The Effect of Managerial Overconfidence on Firm Performance: A Panel Study of Indian Companies

Prof. Karishma Anklesaria Dalal, Dr. Seema Pandit, Dr. Anjali Ramnani, Dr. Rikita Thakkar

Assistant Professor, GLS University, Ahmedabad
karishma.dalal@glsuniversity.ac.in

Assistant Professor, GLS University, Ahmedabad
seema.pandit@glsuniversity.ac.in

Assistant Professor, GLS University, Ahmedabad

anjali.ramnani@glsuniversity.ac.in

Assistant Professor, GLS University, Ahmedabad
rikita.thakkar@glsuniversity.ac.in

Abstract

Behavioural Finance is a nascent field that examines the impact of human behaviour on financial decision making. Corporate behavioural finance is a niche that studies the actions of individuals especially CXO's, management and board in the context of corporate financial decision making. Overconfidence is an erroneous, dysfunctional and excessively optimistic assessment that individuals have of their own ability or knowledge. It is one of the most common but powerful and significant cognitive behavioural bias prevalent in managerial decision making. Research in various disciplines indicates that managerial overconfidence leads to detrimental consequences for firm performance such as destruction in value and subpar investment behaviours. In contrast literature also provides evidence of positive effect of managerial overconfidence due to its impact on innovation of pioneering products, processes and services. Past studies have investigated the effect of managerial overconfidence on firm performance outside India, but the literature for Indian Companies remains scarce. This research seeks to contribute to the broader understanding of how cognitive biases influence managerial behaviour and correlates with firm performance within the unique context of an emerging economy. By exploring managerial overconfidence within the Indian corporate landscape, this study aim to provide insights that may aid strategic decision-making and improve organizational performance.

Tags: Overconfidence, Behavioural Finance, CEO overconfidence, emerging economy, Firm Performance.

1. Introduction

Human behaviour is diverse and complex and unfortunately, it is not always governed exclusively by rationality. Most financial models and theories assume that an individuals' financial decision-making process is rational. Literature shows evidence of recurring patterns of irrationality in the way people as well as managers take decisions especially under uncertainty. "Behavioural Finance combines behavioural and cognitive psychological theory, with conventional financial economic thinking to provide explanations for why people make irrational financial decisions" (Phung, 2002). The field of behavioural finance rests on the premise that financial behaviour and consequently decision making, may be affected by certain psychological factors (Kahneman & Tversky, 1979), (Nemeth, 2012), (Ricciardi & Simon, 2000), Thaler et al. (1997). These psychological factors are called heuristics and biases. Behavioural Finance studies the prevalence of heuristics and biases in judgement and decision making. When decision makers are challenged with voluminous and complex data, they are unable to take optimal decisions as presumed by the standard finance theory. Instead, they are prone to biases and bank on limited number of cognitive strategies or heuristics that oversimplify complex decisions. Much of the behavioural finance literature is focused on individual psychology, particularly the use of heuristics and various biases in judgment and decision making.

One such bias is the overconfidence bias. Jain et al. (2021) view that the examination of behavioural biases are essential in the study of corporate behavioural finance. The overconfidence bias is singularly the most prevalent judgment bias. This bias manifests as an inflated subjective assessment of one's abilities compared to an objective performance (Pallier, et al., 2002). In essence it reflects an undue reliance on intuitive reasoning. It is perceived as a product of superior

cognitive and judgmental skills (Pompian, 2012). Consequently overconfidence fosters an exaggerated sense of knowledge and capability (Ludwig & Nafziger, 2011). While it neglects potential decision-making risks (Kumar & Goyal, 2015). As Merkle & Weber (2011) suggest overconfidence transcends mere self-assurance. Since the early 1960s this fundamental psychological bias has been extensively researched (Habib & Hossain, 2013). The earliest works in this field was pioneered by Oskamp (1965) in his work "overconfidence in case-study judgments". According to Peón et al. (2016), "Overconfidence can be expressed in the estimates about a person's own performance in the estimates about performance in relation to that of others and in the over application of estimates about future uncertainties". This psychological construct extends to corporate decision-making with managers often exhibiting overconfidence Hackbarth (2002). This bias leads individuals to believe their judgments are superior to the average (Weinstein, 1982).

