in year t-1 minus in year t-2 scaled by total assets. According to Bushee (1998), a reduction in firm's investment last year increases the probability of reducing investment in the current year. Conversely, if the firm cut investment in a preceding year, it becomes costlier to reduce investment in the current year.

## **4.2. Sample selection and data sources**

The study's population comprises all Egyptian companies listed on the Egyptian stock exchange. Banks and financial services firms are excluded due to their unique financial reporting practices. A sample of 100 nonfinancial, listed Egyptian firms with 600 firm-year observations from the period 2014–2019 is selected to examine how analyst coverage influences managerial myopia as well as investigate whether this effect depends on the extent to which investment opportunities exist. This period is selected to avoid time periods witnessing unusual events, including political uprising in Egypt preceding the year 2014 that has had an unknown effect on economic stability in addition to the period following 2019 which experienced the COVID-19 epidemic, which has had far reaching impact on the economy. The data are collected from the Egyptian Stock Exchange official website, companies' websites, and the Mubasher



website that are publicly available online. The data are also obtained from Egypt for Information Dissemination (EGID) in exchange for a charge.

## 5. Empirical results

### 5.1. Descriptive statistics and correlation

Table 1 presents descriptive statistics of the independent, moderator, and control variables that are used in the study. In order to eliminate the outliers effect, all continuous variables included in the study are winsorized at the top 5% and the bottom 95% percentiles of their distribution. The mean of analyst coverage (COV), as measured by the natural logarithm of one plus the number of analysts providing coverage, equals 0.367, which implies that about one analyst is covering the firm on average. The investment opportunities (INVOPP) range from 0.538 to 3.005, and the mean equals 1.229. The mean of firm size (SIZE), as measured by the natural logarithm of total assets, is 20.596, which approximately matches a total assets size of EGP 880 million, indicating that the study sample is primarily composed of medium-to large-sized firms. The leverage ratio (LEV) ranges from 8% to 82%, and the mean is 43%, which indicates that approximately 43% of the total assets of sample firms are financed by debt, suggesting that sample firms are moderately leveraged. The institutional ownership (INST) varies from 0% to 94%, and the mean is 58.1%. The mean of profitability (ROA) is equal to 6%. The free cash flow (FCF), scaled by total assets at the beginning of year, varies from  $-0.161$  to  $0.239$ , with a mean of  $0.024$ . The mean of the prior year's change in the firm's investment ( $\Delta INV$ ) equals  $0.003$ .

The Pearson correlation coefficients for all variables in the study are shown in Table 2. Analyst coverage, investment opportunities, firm size, return on assets, prior year investment, and the interaction variable are negatively correlated with managerial myopia, which tentatively imply that firms with higher analyst coverage, better investment opportunities, higher profitability, a larger previous investment in net fixed assets, and a larger size exhibit less managerial myopia in terms of cutting investment. With the exception of the correlation between the coverage (COV) and the interaction term (COV\*INVOPP), all other correlations between predictor variables range from moderate to low. Hence, multicollinearity is not a concern.

**Table 1.** Descriptive statistics.

Variables	N	Mean	SD	Minimum	Maximum
COV	600	0.367	0.639	0	2.013
INVOPP	600	1.229	0.612	0.538	3.005
COV*INVOPP	600	0.515	0.989	0	3.466
SIZE	600	20.596	1.347	18.199	23.15
ROA	600	0.060	0.076	$-0.068$	0.228
LEV	600	0.439	0.219	0.084	0.818
INST	600	0.581	0.286	0.000	0.939
FCF	600	0.024	0.099	$-0.161$	0.239
$\Delta INV$	600	0.003	0.027	$-0.038$	0.080

Notes: This table shows the sample's descriptive statistics. The study sample consists of 600 firm-year observations and spans the years 2014 to 2019.

