THE OVERCONFIDENCE BIAS AND CEO: A LITERATURE OVERVIEW

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Abstract: This systematic review deals the overconfidence bias. It is a cognitive bias which is described as the tendency of people to overestimate their abilities, prospects and chances of success. For the purpose of the research we chose to examine the influence of overconfidence bias on CEOs' decision-making and their work in a company. The systematic review followed three main situations revealing CEOs' overconfidence within a company – dividend policy, innovative processes and hiring new employees. According to the review of the literature, there is no obvious connection between CEOs' overconfidence and a generous dividend policy. However, as for the innovative processes, it seems that overconfident CEOs are more willing to support a higher number of innovations. In the final situation, the literature does not yet provide decisive guidance on the relationship between CEOs' overconfidence and the process of managing employees and hiring new ones.

Keywords: CEO, decision-making, overconfidence bias, top management teams

JEL Classification: D21, L20, D70

INTRODUCTION

Human decision-making is often influenced by various types of heuristics, i.e. simple rules of thumb, and resulting biases that might make a judgment worse. One of these biases is overconfidence, which is described (Kahneman, 2011) as the most serious type of bias due to the fact that people's judgement is very susceptible to it. Siwar (2011) states that overconfidence is often defined as the tendency of individuals to overestimate the precision of the available information. The overconfidence bias may affect all spheres of our lives including important decisions in a company, with a significant impact on areas such as investments or other managerial decisions (Prims and Moore, 2017). That is the reason why it is important to pay attention to this type of bias and to make an effort to find appropriate ways to prevent people from being overconfident, as overconfidence might adversely affect their judgement during the decision-making process. The importance of this issue is further strengthened by the fact that experts are victims of overconfidence too, as is pointed out by Dobelli (2013).

Overconfidence in relation to decision-making and economics was probably used for the first time by Adams and Adams (1960). Moore and Healy's (2008) study divides it into three types. The first type is called overestimation and refers to situations when a person overestimates her or his abilities. The next type of overconfidence bias is named better-than-average or overplacement. It is a person's belief that she or he is better than average. The last type of overconfidence bias is overprecision. In this case, a person's confidence is expressed using numbers, usually with unrealistic percentages or intervals. Other used forms of overconfidence (Herz et. al., 2014) are overoptimism (a tendency to overestimate one's chances of success) and judgemental overconfidence (a tendency to overestimate the precision of information).

When studying this concept on subjects within a company, then in the case of a company's founders, the overconfidence bias may influence them when they evaluate their entrepreneurship and their chances of successfully establishing a company in a specific market segment (Zíka and Koblovsky, 2016). In the case of CEOs, their confidence may have a significant impact on a company's operations, while they are also in charge of both the decision-making concerning everyday procedures and decisions about the company's future development. For example, acquisitions are usually carried out by CEOs whose precision of judgement about the value of an acquired company, and especially about the value of its shares, might be biased (Skala, 2008). Moreover, CEOs' confidence is also closely related to confidence of their employees (Zíka and Koblovsky, 2016).

This systematic review is aimed at the overconfidence bias in CEOs' decision-making within a company. The main reason for examining this specific area is the fact that CEOs' decision-making has a great influence not only on the companies themselves, but also on their products, services, employees, procedures and other important factors.

1. METHODOLOGY

With regards to the issue under research formulated in the end of Introduction, the following research question was chosen:

How does the overconfidence bias affect CEOs in companies?

The methodology chosen for answering this research question was a systematic literature review. A systematic review differs from a classical narrative review through a systematic, transparent and reproducible process. Such an approach minimizes differences in reviews through a detailed literature search and a listing of used decisions and procedures. The sources for the review are recent academic articles written in English. The exact time span set for the sources was between 2011 and 2017 (May). The articles were found in the following databases: EBSCOhost, ResearchGate and Google Scholar according to the combination of the following keywords selected based on the research question: "overconfidence" AND "management" AND "CEO" AND "company" AND "bias" NOT "medicine" NOT "government" NOT "stock". The aim was to focus on sources about CEOs of companies. Excluding the terms with NOT was necessary for the elimination of sources which would have been outside the scope of the topic and would deserve its own research.

More accurately, the terms "medicine" and "government" were excluded because the articles with these terms do not deal with overconfidence in business or even economic settings. The term "stock" is more problematic because it might be helpful in finding articles about overconfidence bias in business (mainly its impact on managerial decisions affecting the stock market). However, the vast majority of these articles is focused on the role of overconfident managers in the financial crises, which is a slightly different and self-contained topic.

Besides the keywords, a couple of other criteria had been set for selecting the articles. Articles that just mention the keywords but do not explain the overconfidence bias further or just mention the topic very briefly (meaning it is not their main focus) were excluded. The same applies for articles which focused on overconfidence in areas other than business. The result of this process was that 17 articles were used to answer the research question (an overview is contained in Tab.1).