Increasingly researchers find that managerial overconfidence can significantly impact firm policies and strategies (Hayward & Hambrick (1997); Malmendier & Tate (2008); Ren & Croson (2013). Traditionally overconfidence has been viewed as a detrimental attribute leading to negative outcomes like value destruction through unprofitable mergers, suboptimal investments and strategic planning errors. However recent studies offers a more nuanced perspective highlighting potential benefits associated with managerial overconfidence such as fostering innovation (Galasso & Simcoe, 2011) and pioneering product innovations (Simon & Houghton, 2003). While extensive research has examined the effect of overconfidence on capital expenditure and structure decisions the overall impact on corporate performance remains unclear. The existing literature on this topic is primarily based on developed economies and western cultures (Malmendier & Tate, (2005); Schrand & Zechman, (2012); Killins et al., (2021). Thus this paper tries to address this gap by investigating the association between managerial overconfidence and firm performance from the perspective of India which is one of the fast emerging economies in the world with a projected growth rate of 6.3 percent against the global average of 2.9 percent (Bardhan, 2024).

For the research sample due to paucity of time we are able to select firms listed on the Nifty 50 the benchmark index of the National Stock Exchange for the financial years 2022 and 2023. We run the OLS regression random effects model to test our premise. All firm level finance data of Indian-listed entities is collected from the ProwessIQ database. Gaps in data are appendage by primary data from company financial data from annual reports.

The subsequent segments of this paper are structured as follows. Section 2 conducts a comprehensive review of existing literature and formulates hypotheses based on this review. Section 3 outlines the methodology, encompassing sample selection, measurement of variables, and the construction of the empirical model. Section 4 elucidates the empirical findings, encompassing descriptive statistics, correlation analysis, and multiple regression analysis. Finally, Section 5 offers conclusions drawn from the findings and discusses their implications.

2. Literature review and Hypothesis Development

Malmendier and Tate (2005) note that prior literature in behavioral corporate finance emphasizes that overconfident manager tend to overestimate their firms' future performance. According to Hirshleifer et al. (2012) this overconfidence emanates from managers' inflated perceptions of their own abilities to drive success. Managerial overconfidence holds significant sway over corporate decisions as evidenced by empirical studies conducted by Roll (1986), Heaton (2002), Malmendier and Tate (2005) (2008), and Hackbarth (2008). These studies reveal that overconfidence manifests its impact across several fields of corporate decision-making such as capital budgeting and structure decisions, M&A as well as innovation. Moreover research by Wolosin et al. (1973) suggests that individuals commonly overestimate their personal contributions to their own success.

Fairchild (2005) conducted research that concluded that managerial overconfidence influences firms' capital structure decisions resulting in a higher debt ratio and increased financial distress costs. Ackert & Deaves (2009) argue that moderate levels of overconfidence can positively impact firms by motivating managers to exert concentrated efforts and potentially reducing agency problems especially moral hazard. Overconfidence also fosters enhanced social interactions among managers and facilitates network effects that benefit the firm.

2.1 Overconfidence and Firm Value

Recent studies have delved into firms' financing decisions at the individual level. This integrates neoclassical executive rationality with behavioral finance perspectives focusing notably on overconfidence. Hackbarth (2008) revealed that overconfident managers tend to under invest by preferring debt over equity financing and underestimating risks which resulted in projects that erode firm value. In support if Fairchild's findings, Ye and Yuan (2008) contended that investments made by overconfident managers negatively impacting firm value. Empirical evidence establishes a theoretical association between firm performance and managerial overconfidence with literature documenting both positive and negative impacts on firm performance. These findings underscore the complexity of an overconfident manager's role in corporate decision-making that eventually influences capital structure choices, investment behaviours and ultimately firm value. Understanding the nuances of managerial overconfidence is crucial for policymakers and practitioners seeking to optimize corporate decision-making processes and enhance firm performance in dynamic business environments. Theoretical studies indicate that overconfident managers tend to favour greater reliance on debt financing which consequently escalates the costs associated with financial distress. Additionally, managerial overconfidence is associated with a reluctance to seek external sources of financing. Overconfident managers also exhibit a heightened sensitivity to cash flows potentially leading to either underinvestment or overinvestment. Moreover, a higher degree of overconfidence among managers correlates with increased investment in innovative yet risky projects. The impact of managerial overconfidence remains contentious in current literature necessitating a balanced assessment of its effects on firm performance. A trade-off between the influence of overconfidence and firm performance must be carefully considered in managerial decision-making processes. The issue of managerial overconfidence contributing positively or detrimentally to the value of the firm remains a subject of ongoing inquiry. Several past researchers like Malmendier & Tate (2005) and Lin et al., (2008) have indicated that managers who are overconfident are inclined to engage in over-investment. As a result many scholars have speculated that such overinvestment may undermine value of the firm. Nevertheless, several other empirical studies suggest favourable association linking managerial overconfidence and firm value. For instance, Galasso & Simcoe (2011) and Hirshleifer et al. (2012) propose that managers who are overconfident exhibit a particular inclination towards risky endeavours thereby demonstrating a greater propensity for innovation. Goel & Thakor (2008) observe that managerial overconfidence may mitigate risk aversion and alleviate inefficiencies in underinvestment thereby positively impacting enterprise performance. Furthermore, some scholars argue that overconfident managers often set ambitious goals and possess the drive to accomplish them which will inadvertently enhance the value of the firm (Johnson & Fowler (2011); Hilary et al., (2016). In summary, the aforementioned studies collectively suggest a tendency for managerial overconfidence to have positive impact on the value of the firm. Consequently, we posit the following hypotheses:

