The bright side of managerial over-optimism ☆

Gilles Hilary [a,*], Charles Hsu [b], Benjamin Segal [c,d], Rencheng Wang [e]

[a] INSEAD, 1 Ayer Rajah Avenue, 138676, Singapore
[b] HKUST, Hong Kong
[c] Fordham University, USA
[d] Hebrew University, Israel
[e] University of Queensland, Australia

A R T I C L E   I N F O

A B S T R A C T

Human estimation and inference are subject to systematic biases such as overconfidence and over-optimism. In contrast to prior research that has identified multiple negative consequences of these biases, we focus on positive effects. We empirically examine a setting in which over-optimism a) is a related but different bias from overconfidence, b) emerges dynamically in a rational economic framework, and c) generates higher managerial effort. Importantly, this additional effort improves firm profitability and market value.

© 2016 Elsevier B.V. All rights reserved.

1. Introduction

One of the best-established stylized facts in the decision-making literature is that individuals are over-optimistic about future outcomes (e.g., Weinstein, 1980). Over-optimism is related to overconfidence but is distinct.[1] Over-optimism creates an upward bias in the *mean* of the distribution while overconfidence creates an upward bias in its *precision*. Importantly, prior analytical work also suggests the possibility that over-optimism can increase firm performance (e.g., Hackbarth, 2008), but little empirical work exists on this topic. We investigate this issue empirically.

  [1] Hackbarth (2008) defines over-optimistic managers as those who overestimate the growth rate of earnings while overconfident managers are those who underestimate the riskiness of earnings. Heaton (2002) defines managers as "optimistic" when they systematically overestimate the probability of good firm performance and underestimate that of bad performance.

We first note that individuals are over-optimistic in general, and particularly so regarding the effect of their own actions (we call this phenomenon "static over-optimism"). In addition, managers may suffer from a biased attribution of causality after a series of good performances that leads them to under-estimate the role of random noise and over-attribute successes to their own actions (we call this phenomenon "dynamic overconfidence"). The combination of these two phenomena leads to an increase in over-optimism after a series of successes (we call this phenomenon "dynamic over-optimism"): optimistic managerial actions (or beliefs) receive an increasingly disproportionate weight in the overall estimation of a project's success. Thus, our first hypothesis posits that the degree of managerial over-optimism should increase after a series of successes. This miscalibration in managerial prediction may encourage managers to exert greater effort, as they expect this effort to pay-off with a greater likelihood. Naturally, this additional effort should have a positive effect on firm performance. Hence, our second hypothesis conjectures that firm performance should increase following a series of successes, even if the increase remains below the level expected by an over-optimistic manager.

We note that our hypotheses can be motivated in an economic framework in which individuals are Bayesian. For example, Van den Steen (2004) proposes a model in which a representative agent is endowed with priors. In the most basic setting, a manager can choose from a menu of actions. For each action, the manager's prior over the likelihood of success equals the true probability plus a (non-invertible) random error. The manager optimally chooses the action for which her prior is highest, which is also the action whose probability of success the manager is most likely to over-estimate *ex post*. This generates the static over-optimism we discuss above. This framework also allows for a Bayesian but biased attribution of performance that yields a form of dynamic overconfidence. Combined with static over-optimism, this phenomenon generates the dynamic over-optimism that is the core of our first hypothesis. Our second hypothesis relies on the idea that over-optimism can elicit higher effort from management. As noted in Van den Steen (2004) this emerges naturally if the payoff is increasing in effort when the action is successful.

Our empirical findings are consistent with our analytical framework and support the presence of dynamic over-optimism. First, we show that managers who experienced more frequent successes in the recent past, subsequently issue more optimistic forecasts. Further analysis reveals that they also exercise stock options later (Malmendier and Tate, 2005; Campbell et al., 2011) and issue earnings releases with a more optimistic tone (based on textual analysis). Importantly, these results hold in specifications with manager fixed effects. By showing that over-optimism has an endogenous and dynamic component, our results suggest that, at least to a certain extent, some managers are made (rather than just born) over-optimistic. Second, and importantly, we show that the over-optimism we document can improve firm performance and that managers appear to exert greater effort to meet their own over-optimistic forecasts. Specifically, firm accounting performance and quarterly market return increase as the degree of managerial over-optimism increases. In contrast, measures of accruals or real earnings management are not affected by this over-optimism. These results suggest that the increase in firm performance is genuine. They also suggest that managers, being over-optimistic regarding the likelihood of meeting the expectations they set, do not feel the need to manage earnings in order to reach their forecasts. Third, using comparative statics, we show that our empirical findings are consistent with our economic framework, which predicts that over-optimism increases with flexibility in decision-making and with the diffusion of priors, and decreases with managerial experience. Van den Steen (2004) notes these comparative statics empirically distinguish this framework from others. Lastly, we perform a path analysis. Results demonstrate a series of structural links that go from past performance to over-confidence, from overconfidence to over-optimism, from over-optimism to effort, and from effort to performance. This chain of links is consistent with our overall framework.

We contribute to the literature in several ways. First, we show that over-optimism can increase firm performance. Although prior analytical work suggests this possibility (e.g., Benabou and Tirole, 2002; Compte and Postlewaite, 2004; Van den Steen, 2004; Hackbarth, 2008; Gervais et al., 2011), little empirical work exists on this topic. Second, we present evidence consistent with the comparative statics and ancillary predictions of the economic over-optimism framework. Lastly, we empirically distinguish between overconfidence and over-optimism. The importance of this distinction has been noted by prior literature. For example, Moore and Healy (2008) explain (p. 503) "[t]he first problem with overconfidence research is that the most popular research paradigm confounds overestimation and overprecision." There is now an established literature on overconfidence in managerial behavior (see Glaser and Weber, 2010 for a review), yet much less is known about over-optimism in this context.[2]

The remainder of the paper proceeds as follows. In Section 2, we discuss our hypothesis development and our empirical design. In Section 3, we present our samples and descriptive statistics. In Section 4, we provide our main empirical results and additional evidence consistent with our economic framework. In Section 5, we discuss different robustness checks. Section 6 concludes.

---

[2] A small number of studies investigate the possibility that overconfidence is a dynamic phenomenon (e.g., Hilary and Menzly, 2006; Hilary and Hsu, 2011). Our study differs from those studies in three important ways. First, we consider how the over-optimism bias affects managerial effort. We believe ours is one of the first empirical studies showing that biased (over-optimistic) expectations lead to an improvement in firm performance. Second, while those studies focus on the precision of the forecast, we show that past successes affect the *level* of the bias. In other words, we distinguish between over-optimism and overconfidence. Third, those studies rely on research in psychology to motivate their empirical analysis. We empirically explore a rational framework that does not rely on cognitive biases to motivate our hypotheses. To our knowledge, we provide the first archival study that is consistent with a rational explanation of over-optimism.