Tab. 1: Reviewed articles

Authors (year)	Topic	Methodology
Azouzi and Jarboui (2012)	Impact of overconfidence on dividend policy (positive)	Empirical research – quantitative
Eichholtz and Yonder (2015)	Impact of overconfidence on investment activities of CEOs (positive)	Empirical research – quantitative
Frese and Gielnik (2014)	Impact of overconfidence during establishment of a new company	Literature review
Herz et al. (2014)	Connection between overconfidence and innovation activity (mixed)	Empirical research – qualitative
Hirshleifer et al. (2012)	Connection between overconfidence and innovation activity (positive)	Empirical research – quantitative
Chen et al. (2014)	Impact of overconfidence on R&D expenditure (positive)	Empirical research – quantitative
Kausel et al. (2016)	Impact of overconfidence on personnel selection	Empirical research – qualitative
Lee et al. (2017)	Differences in confidence between company founders and professional CEOs	Empirical research – quantitative
Navis and Volkan (2016)	New opportunities followed by overconfident managers are often not the most suitable ones	Literature review
Malmendier and Tate (2015)	Overconfidence bias of CEOs	Empirical research – quantitative
Mohammadinasab and Rezaei (2016)	Relationship between overconfidence and dividend policy (not found)	Empirical research – quantitative
Robinson and Marino (2015)	People with higher confidence are more likely to establish a new company and put themselves in a leadership position	Empirical research – quantitative
Schrand and Zechman (2011)	Impact of overconfidence	Empirical research – quantitative
Simon and Shrader (2012)	Overconfidence during the introduction of a new product	Empirical research – quantitative
Yu, J. (2014)	Hiring overconfident employees	Literature review + algebraic methods
Yu, CH.F. (2014)	Impact of overconfident management on perceived value of a company	Literature review + algebraic methods
Zíka and Koblovsky (2016)	Impact of overconfidence by different subjects in a company and impact on their subordinates	Literature review

Source: Literature search by authors

2. LITERATURE OVERVIEW

The literature review identified three areas where the recent literature examines the influence of overconfidence bias on CEOs' decision-making: (i) dividend policy, (ii) innovation activities and (iii) human resource management, especially recruitment.

Starting with dividend policy, there is no clear evidence concerning the impact of overconfidence. According to Schrand and Zechman (2011), overconfident managers underestimate risks, and therefore they set out too generous dividend policy at the expense of reserves or investment. Azouzi and Jarboui (2012) supported this claim in their research of 100 companies in Tunisia which showed that executives' overconfidence positively impacts on their dividend policy. On the other hand, the authors Malmendier and Tate (2015) claim that management overconfidence correlates with the decision to pay lower dividends. Another study - by Mohammadinasab and Reazaei (2016) - did not find that overconfidence bias had any significant impact when it came to the decisions about a company's dividend policy. Therefore, the findings are mixed and it appears that there are other factors affecting this relationship.

The literature distinguishes between two types of overconfidence that have an impact on company innovation activity: overoptimism and judgemental overconfidence (as explained in Introduction). According to Hirschleifer et. al. (2012), managers who are overoptimistic about the company's future look for innovation more often, change the technological direction and hold more patents. Contrastingly (Herz et al., 2014), judgemental overconfidence has the opposite effect and decreases innovation activity. Herz et al. (2014) offer the conclusion that the aggregate effect of overconfidence bias on innovation depends on the dominant type of overconfidence. However, as has been stated in other publications (e.g. Hirschleifer et. al., 2012; Schrand and Zechman, 2011; Eichholtz and Yonder, 2015), most of the time the final effect of overconfidence on innovation is positive.

Therefore, the question is often raised whether the overconfidence of managers can sometimes be desirable due to its positive impact on innovation. Reasoning in favour of overconfidence is offered by Hirschleifer et. al. (2012) – overconfident executive employees tend to push for innovation more frequently and are better at persuading investors to invest in higher-risk projects, which can enable further growth in innovative industries. A study by Yu (2014) complements this theory by finding that overconfident managers are sometimes intentionally hired in highly competitive industries to push for more R&D investment and to gain a competitive edge. Similarly, Eichholtz and Yonder (2015) found that overconfident CEOs have a greater tendency to invest, leading a company to gain more assets and total equity. Although in their research Chen et. al. (2014) concluded that a relationship between CEOs' overconfidence and a significant increase in R&D spending does exist, the positive impact of overconfidence on the value of a company in the long term was not found. Navis and Volkan (2016) support this by claiming that innovation opportunities which are pursued due to overconfidence are not usually the most suitable ones.

One specific type of innovation which is important to consider in this topic is the introduction of a new product to the market (Simon and Schrader, 2012). A study by these authors, examining 55 small companies, showed that the more innovative and resource-intensive a new product is, the greater the company managers' optimism and confidence of success. It connected overoptimism with entry to a hostile market (with a large amount of competition which endangers successful entry and the sales of the product in a new market). The acquisition of confidence and optimism leads managers to push for successful entry into new markets. One reference study (Frese and Gielnik, 2014) argues that even though overconfidence may lead to successful entry into a new market, this entry has (mainly in its later stages) lower chances of survival and moreover causes the company to remain in an unsuccessful market for an excessive amount of time.