H1: *Managerial overconfidence is positively related to the value of the firm.*

2.2 Overconfidence and Firm Profitability

Early research into the linkages of corporate policy and overconfidence primarily focused on over-investment as delineated in a theoretical model formulated by Heaton (2002). Past studies have furnished evidence linking overconfident managers to non-lucrative M&A's and inefficient capital budgeting decisions (Malmendier & Tate (2005), (2008); Hackbarth (2008). Nevertheless, current scholarly inquiries have highlighted the beneficial ramifications of overconfidence by examining its correlation with risk-taking behaviour. These investigations reveal that overconfident managers display a propensity for increased investment in R&D endeavours, as well as pioneering innovative ventures (Goel & Thakor (2008); Gervais et al. (2011); Hirshleifer et al. (2012). While these antecedent studies shed light on the varied impacts of decisions made by overconfident managers, they do not conclusively explain how such decisions influence firm profitability. This study seeks to address this gap by scrutinizing the relation between overconfidence and profitability of the firm. Understanding the nexus between profitability of the firm and managerial overconfidence bears significant inference for stockholders as profitability is a pivotal determinant in investment decisions. Echoing this sentiment Skala (2008) accentuates the need to consider the ramifications of managerial overconfidence on profitability of the firm. Accordingly, we hypothesize that:

H2: *Managerial overconfidence is positively related to profitability of the firm.*

3. Research design

3.1 Sample selection

Our initial sample consisted of public firms listed on the Nifty 50 benchmark index of the National Stock Exchange (NSE) during the periods 2022 to 2023. NSE established in 1996, is one of the leading bourses in India. As of January 2024, it is the 7th largest stock exchange in the world with market capitalization of US \$4.57 trillion. The Nifty 50 is a benchmark index of the NSE that corresponds to the weighted average of 50 largest Indian firms. Sample collection criteria included the elimination of all financial companies. The final sample includes 35 non financial firms. The period of study is two years from 2022 to 2023. This equates to 70 firm-year observations. Other control variables are collected from the ProwesIQ database. Any gaps in data were supplemented with original data from the company annual reports.

3.2 Explanation of variables

3.2.1 Measurement of managerial overconfidence

This paper draws on the method outlined by Schrand & Zechman (2012) and Gao & Han (2022) to gauge managerial overconfidence as their approach is deemed appropriate for investigations relying on financial data which is publicly available. We aggregate the data of the five proxy variables employed to assess overconfidence: (i) We compare the enterprise's capital expenditure with the industry median. If the enterprise's CapEx surpasses the industry median, the manager is classified as overconfident, and allotted a value of 1; otherwise, it is assigned 0. (ii) A regression of total assets growth on sales growth is performed. A positive residual signifies managerial overconfidence and allotted 1, while a negative residual signifies otherwise hence 0 is assigned. (iii) Overconfident managers exhibit a preference for employing debt as a means of financing projects. Thus, we compute the ratio of total liabilities to equity capital. If this ratio surpasses the industry median the variable is assigned a value of 1; otherwise it receives a value of 0. (iv) managers that are characterized as overconfident tend to utilize long-term interest payment methods such as corporate bonds that are convertible and preference shares. Consequently, the presence of preferred shares and convertible corporate debentures and bonds in the company corresponds to a value of 1, and their absence as 0. (v) Overconfident managers typically curtail dividend distributions. Accordingly, a lack of dividend distribution warrants a value of 1, while the presence of such distributions results in a value of 0. The cumulative score derived from these five variables determines the managerial overconfidence status. A score of 3 or higher signifies overconfidence, represented by a value of 1; otherwise, the manager is categorized as not overconfident denoted by a value of 0.