**Table 2.** Pearson correlation matrix.

Variable	MM	COV	INVOPP	COV*INVOPP	SIZE	ROA	LEV	INST	FCF	$\Delta INV$
MM	1									
COV	$-0.166^{***}$	1								
INVOPP	$-0.081^{**}$	$0.235^{***}$	1							
COV*INVOPP	$-0.202^{***}$	$0.910^{***}$	$0.457^{***}$	1						
SIZE	$-0.107^{***}$	$0.565^{***}$	$0.172^{***}$	$0.520^{***}$	1					
ROA	$-0.156^{***}$	$0.205^{***}$	$0.507^{***}$	$0.333^{***}$	$0.115^{***}$	1				
LEV	0.020	0.015	0.051	0.009	$0.227^{***}$	$-0.204^{***}$	1			
INST	0.025	0.060	$0.204^{***}$	$0.077^{*}$	$0.309^{***}$	$0.100^{**}$	$0.251^{***}$	1		
FCF	0.021	$0.090^{**}$	$0.278^{***}$	$0.169^{***}$	$0.089^{**}$	$0.545^{***}$	$-0.171^{***}$	$0.081^{**}$	1	
$\Delta INV$	$-0.161^{***}$	$0.105^{**}$	$-0.026$	$0.102^{**}$	0.017	$0.114^{***}$	0.003	0.017	$-0.009$	1

Notes: This table shows Pearson correlation coefficients of analyst coverage, managerial myopia, investment opportunities, and other control variables. \*, \*\*, \*\*\* significant relationship at the 10%, 5%, and 1% thresholds.



## 5.2. Regression results

The maximum likelihood (ML) estimation method is used to estimate the logistics regression model. Gujarati (2003) indicates that having a dummy variable for each category or group leads to perfect collinearity. Hence, when the logistics regression model is run, the STATA omits one industry sector and one year because of collinearity. Also, the STATA excludes 18 observations, and as a result, the number of observations reduces to 582. To overcome the potential heteroscedasticity and autocorrelation problems, robust standard errors are applied (Greene, 2003). Also, the variance inflation factor (VIF) is calculated to ensure the absence of multicollinearity.

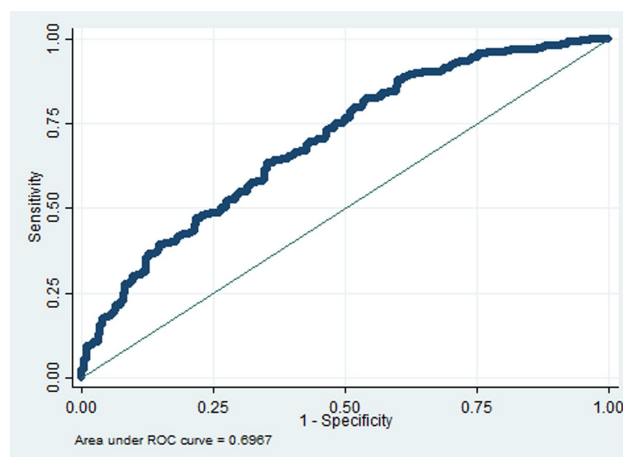
As shown in Table 3, the VIF for all explanatory variables in the study model is less than 10. Hence, there is no significant multicollinearity problem. Table 3 also shows the logistics regression results regarding the effect of analyst coverage on managerial myopia as well as the effect of investment opportunities as a moderator variable. It is important to assess the robustness of the study model before interpreting the coefficients of the study variables. The probability of  $\chi^2 = 0.0000$  is less than the level of significance of 5%. Hence, the regression model is statistically significant.

The receiver operating characteristic (ROC) curve for the study model is shown in Figure 1. Hosmer et al. (2013) indicate that a larger area under the ROC curve improves the model's classification

**Table 3.** The effect of analyst coverage and the moderating effect of investment opportunities on managerial myopia.

Dependent variable: MM			
Variables	Coefficient	z-statistic	VIF
COV	0.8273*	1.94	8.95
INVOPP	0.3221	1.58	2.17
COV*INVOPP	-0.8539***	-3.04	9.87
SIZE	-0.1576	-1.55	2.25
ROA	-3.8868**	-2.15	2.13
LEV	0.0114	0.02	1.55
INST	0.7246**	2.04	1.38
FCF	2.5722**	2.18	1.50
$\Delta INV$	-7.4624**	-2.19	1.07
Constant	3.4743	1.50	
Industry dummy	Included		
Year dummy	Included		
Observations		582	
Wald $\chi^2$ (25)		65.53	
Prob > $\chi^2$		0.0000	
Pseudo $R^2$		0.0953	
Classification		68.38%	
Area under Roc curve		0.6967	

