

A META-ANALYTIC APPROACH TO UNDERSTANDING THE EFFECTS OF CEO OVERCONFIDENCE ON FIRM PERFORMANCE

BARBARA BURKHARD
University of St.Gallen
Dufourstrasse 40a, 9000 St.Gallen, Switzerland

CHARLOTTA SIRÉN
University of St.Gallen, Switzerland

MARC VAN ESSEN
University of South Carolina, US

DIETMAR GRICHNIK
University of St.Gallen, Switzerland

ABSTRACT

An open research question in behavioral decision theory is whether CEO overconfidence—one of the most prevalent biases—has positive or negative effects on firm performance. This study uses a meta-analytic technique to show that the relationship between CEO overconfidence and firm performance is positive and moderated by managerial discretion.

INTRODUCTION

CEO overconfidence, an inaccurate and overly positive perception that CEOs have of their ability or knowledge, is one of the most common and powerful cognitive biases in managerial decision making (e.g., Bazerman & Moore, 2013; Li & Tang, 2010; Moore & Healy, 2008; Navis & Ozbek, 2016). Research in a variety of disciplines has long claimed that overconfidence is a dysfunctional attribute of CEOs that leads to detrimental consequences for firm outcomes, such as value destruction through unprofitable mergers and suboptimal investment behavior (Hayward & Hambrick, 1997; Malmendier & Tate, 2008), illegal activities (e.g., Mishina, Dykes, Block, & Pollock, 2010), and errors in strategic planning (e.g., Ren & Croson, 2013). Despite the predominantly negative connotations associated with overconfidence, scholars have started to paint CEO overconfidence in a more positive light. For example, studies show that overconfidence can also lead to favorable firm outcomes, such as innovativeness (e.g., Galasso & Simcoe, 2011) or the introduction of pioneering products (e.g., Simon & Houghton, 2003).

Although considerable effort has been devoted to investigating the effect of CEO overconfidence on firm outcomes, overall conclusions on the performance implications of CEO overconfidence remain scarce. Therefore, the key question that we aim to answer with this meta-analysis is: *How does CEO overconfidence relate to a firm's performance?* The gap in the extant research is especially notable because overconfidence provides a particularly useful lens for understanding how CEOs shape the fate of their firms (Chatterjee & Hambrick, 2007; Hiller & Hambrick, 2005). Moreover, the upper echelons perspective claims that a firm's strategy and performance are a reflection of its top managers (Carpenter, Geletkanycz, & Sanders, 2004;

Finkelstein & Hambrick, 1996; Hambrick & Mason, 1984). Consensus has been difficult to achieve because prior studies have almost exclusively examined either the negative or the positive side of overconfidence, but have neglected to consider the overall effect of CEO overconfidence on firm performance by taking both sides into account.

Because of their idiosyncratic way of making strategic decisions, overconfident CEOs tend to deliver extreme performance outcomes in the form of either extreme losses or extreme wins (Hiller & Hambrick, 2005; Picone, Dagnino, & Minà, 2014). Therefore, it is crucial to understand the *contexts* in which such extreme performance implications are more likely to occur. Thus, we examine managerial discretion—the latitude of managerial action—as a potential moderator in order to understand the contexts in which CEO overconfidence has a stronger or weaker effect on firm performance. By introducing managerial discretion as a boundary condition, we seek to achieve a more fine-grained and contextualized understanding of the relationship between CEO overconfidence and firm performance.

THEORETICAL BACKGROUND AND DEVELOPMENT OF HYPOTHESES

Theoretical Framework

For the overall prediction of our theoretical model, we draw on behavioral decision theory, which is a descriptive theory of human decision making that explains how individuals actually make decisions in contrast to normative theories of decision making that suggest how individuals should ideally make decisions (Edwards, 1961; Slovic, Fischhoff, & Lichtenstein, 1977). The predominant view of behavioral decision theory emphasizes the negative side of heuristics and biases (Tversky & Kahneman, 1973). According to this view, because humans have internal cognitive limitations, they systematically deviate from rational norms and statistical principles when making decisions. These violations are interpreted as fallacies or errors that lead to inferior decisions because optimal solutions are determined by rational choice (Loock & Hinnen, 2015).

In contrast, another tradition in decision-making theory emphasizes the positive side of heuristics and biases (e.g., Busenitz & Barney, 1997; Das & Teng, 1999; Gigerenzer, Todd, & Group, 1999; Navis & Ozbek, 2016). According to this view, heuristics and biases can be superior decision-making strategies when decisions are ill-structured and complex. This view builds on the premise that rational models work only in situations with perfect information and perfect information-processing capabilities. In situations in which some information is unknown and information-processing capabilities are limited, rational models do not provide superior solutions. Under such conditions, decisions can be accurately made through the use of mental shortcuts (e.g., Gigerenzer & Gaissmaier, 2011).