3.2.2 Measurement of firm performance

The dependent variable performance of the firm performance is evaluated using two metrics: firm profitability and firm value. The financial ratio return on assets (ROA) and Tobin's q are utilized as proxies to measure firm performance. ROA is selected as it is recognized as one of the most comprehensive indicators of the operational effectiveness of a firm (Russo & Fouts, 1997). Tobin's q is a widely employed metric for assessing firm valuation. It is derived using the approach outlined by Chung and Pruitt (1994). Here, the book value of total assets is utilized as a proxy for asset replacement cost. Market value is subsequently computed as a summation of market capitalization and the difference between the net worth and the book value of total assets, divided by the book value of total assets. Tobin's q has been employed at length in previous literature to gauge firm market valuation (Albertini, 2013) (Hou, Liu, Fan, & Wei, 2016) (Lech, 2013) (Garg, 2015).

3.2.3 Control variables

In this study, two frequently referenced control variables within the scholarly discourse, Leverage and Company Size, are employed. Leverage denotes the utilization of borrowed capital by a firm. It is quantified through the ratio of total assets to net worth. The incorporation of Leverage in this paper stems from the tendency of overconfident managers to preferentially employ greater debt (Hackbarth, 2008). The Nifty 50 is a benchmark index, embodies the aggregated value of 50 premier Indian corporations listed on the NSE. Company size is integrated as a control variable due to prior

research indicating that larger entities may turn out to be more efficient as they are likely to exploit economies of scale, recruitment of more adept managerial personnel and the institutionalization of procedural frameworks that may be more conducive to enhanced performance (Naik, 2014). We employ natural log of total assets as a proxy for firm size. Enterprise growth is evaluated via the sales growth rate (SG), while firm age (AGE) is calculated as the difference between the observation year and the year of the company's establishment. All data in reference to control variables is obtained from Prowess database. Any gaps in data have been supplemented by figures from annual reports of the respective firms. A concise overview of the pertinent variables is presented in Table I.

Table I.   Variables of the study

Variable	Definition
MOC	Managerial Overconfidence
TQ	Firm Performance as measured by Tobin's q
LEV	Leverage Ratio = total liability/ total asset
SIZE	Firm size = ln(total assets)
ROA	Return on Assets = net income/ total assets
AGE	Firm age
SG	Sales growth rate = $(sale_{t+1} - sale_t)/ sale_t$

3.2.4 Empirical model

The primary techniques and tests used for analyzing data are mentioned as follows:

Variance Inflation Factor (VIF): The aim of this assessment is to evaluate the impact of collinearity among the independent variables within the context of a multiple regression framework. A variance inflation factor of one signifies minimal collinearity, while a value surpassing ten may suggest issues pertaining to multicollinearity within the regression model. Table II presents the outcomes of the VIF examination conducted on the independent variables. Notably, the VIF values associated with each predictor variable fall within permissible thresholds, indicating satisfactory levels of collinearity.

Table II.   Variance Inflation Factor

Test Summary	Independent Variables				
	Managerial OC	Size	Leverage	Firm Age	Sales Growth
Variance Inflation Factor	1.221	1.038	1.175	1.069	1.027

Minimum possible value = 1.0; values >10.0 may indicate a collinearity problem

Panel data regression: Panel data refers to longitudinal data, measuring variables observed across time for a multitude of entities. Although pooled ordinary least squares can be applied to panel data, it may not yield optimal outcomes. The variation across time and cross-sections can be adequately accounted for by introducing a constant or a random variable, thereby leading to the formulation of panel data regression models such as the fixed effects model and the random effects model. To estimate the hypotheses given that the dataset utilized in this study comprises panel data, i.e. 70 firm year observations, panel data regression have been used.

The statistic for firm size is taken as e-based logarithmic (*ln*) form of total assets. The regression models utilized in this study are adapted and refined from previous research conducted by Naik (2014) and Atan et al. (2017). There are two models to check the hypotheses - model 1 test *H1*; model 2 tests *H2*. The model of the study is shown in the following:

$$ROA_{it} = \beta_0 + \beta_1 MOC_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \beta_4 AGE_{it} + \beta_5 SG_{it} + \varepsilon \qquad (1)$$

$$Tq_{it} = \beta_0 + \beta_1 MOC_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \beta_4 AGE_{it} + \beta_5 SG_{it} + \varepsilon \qquad (2)$$

Where: ROA_{it} denotes the dependent variable return on asset for company i in period t; Tq_{it} is the dependent variable Tobin's q for firm i in period t; MOC_{it} denotes the independent variable managerial overconfidence score for firm i in period t; $SIZE_{it}$ is the control variable log of total assets for firm i in period t; LEV_{it} denotes the control variable leverage for firm i in period t; ; AGE_{it} denotes the control log of variable firm age for firm i in period t; ; SG_{it} denotes the control variable sales growth for firm i in period t; and ε is the error term.