Notes: This table presents logistics regression results of the effect of analyst coverage, the interaction of investment opportunities with analyst coverage, and the control variables on managerial myopia as a dummy variable that equals one if the changes in net fixed assets scaled by total assets at the start of the year are less than or equals zero, and 0 otherwise. \*, \*\*, \*\*\* represent significance level at 10, 5, 1 % level respectively.



**Figure 1.** The ROC curve.

effectiveness. The area under the ROC curve equals 0.6967, which implies reasonable effectiveness of model classification.

As shown in Table 3, the coefficient of analyst coverage (COV) is 0.8273 and, it is significant at the 10% level, which implies that analyst coverage is positively related to managerial myopia. Consequently,  $H_1$  (1-a) which posits that there is a negative relation between analyst coverage and managerial myopia (i.e.  $\beta_1 < 0$ ) is rejected whereas hypothesis (1-b) that predicts that there is a positive relation between analyst coverage and managerial myopia (i.e.  $\beta_1 > 0$ ) is supported.

As shown in Table 3, the coefficient of the moderator variable (COV \* INVOPP) (i.e.  $\beta_3$ ) is  $-0.8539$ , and it is significant at the 1% level, which implies that the interaction of analyst coverage with investment opportunities is negatively associated with managerial myopia. This means that financial analyst coverage, when coupled with investment opportunities mitigates managerial myopia. Hence,  $H_2$ , which predicts that investment opportunities affect the link between analyst coverage and managerial myopia is supported.

Regarding control variables, return on assets and investment in the previous period have a significant and negative relation with managerial myopia. In addition, institutional ownership and free cash flow are positively related to managerial myopia.

### 5.3. Discussion

The study evaluates two competing hypotheses about the relation between analyst coverage and management myopia: a direct relation (*pressure role*) and an inverse relation (*information and monitoring roles*). The results lend marginal support for the pressure role of analyst coverage. This result is consistent with He and Tian (2013) who state that a rise in analyst coverage causes a reduction in firm innovation and a rise in managerial myopia. In the same context, Guo et al. (2019) indicate that firms with more financial analyst coverage are more likely to cut R&D expenditures. On the other hand, this result is inconsistent with Doukas et al. (2008) who indicate that firms with higher financial analysts have incentives to increase investment and mitigate managerial myopia. Similarly, Derrien and Kecskés (2013) indicate that a decrease in analyst coverage raises cost of capital due to increased information asymmetry. Therefore, managers decrease long-term investment. Also, Guo et al. (2019) state that an increase in analyst coverage motivates managers to increase acquisition of more innovative firms and engage in corporate venture capital.

However, this result must be taken with caution. The main effect of analyst coverage ( $\beta_1$ ) has no straight forward interpretation with the existence of a significant interaction term in the regression. Since this is the case in our regression we should focus on the significance of the interaction term, i.e. on  $\beta_3$ .

The noted conflicting results concerning the effect of analyst coverage led us to invoke a moderating variable conditioning the relationship between analyst coverage and managerial myopia; namely, investments opportunities. In this regard, the study finds that the interaction between investment opportunities and analyst coverage ( $\beta_3$ ) mitigates managerial myopia. Hence, the role of analyst coverage in increasing long-term investment depends on the presence of investment opportunities.

### 5.4. Additional analysis

To assess the robustness of the study' findings, a dichotomous variable equals 1 if the change in net fixed assets scaled by beginning-of-year total assets is less than or equal to the sample median and zero otherwise is used as an alternative measure of managerial myopia. The STATA eliminates 12 observations, resulting in a total of 588 observations.

