How Overconfidence Affects CEOs' Investment Decisions

By Guoli Chen , INSEAD

In uncertain climates, overconfident CEOs tend to invest less in assets that allow a firm to maintain strategic flexibility compared to non-overconfident CEOs.

CEOs are often tasked with making decisions that have a sizable impact on their firms – be it now or in the future. Their leadership becomes even more critical in times of volatility when they are faced with choices that could determine whether their organisation survives beyond this uncertain period.

In this scenario, many CEOs turn to **real options** investing. This practice can be likened to a financial option in that it gives an investor the right – but not the obligation – to purchase or sell a valuable asset at a future time and a certain price. These tangible assets can include new technology, new products, foreign subsidiaries or production facility assets.

When firms face uncertainty, real options theory emphasises that they should explore potential opportunities, minimise initial commitments and maintain strategic flexibility. They should collect new information as the investment surroundings evolve and proceed to reallocate their investments based on what comes to light. By maintaining optionality instead of making irreversible, upfront commitments, this approach allows a firm to preserve a degree of flexibility for the future amid a volatile climate.

However, real options theory hinges on the strict assumption of optimal decision-making. It does not account for the fact that the individuals making these decisions may be cognitively biased, especially when performing under uncertainty, and may therefore not make the most rational choice.

Tendencies of overconfident CEOs

In our **recent research**, my co-authors **Joon Mahn Lee** (Seoul National University), **Jung Chul Park** (University of South Florida) and I explore a specific type of cognitive bias: overconfidence, which is the tendency to overestimate one's own abilities.

Overconfident people typically exhibit optimism either in their capabilities or about their predictions. They are more likely than non-overconfident individuals to go full steam ahead on what they have identified as an opportunity worth pursuing, rather than hedge their bets. Therefore, we predicted that compared to non-overconfident peers, overconfident CEOs would invest less in reversible commitments (such as real options) and make more irreversible commitments.

We further hypothesised that overconfident CEOs would be even less inclined to invest in real options when market uncertainty is higher. This is because if the level of market uncertainty is relatively low, all CEOs would have less of a need to make real options investments and would be more likely to make eventual and irreversible commitments. In this scenario, the value of strategic flexibility is limited for both overconfident and non-overconfident CEOs.

However, when the level of market uncertainty is high, CEOs would differ in their predictions about future uncertainty, and cognitive biases such as overconfidence would have a stronger effect. Overconfident CEOs would invest less in real options as they either underestimate the level of uncertainty or are less likely to identify their firm's situation as being uncertain. This contrasts with non-overconfident CEOs, who would prioritise making choices that give them the strategic flexibility to adjust to changing market conditions and reallocate their investments accordingly.

The effect of overconfidence

For our study, we obtained data on United States public firms in a 17-year period from 1997 through 2013. Besides looking at the relationship between CEO overconfidence and real options investment, we also investigated the tendency of firms to make alliances vs. mergers and acquisitions as an alternative measure of real options intensity.

While **mergers and acquisitions** are irreversible investments that require an upfront commitment, alliances allow both parties to reserve a degree of flexibility in case the partnership doesn't turn out to be promising or if things go south. These alliances could be joint ventures, equity alliances or non-equity alliances, such as licensing arrangements and research collaborations. To determine how overconfident CEOs handle the choice between these options, we devised a measure of investment flexibility: the number of alliances made by a firm minus that of mergers and acquisitions.

Consistent with our hypothesis, our results showed that overconfident CEOs typically make lower real options investments than non-overconfident CEOs. Additionally, we found that investment flexibility was considerably lower for overconfident CEOs, meaning that they tend to make more mergers and acquisitions compared to alliances. Both these effects were exacerbated in the presence of higher market uncertainty.

Implications for firms

Our study contributes to the real options literature by being one of the first to incorporate the cognitive biases of decision-makers into real options theory. Although real options reasoning provides an effective framework to deal with future uncertainties, CEOs face a huge amount of difficulty when attempting to optimally execute real options investments due to a lack of information or their own cognitive biases.

Our findings suggest that overconfidence will impede rational evaluation of the magnitude and severity of uncertainty. This leads overconfident CEOs to disregard the significance of the uncertainty, place a lower value on the firm-level strategic flexibility that real options provide and invest less in their real options portfolio. Our results also show that overconfident CEOs are more likely to make full commitments under uncertainty, whereas non-overconfident CEOs are more likely to maintain strategic flexibility (and are less likely to make full commitments) under these conditions.

However, this does not mean that overconfidence is a wholly negative trait or that every single overconfident CEO will deliver bad performances in an uncertain climate. Overconfident CEOs are more likely to bring performance extremes or higher performance volatility to the organisation, and there are situations in which their overconfidence can pay off in a big way. However, firms with overconfident CEOs need to be prepared for very bad performance if the environment proves unfavourable to the CEO’s big bet or investment commitment.

Compared to having a non-overconfident CEO at the helm, boards of organisations managed by overconfident CEOs will likely **need to be more involved**, especially if the firm is operating in an environment that is more dynamic or volatile (think high-tech industries). The board may need to take on a more sophisticated and dynamic role in terms of monitoring and advising, staying vigilant to avoid downside risk while maintaining upside potential. Additionally, it will be important for the board not to constrain or suppress the CEO’s efforts too much, as this may mitigate the positive effects that their overconfidence can bring.

Find article at
https://knowledge.insead.edu/strategy/how-overconfidence-affects-ceos-investment-decisions

About the author(s)

Guoli Chen is a Professor of Strategy at INSEAD. His research focuses on the influence of CEOs, top executives, and boards of directors on firms' strategic choices and organisational outcomes, as well as the interaction and dynamics in the top management team and CEO-board relationships.

About the research

"**A cognitive perspective on real options investment: CEO overconfidence**" is published in *Strategic Management Journal*.