Hausman test: In panel data regression analysis, the Hausman test is utilized to ascertain whether a fixed effects or random effects model is more suitable for the analysis. Generally, fixed effects models are deemed suitable when the objective is to estimate the average effect of a variable within a specific group, whereas random effects models are more apt when the aim is to estimate the overall effect of a variable across various groups. Table III provides the outcomes of the Hausman test conducted for the regression models with dependent variables return on assets and Tobin's q. The findings of the Hausman test reveal that the *p* value is statistically insignificant at the 5 percent significance level in both instances. Consequently, the null hypothesis cannot be rejected, indicating that the random effects model is the preferable choice. Consequently, this paper focuses on employing random effect estimators to explicate the findings.

Table III. Hausman Test results

Dependent variable	Test summary	Chi-square statistic	*p* value
Return on Asset	random effects test	9.3542	0.0957
Tobin's q	random effects test	3.7703	0.5829

4. Empirical results

4.1 Descriptive statistics

Table IV summarizes the descriptive statistic of the dependent, independent and the control variable. The mean (median) managerial overconfidence scores of the sample are 0.057 (0.000) whereas those for the financial performance as measured through Return on asset and Tobin's q are 10.873 (9.270) and 5.014 (3.170) respectively. Descriptive statistics for control variables are presented next with a mean (median) of 2.100 (1.770) for leverage; 5.809 (5.865) for firm size; 1.686 (1.623) for age of the firm and 0.277 (0.202) for sales growth.

Table IV. Descriptive statistics

	Mean	Median	SD	Minimum	Maximum
Dependent variables					
Return on asset	10.873	9.270	8.295	-2.730	32.020
Tobin's q	5.014	3.170	4.436	0.860	21.540
Independent variables					
Managerial Overconfidence	0.057	0.000	0.234	0.000	1.00
Control variables					
Leverage	2.100	1.770	0.865	1.130	4.420
Size	5.809	5.865	0.509	4.800	6.950
Age	1.686	1.623	0.210	1.360	2.060

Sales Growth	0.277	0.202	0.277	-0.140	1.510

4.2 Correlation results

Table V presents the Pearson correlation matrix. Over confidence score of firm is not significantly correlated with return on assets or with Tobin's q. Overconfidence is significantly correlated with leverage supporting the view in literature that the biased behaviour of overconfident mangers leads to higher leverage Mundi & Kaur (2022). So far as the association between financial performance variables and the regressed parameters is concerned the correlation results are inconclusive. The results of the Variance Inflation Factor (VIF) test for the predictor variables are displayed in Table II. The value for each predictor variable is well within the adequate upper limit signifying absence of any multicollinearity issue.

Table V. Pearson correlation matrix

	ROA	Tobin's q	MOC	Leverage	Size	Firm Age	Sales Growth
ROA	1						
Tobin's q	.648**	1					
MOC	-.195	-.146	1				
Leverage	-.311**	.119	.359**	1			
Size	-.350**	-.633**	.156	.153	1		
Firm Age	.136	.063	-.220	-.100	-.045	1	
Sales Growth	-.040	-.042	.070	.132	.057	-.103	1

* indicate correlation significance at the .05 level and ** indicates correlation is significant at the .01 level.

4.3 Regression results

Tables VI and VII provide a synthesis of the outcomes derived from the random effects panel regression model, delineating the dependent variables ROA and Tobin's q, respectively. The estimated coefficients, z-statistics, and p values as shown in Table VI for dependent variable ROA and Table VII for dependent variable Tobin's q, are obtained through the random effects model. The coefficient column elucidates the extent to which the independent variable influences the variation in the dependent variable, holding constant the other predictor variables.

Table VI. Random-effects (GLS), dependent variable: ROA

	Coefficient	Std. Error	z	p value	
Constant	38.067	13.654	2.788	0.005	***
MOC	3.726	1.455	2.561	0.011	**
Leverage	−2.125	1.371	−1.550	0.121	
Size	−4.716	2.510	−1.879	0.060	*
Firm Age	0.048	0.049	0.986	0.324	
Sales Growth	6.679	2.423	2.756	0.006	***
Mean dependent var	10.873		SD dependent var	8.294	
Sum squared resid	4109.746		SE of regression	7.952	

Log-likelihood	−241.867	Akaike criterion	495.735
Schwarz criterion	509.226	Hannan-Quinn	501.093
rho	−1.000	Durbin-Watson	1.840

p value is *, **, and *** denote the significance at 10%, 5%, and 1% level, respectively.