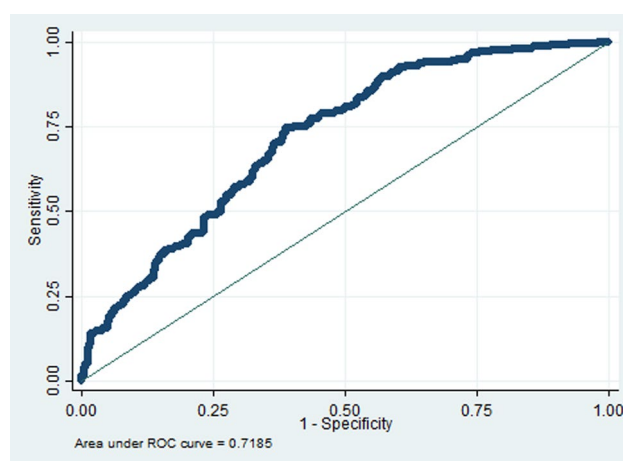
Also, robust standard errors are applied to overcome the potential heteroscedasticity and autocorrelation problems. Table 4 shows the regression model's results. The probability of  $\chi^2 = 0.0000$  is less than the level of significance of 5%, suggesting that the model is highly significant. Moreover, Figure 2 displays the receiver operating characteristic (ROC) curve. The area under the Roc curve equals 0.7185, which implies reasonable effectiveness of model classification.

The coefficient of analyst coverage ( $\beta_1$ ) is insignificant which indicates that analyst coverage does not affect managerial myopia. This result agrees with Yu (2008) and Huang et al. (2017), who state that the

**Table 4.** The effect of analyst coverage and the moderating effect of investment opportunities on managerial myopia using alternative measure.

Dependent variable: MM		
Variables	Coefficient	z-statistic
COV	0.6448	1.43
INVOPP	0.1840	0.90
COV*INVOPP	-0.5532*	-1.87
SIZE	-0.3097***	-2.97
ROA	-3.1145*	-1.81
LEV	0.1232	0.25
INST	1.0881***	3.01
FCF	2.1825*	1.94
$\Delta$ INV	-7.0054**	-2.01
Constant	4.9919**	2.13
Industry dummy	Included	
Year dummy	Included	
Observations	588	
Wald chi2 (25)	77.89	
Prob > chi <sup>2</sup>	0.0000	
Pseudo R <sup>2</sup>	0.1218	
Classification	67.52%	
Area under Roc curve	0.7185	

Notes: This table presents logistics regression results of the effect of analyst coverage, the interaction of investment opportunities with analyst coverage, and the control variables on managerial myopia as a dummy variable equals 1 if the change in net fixed assets scaled by beginning-of-year total assets is less than or equals the sample median and 0 otherwise. \*, \*\*, \*\*\* represent significance level at 10, 5, 1 % level respectively.

**Figure 2.** The ROC curve using alternative measure for managerial myopia.

informational and monitoring roles and the pressure role coexist and cancel each other. On the other hand, the conclusions regarding the beneficial influence of the moderator variable continues to hold ( $\beta_3 = -0.5532$ , significant at the 10% level).

Additionally, we split the sample into firms with high and low investment opportunities. Firms are categorized as having high (low) investment opportunities if their Tobin's Q is above (below) the sample median of Tobin's Q. We run regressions on sample firms for the high and low investment opportunities separately to show the effect of analyst coverage on managerial myopia. The results are shown in Table 5.

As shown in Table 5, there is no significant relation between analyst coverage and managerial myopia for firms with low investment opportunities. However, analyst coverage is negatively associated with managerial myopia for firms with high investment opportunities (significant at 10%), implying that analyst coverage encourage long-term investments only in firms with high investment opportunities.