The Main Effect of CEO Overconfidence on Firm Performance

Building on the above-mentioned assumptions of how CEO overconfidence influences strategic decision-making processes and choices, there are reasons to expect both a negative and a positive relationship between CEO overconfidence and firm performance. Given the predominant view in behavioral decision theory that CEO overconfidence is an unfavorable characteristic, there are three main reasons to expect CEO overconfidence to have a negative effect on firm performance. First, overconfident CEOs tend to make less comprehensive strategic

decisions (Hiller & Hambrick, 2005). Second, overconfidence can lead to strategic persistence (Audia, Locke, & Smith, 2000; Hayward, Rindova, & Pollock, 2004; Hiller & Hambrick, 2005). Third, overconfident CEOs can be expected to engage in excessive risk taking (Camerer & Lovallo, 1999; Kahneman & Lovallo, 1993; Li & Tang, 2010).

The more positive view on biases suggests that there are three reasons to expect CEO overconfidence to be beneficial for firm performance. First, overconfident CEOs tend to make decisions relatively quickly (Gigerenzer & Gaissmaier, 2011). Second, CEO overconfidence is associated with a higher propensity to innovate (Galasso & Simcoe, 2011; Hirshleifer, Low, & Teoh, 2012; Tang, Li, & Yang, 2015). Finally, overconfident CEOs tend to develop an inspirational and stimulating vision (Picone et al., 2014; Resick, Whitman, Weingarden, & Hiller, 2009; Shipman & Mumford, 2011). We propose two competing hypotheses that reflect both facets of CEO overconfidence:

Hypothesis 1a: CEO overconfidence is negatively related to a firm's performance.

Hypothesis 1b: CEO overconfidence is positively related to a firm's performance.

The Moderating Role of Managerial Discretion

The extent to which CEO overconfidence influences firm performance may depend on the CEO's degree of discretion. The excessive losses or profits stemming from overconfidence are more likely to occur in contexts where CEOs have fewer constraints on strategic decision-making processes and a wider variety of strategic options, which give them more leeway to imprint their personal inclinations on firm strategy and performance (Finkelstein & Boyd, 1998; Hambrick & Finkelstein, 1987). In this study, we concentrate on organizational aspects (i.e., CEO power and organizational inertia) and country-level aspects (i.e., national institutions) of managerial discretion as moderators of the relationship between CEO overconfidence and firm performance.

Moderating effect of CEO Power. A CEO's power may strengthen the performance effect of overconfidence (Picone et al., 2014). The power of the CEO allows the CEO's preferences to influence a range of major strategic decisions in the organization (Adams, Almeida, & Ferreira, 2005). When overconfident CEOs are powerful relative to other directors, they can enact their own will and avoid compromises. In addition, the weakness in the board's monitoring ability due to CEO power allows overconfident CEOs to advance their personal preferences in a relatively unchecked manner (Hambrick, 2007; Wangrow, Schepker, & Barker III, 2015). Therefore, we propose the following hypotheses:

Hypothesis 2a: The negative relationship between CEO overconfidence and firm performance is stronger in firms in which the managerial discretion provided by CEO power is high.

Hypothesis 2b: The positive relationship between CEO overconfidence and firm performance is stronger in firms in which the managerial discretion provided by CEO power is high.

Moderating Effect of Organizational Inertia. Organizational inertia can preclude CEOs' discretionary choices and, thereby, weaken the effect of CEO overconfidence on performance. In relatively new firms that are smaller in size, CEOs can easily and quickly implement changes. However, the possibility of change decreases exponentially as the inertia that accompanies growth in firm size and age increases (Hambrick & Finkelstein, 1987). CEOs of larger organizations may find it more difficult to initiate change due to more complex organizational contexts and increased spatial separation (Vaccaro, Jansen, Van Den Bosch, & Volberda, 2012). CEOs of older organizations are likely to encounter resistance to change due to organizational path dependencies, such as established organizational routines and limited exploratory search behaviors (Lavie & Rosenkopf, 2006; Li & Tang, 2010; Nelson & Winter, 1982). We therefore expect the negative or positive impact of CEO overconfidence on firm performance to be weaker when the organization is inert:

Hypothesis 3a: The negative relationship between CEO overconfidence and firm performance is weaker in firms in which managerial discretion is limited by organizational inertia.

Hypothesis 3b: The positive relationship between CEO overconfidence and firm performance is weaker in firms in which managerial discretion is limited by organizational inertia.