The value of coefficient read with the p value indicates a significant positive relation at 0.05 levels between the managerial overconfidence scores on the dependent variables ROA. In addition size of the firm as well as sales growth also has a significant relation. As compared to this, the control variables, firm age and leverage do not materially affect the dependent variable ROA. In relation to Tobin's q which is a widely tested metric used as a proxy for firm value, there is a negative and insignificant relation between managerial confidence scores on the dependent variable Tobin's q. In addition size of the firm as well as leverage also has a significant relation.

As compared to this, the control variables firm age and sales growth do not materially affect the dependent variable Tobin's q. The relationship of the dependent and the predictor variable, as established through the model, is represented through the following equations:-

$$ROA_{it} = 38.1 + (3.73)\,MOC_{it} + (-2.13)\,LEV_{it} + (-4.72)\,Size_{it} + (0.0482)\,AGE_{it} + (6.68)\,SG_{it} + \varepsilon_{it}$$

$$Tobin's\,q_{it} = 41.7 + (-1.55)\,MOC_{it} + (1.19)\,LEV_{it} + (-6.78)\,Size_{it} + (0.004)\,AGE_{it} + (0.080)\,SG_{it} + \varepsilon_{it}$$

Table VII. Random-effects (GLS), dependent variable: Tobin's q

	Coefficient	Std. Error	Z	p value	
Constant	41.739	6.358	6.565	<0.0001	***
MOC	−1.549	0.9702	−1.597	0.1103	
Leverage	1.189	0.491	2.422	0.0154	**
Size	−6.780	1.066	−6.358	<0.0001	***
Firm Age	0.004	0.022	0.193	0.847	
Sales Growth	0.080	0.727	0.111	0.912	
Mean dependent var	5.014		SD dependent var	4.436	
Sum squared resid	751.328		SE of regression	3.400	
Log-likelihood	−182.393		Akaike criterion	376.786	
Schwarz criterion	390.277		Hannan-Quinn	382.145	
rho	−1.000		Durbin-Watson	1.923	

p value is *, **, and *** denote the significance at 10%, 5%, and 1% level, respectively.

5. Conclusion

Managers' decisions exert a direct influence on the wealth of a company's shareholders. Nonetheless managerial choices may not always align with rationality potentially leading to adverse repercussions on firm value and consequently shareholder wealth. Therefore, this study aims to explore the impact of managerial overconfidence on the valuation of firms listed on the NSE specifically for the years 2022 and 2023. The findings of this investigation reveal a significant association between managerial overconfidence and firm value gauged by the accounting metric of return on assets for companies listed on the Nifty 50. These results hold considerable significance for diverse stakeholders suggesting that a manager's inclination towards overconfident behavior correlates positively with the firm's performance under their management. This assertion finds support in the research conducted by Burkhard et al. (2023), which suggests that

overconfident managers can notably enhance a company's performance owing to their propensity for swift decision-making and innovation. Similarly, Mundi & Kaur (2019) assert that overconfident managers surpass market expectations by elevating a firm's investment from suboptimal levels to optimal ones

Subsequent research endeavours could concentrate on exploring the phenomenon of managerial overconfidence in nations beyond India, particularly within emerging economies. The Nifty 50 index is an amalgamation of the 50 biggest companies in terms of their market capitalisation. Further research can be carried out in small and medium sized firms. Furthermore since there is currently no universally accepted measure of overconfidence among managers additional research is required to develop a reliable and widely acknowledged metric for assessing managerial overconfidence.

Bibliography

[1] Ackert, Lucy, and Richard Deaves. *Behavioral Finance: Psychology, Decision-Making, and Markets*. Cengage Learning, 2009.

[2] Albertini, Elisabeth. "Does Environmental Management Improve Financial Performance? A Meta-Analytical Review." *Organization & Environment*, vol. 26, no. 4, 2013, pp. 431–57.

[3] Atan, Roshima, et al. "The Impacts of Environmental, Social, and Governance Factors on Firm Performance: Panel Study of Malaysian Companies." *Management of Environmental Quality: An International Journal*, vol. 29, no. 2, 2017, pp. 1825–94.

[4] Bardhan, Ashok R. "Indian Economy: 2023 Wrapped." *Observer Research Foundation*, 2 Jan. 2024, www.orfonline.org/expert-speak/indian-economy-2023-wrapped.

[5] Burkhard, Benjamin, et al. "Nothing Ventured, Nothing Gained: A Meta-Analysis of CEO Overconfidence, Strategic Risk Taking, and Performance." *Journal of Management*, vol. 49, no. 8, 2023, pp. 2629–666.

[6] Chung, Kee H., and Stephen W. Pruitt. "A Simple Approximation of Tobin's Q." *Financial Management*, 1994, pp. 70–74.

