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# Reputation effects of information sharing[☆,☆☆]

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ABSTRACT

This paper analyzes a model of investment and return in an economy characterized by information asymmetry between an investor and a manager. The realized value of the uncertain state of nature is the manager's private information. The paper first considers an economy where the manager cannot share her private information with the investor. Therefore, dividend payment is the only reputation building tool available to the manager. If the investor's prior beliefs about the manager's trustworthiness are sufficiently high, then the manager will return a dividend consistent with the lower possible state of nature having occurred and the investor will revise such beliefs downwards. However, if the beliefs are not so high, then the equilibrium will be mixed strategies.

The paper then compares such a dividend-only economy with one where information sharing is an additional tool available for building reputation. Information sharing disciplines the potential opportunism accruing to a manager out of her informational advantage. It provides ex post verifiability of the state of nature and thereby, obviates downward revision of an investor's prior beliefs about a manager's trustworthiness. This results in a greater region of pure strategy play in the dividend-and-information-sharing economy. Since such pure strategy play implies investment with certainty, information sharing leads to higher investment. Further, pure strategy play implies returns consistent with the actual state of nature in the dividend-and-information-sharing economy while it implies dividend consistent with the lower state of nature in the dividend-only economy and these lead to higher return in information sharing.



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## 1. Introduction

> "It takes 20 years to build a reputation and five minutes to ruin it. If you think about that, you'll do things differently."
> - Warren Buffett

At one end of the spectrum are the Warren Buffetts and Cynthia Cooper (Cynthia Cooper was the whistle-blower at WorldCom) while at the other end are Enrons and WorldComs. Interestingly enough, the final disintegration of Arthur Andersen (one of Big Five Accounting firms) was not caused directly by Enron audit deficiencies, but by a decision to shred Enron audit documents, and the conviction on the charge of obstruction of justice that resulted. The ensuing loss of reputation meant Arthur Andersen's clients walked away, and even though on May 31st, 2005, the U.S. supreme Court overturned the conviction on the grounds that the "jury instructions failed to convey the requisite consciousness of wrong-doing", it was too late – a firm of 85,000 people worldwide, including 24,000 in the US had disintegrated. This example underscores the importance of reputation in a world characterized by information asymmetry.

The role information plays in facilitating reputation for trustworthiness is the focus of this paper. This paper first analyzes an economy where there is information asymmetry between an investor and a manager and the only reputation-building tool available to the manager is the dividend she pays out. The information asymmetry arises from an uncertain state of nature, the realization of which is the manager's private information. In the equilibrium of a finitely repeated game, a rational manager will pay dividends consistent with the lower possible state of nature having occurred, if the investor's prior beliefs about the manager's trustworthiness are sufficiently high. Lack of ex post verifiability of the state of nature implies that the manager is able to get away with pretending that the lower possible state of nature has occurred; however, this leads to a downward revision of the investor's ex ante beliefs about the manager's trustworthiness. Given that the investor's beliefs about the manager's trustworthiness are high, therefore, she will invest with certainty. That is, the equilibrium will be in pure strategies.

If the investor's prior beliefs about the manager's trustworthiness are not sufficiently high, then the equilibrium will be in mixed strategies. The investor will invest with a certain probability strictly less than one while the manager will pay dividend with a certain probability strictly less than one. The choice of respective probabilities will be such that it will make the other agent indifferent between the choices available to her in her action space. While pure strategy play leads to downward revision of the investor's beliefs about the manager's trustworthiness, mixed strategy play ensures that the investor's prior/ex ante beliefs about the manager's trustworthiness are updated upwards to a point at which the investor then invests with a probability strictly less than one.

The paper then compares such a dividend-only economy with one where sharing of private information is an additional reputation-building tool available to the manager. It finds that in equilibrium, the dividend-only economy will have a smaller region of pure strategy play compared to the dividend-and-information-sharing economy. Pure strategy region in both the economies has the investor investing with certainty while the mixed strategy region has the investor investing with a certain probability strictly less than one. Greater region of pure strategy play in the dividend-and-information-sharing economy and the concomitant investment with certainty will lead to higher investment in information sharing.

The pure strategy region in the dividend-only economy has the manager paying out a dividend consistent with the lower state of nature having occurred. On the other hand, the pure strategy region of the dividend-and-information-sharing economy introduces the possibility of sharing manager's private information about the realized state of nature. It, thereby, obviates such obfuscation by the manager as is possible in the dividend-only economy. Further, as noted earlier, there is greater region of pure strategy play in the dividend-and-information-sharing economy. Taken together, the greater region of mixed strategy play combined with pure strategy play of payment of dividend consistent with the lower state of nature in the dividend-only economy leads to higher return in information sharing.

Fundamental to the above analysis is the existence of trustworthy manager. In the dividend-only economy, the trustworthy manager is defined as one that always pays a fair dividend to the investor. In the dividend-and-information-sharing economy, the corresponding definition is of a manager that pays a fair dividend and chooses to share her private information. The finitely repeated nature of the game allows for opportunities for reputation building in both the economies. While the payoff maximizing nature of the rational manager pushes her towards paying out as little as possible in dividends, the possible existence of the trustworthy manager forces egalitarianism. In equilibrium, the rational manager is forced to mimic the trustworthy type in an attempt to build reputation for being trustworthy. The nature of such mimicking is different across the two economies with the resultant differences in investment and return.

This paper is closely related to Einhorn and Ziv (2008) and Beyer and Dye (2012). Einhorn and Ziv (2008) shows that current period's disclosure impacts the firm's reputation for being informationally endowed by increasing the market's expectation of information endowment of the firm and thus, creates an implicit disclosure cost for future. Beyer and Dye (2012) studies managerial efforts at building reputation for being 'forthcoming' by disclosing all the earnings forecast received in the classic Dye (1985) and Jung and Kwon (1988) voluntary disclosure framework.

In the current study, the counterpart of Beyer and Dye's 'forthcoming' manager is the 'trustworthy' manager. In the literature following Berg et al. (1995), 'trust' is widely perceived as making the risky choice of passing the endowment to the second player in a sequential game for an expanded pie, some of which may be possibly returned. This paper follows such notion of trust in studying the managerial efforts at building reputation for being trustworthy. While trust has mostly been examined using behavioral theories and human subjects experiments, at a theoretical level, trust has been conceptualized