Moderating Effect of Country-level Institutions. CEOs in countries with fewer institutional constraints have a greater effect on firm performance (Crossland & Hambrick, 2007, 2011). In national contexts where managerial discretion is high owing to strong formal or informal institutions, overconfident CEOs can more easily make overambitious and risky strategic moves. This is because decision making in high-discretion national contexts is shifted away from the administrative bureaucracy towards the CEO, leaving stakeholders unable to block objectionable actions that overconfident CEOs might pursue. In addition, because social conventions, norms, and values are not widely enforced, these societies have a broader zone of acceptance for executives' overconfident behavior (Crossland & Hambrick, 2011; Hambrick, 2007). Therefore, we propose the following hypotheses:

Hypothesis 4a: The negative relationship between CEO overconfidence and firm performance is stronger in countries in which the managerial discretion provided by institutions is high.

Hypothesis 4b: The positive relationship between CEO overconfidence and firm performance is stronger in countries in which the managerial discretion provided by institutions is high.

METHODS

Sample and Coding

To identify all relevant articles investigating the relationship between CEO overconfidence and firm performance, we used three complementary search strategies. These

search strategies yielded a final sample of 182 primary studies (70 unpublished articles, 112 published articles) from 16 countries. Our data contained 530 bivariate observations and 1,691 partial observations. We read all of the articles and developed a coding protocol (Lipsey & Wilson, 2001) to extract data on all relevant variables and study characteristics.

Meta-analytical Procedure

We used two methodological procedures to test our hypotheses. First, to measure whether the relationship between CEO overconfidence and firm performance is statistically significant and to test Hypotheses 1a and 1b, we used a random effect Hedges-Olkin type meta-analysis (HOMA). We included both Pearson product-moment correlations (r) and partial correlation coefficients ($r_{xy.z}$) as effect sizes. In order to obtain an appropriate estimate of the meta-analytic mean effect size, the differences in precision across effect sizes and the variability in the population of effects must be taken into account (Lipsey & Wilson, 2001).

Second, to test Hypotheses 2 through 4, we used a random effect meta-analytic regression analysis (MARA; Lipsey & Wilson, 2001). MARA is a weighted least-squares technique, which seeks to model previously unexplained variance in the effect size distribution (Lipsey & Wilson, 2001). With MARA, we tested the robustness of our model against a number of moderator variables that were not included in primary studies. We used weighted regression to account for differences in precision across effect sizes.

RESULTS

The HOMA results show that CEO overconfidence has a small but statistically significant positive effect on firm performance for both the bivariate and partial correlations (r -based mean = 0.04, $p < 0.00$; $r_{xy.z}$ -based mean = 0.01, $p < 0.00$). Thus, Hypothesis 1a, which predicts a negative relationship between CEO overconfidence and firm performance, is rejected in favor of Hypothesis 1b, which predicts a positive relationship.

The MARA analysis shows that the coefficient estimate for CEO power is not statistically significant ($\beta = 0.00$, $p < \text{n.s.}$). Hence, neither Hypothesis 2a nor Hypothesis 2b is supported. The results show that the coefficient estimate for organizational inertia is negative and statistically significant ($\beta = -0.01$; $p < 0.05$). Therefore, we reject Hypothesis 3a. These results confirm the competing Hypothesis 3b, which states that the positive relationship between CEO overconfidence and firm performance is weaker in firms in which organizational inertia is high. The coefficient estimate for country-level institutions is statistically significant and positive, suggesting that CEO overconfidence has a stronger positive effect on firm performance when the managerial discretion provided by country-level institutions is high ($\beta = 0.02$, $p < 0.01$). This result confirms Hypothesis 4b and leads us to reject Hypothesis 4a.

CONCLUSION

How does CEO overconfidence relate to firm performance? How does managerial discretion affect this relationship? Although a vast body of research across many different disciplines and theoretical viewpoints has been devoted to understanding the effect of CEO overconfidence, there is no clear answer to these important and timely questions. Based on the results of our meta-analysis, our main conclusion is that CEO overconfidence is not always

detrimental. Instead, our results suggest that overconfidence can have beneficial effects on firm performance. Prior studies on CEO overconfidence have mainly built on the traditional view of behavioral decision theory (Gilovich, Griffin, & Kahneman, 2002; Tversky & Kahneman, 1974), which portrays cognitive biases, such as overconfidence, as an inimical attribute. Our findings extend and challenge this stream of research by showing that CEO overconfidence has a small but significant positive effect on firm performance.

This study is the first to systematically investigate the relationship between both sides of CEO overconfidence and firm performance using a meta-analytic technique. We thereby extend the extant literature by providing a theoretically grounded framework that elucidates how an overconfident CEO can influence strategic decision-making processes, strategic choices and, ultimately, firm performance. In so doing, we are able to integrate various theoretical arguments found in the CEO overconfidence literature.

Furthermore, we applied the managerial-discretion framework to the CEO overconfidence phenomenon and tested the framework on a large scale using meta-analytical techniques. Our primary conclusion is that in attempts to understand the strength of the effect of CEO overconfidence on firm performance, managerial discretion must be taken into consideration as a crucial moderator.

REFERENCES AVAILABLE FROM THE AUTHORS