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Does managerial ability facilitate corporate innovative success?☆

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ABSTRACT

This paper examines whether managerial ability facilitates corporate innovative success. First, we show that managerial ability is positively associated with innovative output. Second, we show that the positive association between managerial ability and innovative output is weaker for older CEOs and managers who stay in the same job for longer, suggesting a preference for a 'quiet life' by long serving CEOs. Third, we find that the equity market values patents generated by more able managers more positively, suggesting that equity holders deem better skilled managers more effective at converting innovative ideas into valuable new products. Finally, we show that managerial ability is positively associated with more 'radical' innovations, which are outside of the firm's knowledge base. Overall, our results suggest that managerial ability is an essential component of corporate innovative success.

I think that [executive salaries are] problematic because they're giving entrepreneurial returns for managerial conduct. They are basically running an organization that already exists, that probably will exist long after they've departed. And so to compensate them with entrepreneurial style returns without having them take entrepreneurial style risks is inappropriate.

Charles Elson, Business Ethics (August 2, 2006)

1. Introduction

The compensation of executives has long been a topic of great public attention. As the above quote by Charles Elson suggests, many in the profession perceive managerial remuneration to be unjustifiably high. In light of the ever increasing executive compensation

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packages (Murphy and Zabojnik, 2004), one has to question whether managers are indeed mere rent extracting agents or whether their salaries are justified by their superior skill which adds value to the firm. Assuming that managerial skill is necessary for the long-term success of a corporation, paying high salaries to attract the most skilled managers is justified. Otherwise, if Charles Elson is indeed correct in asserting that executives merely manage what has already been established and therefore great skill is not required of them, high executive salaries represent rents at the expense of shareholders. Although there is some evidence showing that managerial ability improves certain aspects of corporate activity, the relevance of managerial skill for corporate success remains largely unresolved.[3]

We contribute to this literature by being the first to examine the role that managerial ability plays in corporate innovative success. Since corporate innovation is one of the most important drivers of organizational long-term success (Holmstrom, 1989), the absence of research on how managerial ability affects innovation outcomes is a material oversight.[4] Our paper makes the first major attempt to fill this void in the literature.

There are two competing views on how managerial ability affects corporate innovation. The first view is that managerial ability has little or no effect on corporate innovative success. After all, innovation outcomes are highly uncertain and idiosyncratic in nature (Holmstrom, 1989), with even the best managers unable to predict which investments will eventually lead to commercially successful products and which will not. Innovation, therefore, has lottery-type features, with luck being potentially more important than skill (Chen et al., 2014). It is this feature of innovation that can discourage rational managers from investing in innovation (Hirshleifer et al., 2012). It is therefore possible that firm specific factors such as institutional ownership (Aghion et al., 2013), product market competition (Aghion et al., 2005), or analyst coverage (He and Tian, 2013), rather than managerial-level ability that are the key determinants of corporate innovative success.

A competing view is that managerial ability is essential to the innovative process. There are a number of reasons which support this view. First, more able managers are likely to be better trusted by shareholders and other stakeholders (Baik et al., 2011; Demerjian et al., 2013). As a consequence, able managers are less likely to be discouraged from investing in risky innovation projects within the Narayanan (1985) career concerns context, since they can signal their superior skill through other non-innovation related decisions. Furthermore, higher trust will also result in lower financing costs, which will make investments in innovation easier. Second, more able managers can influence innovative outcomes by creating the most optimal framework for research staff to maximize their creative potential. Prior literature has shown that employee compensation (Chang et al., 2015) and employee treatment (Chen et al., 2015) are key factors affecting innovative success. It is therefore possible that even though top executives have little influence over innovative outcomes per se, they play an essential role in creating an environment which extracts the most value from the firm's human capital.

We test these two competing views utilizing a large sample of 42,754 firm-year observations spanning the period 1993–2006. We use the Demerjian et al. (2012) proxy of managerial ability and perform robustness checks using Chief Executive Officer (CEO) awards and media citations. The Demerjian et al. (2012) measure of managerial ability is based on the efficiency with which managers convert resource inputs into outputs. Their approach first estimates total firm efficiency, where efficient firms are those that generate more revenues from a given set of inputs. They then partition firm efficiency between firm and manager, and verify that the component attributed to the manager is associated with the price reaction to management departures. We measure innovative output as the number of patents and patent citations generated by firms. This approach is consistent with the recent literature on corporate innovation (Aghion et al., 2013; Fang et al., 2014; He and Tian, 2013; Hirshleifer et al., 2012).

Our baseline results show a positive association between managerial ability and innovative output. These results are obtained after controlling for R&D capital, standard firm-level factors, as well as industry and year fixed effects. This positive association is robust to alternate measures of managerial ability, varying sample sizes, and model specifications. In addition, the baseline results are not sensitive to the inclusion of addition control variables which take account of CEO-specific characteristics, corporate governance, local–cultural values pertaining to gambling-preferences and risk-taking, as well as M&A activity. Overall, our main results show that managerial ability is an important factor contributing to enhanced corporate innovative success.

In additional tests, we find that the positive association between managerial ability and corporate innovative output diminishes with CEO age and tenure. This observation is consistent with the "quiet life" hypothesis of Bertrand and Mullainathan (2003), which states that managers have an incentive to pursue a course of action which leads to the fewest problems. Clearly, while managerial ability is important to corporate innovative success, longer-serving CEOs are less inclined to use their superior skill to pursue difficult and risky innovative projects.

Our empirical tests also show that the market's valuation of a firm's patents is higher when an able manager is at the helm. This result suggests that the market perceives skillful managers as being more effective in converting patented ideas into commercially successful products. Finally, in the last set of tests on the association between managerial ability and patenting strategies, we find that managerial ability is positively associated with patents which are unrelated to firm's existing knowledge base. This observation suggests that managerial skill is not only related to a higher volume of patent generation, but that the patents which are generated by firms with able managers at the helm tend to be more unique in nature, which gives the firm a greater edge over its competitors. Overall, our results show that managerial skill is an important factor in determining a company's innovative success.

Our paper makes two major contributions to the managerial ability literature. Our first contribution is to the literature on the effect that managerial ability has on corporate decision making. There are a number of theoretical models which show the relevance of

[3] Baik et al. (2011) document that managerial ability is related to earnings forecasts, Demerjian et al. (2013) show that managerial ability improves earnings quality, and Attig and Cleary (2014) examine the relation between managerial ability and cash-flow sensitivity of investment.

[4] A recent study by Accenture, titled "Innovation Efforts Falling Short Despite Increased Investment" shows that 93% of CEOs believe that the long-term success of their organization depends on their ability to innovate.