The impact of overconfidence on human resource management is already seen during the recruitment stage. Although this area has not yet been researched thoroughly, Kausel et. al. (2016) argue for the existence of this effect and its possible negative impact when assessing an employee’s performance in a job interview. It is supposed to depend on whether an interview is structured – the lower structuralization of a job interview adversely affects the assessment due to the overconfidence bias. According to the authors, this topic has not been previously researched and none of the articles which were found expand upon this issue. Another human resource management decision that can be subject to the overconfidence bias is choosing who will be responsible for leading a company. A study by Lee et al. (2017) deals with the choice of whether the leadership of a company should remain in the hands of its founder or whether it should be allocated to a professional manager. According to the researchers, company founders are more susceptible to overconfidence bias than professional managers. Therefore, the founders are more disposed towards optimism which may affect the company's entire strategy, its investors and employees. On top of that, the manager influences the confidence of his subordinates (Zíka and Koblovsky, 2016). If a manager is too confident, it may motivate his subordinates on the one hand, but on the other, it may lead them to overestimate their abilities.

Some researchers have also been interested in the question why overconfident people are often to be found amongst a company's executive staff. According to Yu (2014a), in the short term an overconfident CEO may improve the employees' perceived value of a company, as well as its market value. It has also been shown that overconfident people establish their own businesses more often and put themselves in charge of companies (Robinson and Marino, 2015). Another reason may be the aforementioned dedication to innovation. Nonetheless, the perceived short-term success in each aspect is mainly caused by a common trait amongst overconfident CEOs – greatly underestimating the risks. This underestimation may lead to company bankruptcy or even greater economic problems (Yu, 2014b), and therefore suggests it is irresponsible to deliberately employ overconfident managers.

3. DISCUSSION

The main advice for the management of a company stemming from this review of overconfidence, is to analyse the risks and impartially compare the various alternatives before making a decision. For making more unbiased decisions, it is recommended to use structured and more objective methods, for instance, structured interviews for hiring new employees (Kausel et al., 2016). However, despite the fact that the impact of overconfidence bias on people within companies has been demonstrated, further research is necessary to improve our understanding of this phenomenon and its possible prevention.

This review is only aimed at a few of the numerous areas where the effect of overconfidence occurs. In order to clarify the influence of overconfidence bias on CEOs, it would be appropriate to focus on diverse factors which could cause the overconfidence bias on CEOs to have different levels of impact intensity. Different researchers who have examined the influence of personal characteristics on overconfidence, for example, Mishra and Metilda (2015), have discovered that men are more overconfident than women and overconfidence also increase with the level of education and with the individual's growth in investment experience. The influence of gender on overconfidence bias also appeared in the research of Singh et al. (2016) who showed that investment decision-making is not as completely rational as is generally assumed, and instead it is affected by a great number of biases including overconfidence bias.

As mentioned earlier (Mishra and Metilda, 2015), education is also an important factor. The connection between education and overconfidence was studied by Margolin (2014) who looked at the individual's area of study as well as their level of education. Margolin also called for further research into this area as it has not yet received sufficient attention. Furthermore, there might be a connection between various types of overconfidence and how old an individual is, as was observed by Prims and Moore (2017). However, their findings do not show any obvious connection between the age of a person and his or her tendency to overestimate or overvalue. The study at least proves that in some cases judgemental precision may worsen with age, although the authors recommend further research in this area.

It seems highly probable that there is a great number of different factors that might be connected to people's tendency to be affected by overconfidence, and which have still not been researched. For example, social background and family position (including the number of siblings or children) might be one of them. Additionally, company-level factors (size, organizational culture, market sector, etc.) might yield interesting insights. Moreover, there is always the question of the existence of the influence of a broader national culture on CEOs' tendency to be biased by overconfidence. Finally, aspects of decisions themselves probably affect overconfidence, as the bias might change with the financial stakes, importance, time and the attention dedicated to decision-making and other factors.

The limitations of this article stem from the methodology chosen – the key words used and the search through a limited number of databases. In particular, the exclusion of a key word "stock" might reduce the number of studies related to the topic of dividend policy and related issues. Another limitation was the focus on studies written in English.

CONCLUSION

The goal of this article was to review the recent literature on the topic of the cognitive bias of overconfidence, specifically in the case of CEOs. In the literature review, three main areas of decision making were identified. The first one was the influence of CEOs' overconfidence on dividend policy, the second was innovative processes within a company, while the third was human resource management. While there is no unequivocal support for the effects on these relationships (the opinions of the authors differed or there were not enough sources to confirm the hypothesis), the relationship between CEOs' overconfidence and the mentioned research areas was firmly supported. In the discussion, the article reflected other possible approaches to this topic and proposed various agendas for further research.

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