## 6. Summary and conclusion

The study investigates the different roles of financial analysts by examining the relation between analyst coverage and managerial myopia as well as the moderating effect of investment opportunities on this

**Table 5.** The effect of analyst coverage and managerial myopia for two subsamples.

Variables	(1)		(2)	
	Low Tobin Q		High Tobin Q	
	MM		MM	
	Coefficient	z-statistic	Coefficient	z-statistic
COV	-0.0231	-0.08	-0.4250*	-1.84
INVOPP	-0.9941	-1.08	-0.0175	-0.09
SIZE	-0.1638	-1.40	-0.0458	-0.34
ROA	-5.4620*	-1.91	-3.7964*	-1.90
LEV	0.9396	1.20	-0.2656	-0.45
INST	-0.2168	-0.43	1.3481***	2.82
FCF	4.7422**	2.42	1.2083	0.87
$\Delta$ INV	-12.0903**	-2.38	-8.6072**	-1.98
Constant	4.6636**	1.92	1.1163	0.43
Observations	300		300	
Wald $\chi^2$ (8)	22.39		32.08	
Prob > $\chi^2$	0.0042		0.0001	
Pseudo $R^2$	0.0588		0.0762	
Classification	66%		63.76 %	

Notes: This table presents logistics regression results of the effect of analyst coverage on managerial myopia as a dummy variable that equals one if the changes in net fixed assets scaled by total assets at the start of the year are less than or equals zero, and 0 otherwise for sample firms with low and high investment opportunities separately. \*, \*\*, \*\*\* represent significance level at 10, 5, 1 % level respectively.

relation. Using data of 600 firm-years observations of Egyptian companies from 2014 to 2019, the study concludes that analyst coverage has a positive effect on managerial myopia, which supports the *pressure role* of financial analysts. By measuring managerial myopia as a dichotomous variable equals 1 if the change in net fixed assets of a firm scaled by beginning-of-year total assets is less than or equals the sample median and 0 otherwise, analyst coverage has no effect on managerial myopia, suggesting that analyst coverage's informational and pressure roles coexist and eliminate each other. In addition, investment opportunities were found to moderate the impact of analyst coverage on managerial myopia, regardless the measure of managerial myopia, which indicates that the negative effect of analyst coverage on managerial myopia depends on investment opportunities.

The findings of our study have several and valuable implications for regulators, investors, and researchers. For investors, this study contributes to the capital market by providing evidence that analyst coverage encourages long-term investments in firms with investment opportunists. Hence, investors could consider investing in the firms with higher analyst coverage to protect their investment. For regulators, long-term investments are critical for increasing firm value and ensuring long-term growth and have effect on real economy. Therefore, this study provides evidence about the governance role of analyst coverage in Egyptian context which may enhance regulators' awareness about the effect of analyst coverage on investment decisions. Finally, for researchers, providing evidence from developing countries can attract the attention of other researchers in other emerging markets with comparable contextual and institutional frameworks.

## 7. Limitations and future research

There are a number of limitations related to the current study. Firstly, due to limited data availability, the study investigates only fixed assets' investment to capture managerial myopia. Hence, firms' investment in R&D and firms' innovations were not used to investigate myopic behavior. Secondly, the study sample size compared to the sample size in previous studies is relatively small. The feasibility of large sample size is constrained by the relatively small focal population size. Thirdly, the study period is also one of the study's limitations, our study period is six years, starting from 2014 to 2019. This period is selected due to a political uprising prior to 2014 that has had an unknown effect on economic stability. Furthermore, the COVID-19 epidemic that occurred in the period following 2019 have an impact on the Egyptian economy and causes instability. Fourthly, the study examines the Egyptian market only, which may restrict the generalizability of the results to other countries with differing institutional and regulatory frameworks.

Future research can investigate the interaction effect between analyst coverage as an external monitoring mechanism and corporate governance mechanisms on managers' behavior. Alternative proxies of

managerial myopia and analyst coverage are potential extensions to the current study. Furthermore, comparing the Egyptian market with other markets to find distinct characteristics and factors affecting the role of financial analysts is still another possible area for future research.

## Authors' contributions

SAA & AMSS conceptualized the central research idea. SAA, MEA & AMSS designed the research. SAA & MEA analyzed and interpreted the data. SAA prepared the original draft. MEA reviewed the paper. AMSS & MEA supervised research progress. All authors agree to be accountable for all aspects of the work.

## Disclosure statement

There are no competing interests to report.

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## Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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