[7] Fairchild, Richard. "The Effect of Managerial Overconfidence, Asymmetric Information, and Moral Hazard on Capital Structure Decisions." *ICFAI Journal of Behavioral Finance*, vol. 2, no. 4, 2005.

[8] Galasso, Alberto, and Timothy S. Simcoe. "CEO Overconfidence and Innovation." *Management Science*, vol. 57, no. 8, 2011, pp. 1469–84.

[9] Gao, Yongqiang, and Kyong S. Han. "Managerial Overconfidence, CSR and Firm Value." *Asia-Pacific Journal of Accounting & Economics*, vol. 29, no. 6, 2022, pp. 1600–1618.

[10] Garg, Pooja. "Impact of Sustainability Reporting on Firm Performance of Companies in India." *International Journal of Marketing & Business Communication*, vol. 4, no. 3, 2015, pp. 38–45.

[11] Gervais, Simon, et al. "Overconfidence, Compensation Contracts, and Capital Budgeting." *The Journal of Finance*, vol. 66, no. 5, 2011, pp. 1735–777.

[12] Goel, Anand M., and Anjan V. Thakor. "Overconfidence, CEO Selection, and Corporate Governance." *The Journal of Finance*, vol. 63, no. 6, 2008, pp. 2737–784.

[13] Habib, Ahsan, and Mohammad Hossain. "CEO/CFO Characteristics and Financial Reporting Quality: A Review." *Research in Accounting Regulation*, vol. 25, no. 1, 2013, pp. 88–100.

[14] Hackbarth, Dirk. "Managerial Optimism, Overconfidence, and Capital Structure Decisions." *European Finance Association Annual Meeting*, 2002, Maastricht, The Netherlands.

[15] Hackbarth, Dirk. "Managerial Traits and Capital Structure Decisions." *Journal of Financial and Quantitative Analysis*, vol. 43, no. 4, 2008, pp. 843–81.

[16] Hayward, Mathew L. A., and Donald C. Hambrick. "Explaining the Premiums Paid for Large Acquisitions: Evidence of CEO Hubris." *Administrative Science Quarterly*, vol. 42, no. 1, 1997, pp. 103–27.

[17] Heaton, J. B. "Managerial Optimism and Corporate Finance." *Financial Management*, vol. 31, no. 2, 2002, pp. 33–45.

[18] Hilary, Gilles, et al. "The Bright Side of Managerial Over-Optimism." *Journal of Accounting and Economics*, vol. 62, no. 1, 2016, pp. 46–64.

[19] Hirshleifer, David, et al. "Are Overconfident CEOs Better Innovators?" *The Journal of Finance*, vol. 67, no. 4, 2012, pp. 1457–1498.

[20] Hou, Minghui, et al. "Does CSR Practice Pay Off in East Asian Firms? A Meta-Analytic Investigation." *Asia Pacific Journal of Management*, vol. 33, no. 1, 2016, pp. 195–228.

[21] Jain, Jitesh, et al. "Mapping the Field of Behavioural Biases: A Literature Review Using Bibliometric Analysis." *Management Review Quarterly*, 2021, pp. 1–33.

[22] Johnson, Dominic D. P., and James H. Fowler. "The Evolution of Overconfidence." *Nature*, vol. 477, no. 7364, 2011, pp. 317–20.

[23] Kahneman, Daniel, and Amos Tversky. "Prospect Theory: An Analysis of Decision under Risk." *Econometrica*, vol. 47, no. 2, 1979, pp. 263–91.

[24] Killins, Ryan N., et al. "Goodwill Impairment and CEO Overconfidence." *Journal of Behavioral and Experimental Finance*, vol. 29, 2021, Article 100459.

[25] Kumar, Satish, and Nisha Goyal. "Behavioural Biases in Investment Decision Making – A Systematic Literature Review." *Qualitative Research in Financial Markets*, vol. 7, no. 1, 2015, pp. 88–108.

[26] Lech, Anna. "Corporate Social Responsibility and Financial Performance: Theoretical and Empirical Aspects." *Comparative Economic Research*, vol. 16, no. 3, 2013, pp. 49–62.

[27] Lin, Yung-Ho, et al. "Testing Pecking Order Prediction from the Viewpoint of Managerial Optimism: Some Empirical Evidence from Taiwan." *Pacific-Basin Finance Journal*, vol. 16, no. 1–2, 2008, pp. 160–81.

[28] Ludwig, Stefan, and Julia Nafziger. "Beliefs about Overconfidence." *Theory and Decision*, vol. 70, no. 4, 2011, pp. 475–500.

[29] Malmendier, Ulrike, and Geoffrey Tate. "Who Makes Acquisitions? CEO Overconfidence and the Market's Reaction." *Journal of Financial Economics*, vol. 89, no. 1, 2008, pp. 20–43.

[30] Merkle, Charles, and Martin Weber. "True Overconfidence: The Inability of Rational Information Processing to Account for Apparent Overconfidence." *Organizational Behavior and Human Decision Processes*, vol. 116, no. 2, 2011, pp. 262–71.

[31] Mundi, Harpreet Singh, and Prabhjot Kaur. "Impact of CEO Overconfidence on Firm Performance: An Evidence from S&P BSE 200." *Vision*, vol. 23, no. 3, 2019, pp. 234–43.

[32] ---. "CEO Overconfidence and Capital Structure Decisions: Evidence from India." *Vikalpa*, vol. 47, no. 1, 2022, pp. 19–37.

[33] Naik, Pooja. "R&D Intensity and Market Valuation of Firm: A Study of R&D Incurring." *Journal of Studies in Dynamics and Change*, vol. 1, no. 7, 2014, pp. 295–308.

[34] Nemeth, Charlan Jeanne. *The Psychological Basis of Quality Decision Making*. UC Berkeley: Institute for Research on Labor and Employment, 2012. eScholarship, http://escholarship.org/uc/item/84f0q6jj#.

[35] Oskamp, Stuart. "Overconfidence in Case-Study Judgments." *Journal of Consulting Psychology*, vol. 29, no. 3, 1965, pp. 261–65.

[36] Pallier, Gerry, et al. "The Role of Individual Differences in the Accuracy of Confidence Judgments." *Journal of General Psychology*, vol. 129, no. 3, 2002, pp. 257–99.

[37] Peón, David, et al. "Overconfidence and Risk Seeking in Credit Markets: An Experimental Game." *Review of Managerial Science*, vol. 10, no. 3, 2016, pp. 511–52. https://doi.org/10.1007/s11846-015-0166-8.

[38] Phung, Alice. "Behavioral Finance." *Investopedia*, 2002, http://www.investopedia.com/university/behavioral_finance/.

[39] Pompian, Michael. *Behavioral Finance and Wealth Management: How to Build Optimal Portfolios That Account for Investor Biases*. Vol. 667, Wiley, 2012.

[40] Ren, Yuqing, and Rachel Croson. "Overconfidence in Newsvendor Orders: An Experimental Study." *Management Science*, vol. 59, no. 11, 2013, pp. 2502–17.

[41] Ricciardi, Victor, and Helen K. Simon. "What Is Behavioral Finance?" *Business, Education and Technology Journal*, 2000, pp. 1–9.

[42] Roll, Richard. "The Hubris Hypothesis of Corporate Takeovers." *Journal of Business*, vol. 59, no. 2, 1986, pp. 197–216.

[43] Russo, Michael V., and Paul A. Fouts. "A Resource-Based Perspective on Corporate Environmental Performance and Profitability." *Academy of Management Journal*, vol. 40, no. 3, 1997, pp. 534–59.

[44] Schrand, Catherine M., and Sarah L. Zechman. "Executive Overconfidence and the Slippery Slope to Financial Misreporting." *Journal of Accounting and Economics*, vol. 53, no. 1–2, 2012, pp. 311–29.

[45] Simon, Marc, and Scott M. Houghton. "The Relationship between Overconfidence and the Introduction of Risky Products: Evidence from a Field Study." *Academy of Management Journal*, vol. 46, no. 2, 2003, pp. 139–49.

[46] Skala, Dorota. "Overconfidence in Psychology and Finance – An Interdisciplinary Literature Review." *Bank i Kredyt*, no. 4, 2008, pp. 33–50.

[47] Thaler, Richard, et al. "The Effect of Myopia and Loss Aversion on Risk Taking: An Experimental Test." *The Quarterly Journal of Economics*, vol. 112, no. 2, 1997, pp. 647–61.

[48] Weinstein, Neil D. "Unrealistic Optimism about Susceptibility to Health Problems." *Journal of Behavioral Medicine*, vol. 5, no. 4, 1982, pp. 441–60.

[49] Wolosin, Robert J., et al. "Effects of Cooperation and Competition on Responsibility Attribution after Success and Failure." *Journal of Experimental Social Psychology*, vol. 9, no. 3, 1973, pp. 220–35.

[50] Ye, Baojiang, and Jin Yuan. "Firm Value, Managerial Confidence, and Investments: The Case of China." *Journal of Leadership Studies*, vol. 2, no. 3, 2008, pp. 26–26.