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Capital budgeting for new projects: On the role of auditing in information acquisition☆

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Abstract

This article studies capital budgeting for new projects in which information is acquired by managers. When information acquisition costs are small, optimal capital budgeting is not qualitatively different from that for routine projects where managers have pre-existing information. However, the need to provide incentives to acquire information results in more intensive auditing and further distortions in capital allocations. When information acquisition costs are large, optimal capital budgeting differs from that for routine projects. To provide strong incentives for information acquisition, auditing becomes more extensive, and more than the first best amount of capital is allocated whenever auditing occurs.

JEL classification: D82; D83; G31; M42

Keywords: Capital allocation; Auditing; Information acquisition

1. Introduction

Capital budgeting may be the most important decision made by corporations. While the net present value rule has long been a standard prescription, it does not guide the practical details of internal capital allocation (Harris and Raviv, 1996). In response to this, researchers have paid attention to asymmetric information in internal capital markets. In

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particular, they posit that division managers have better information than headquarters about the prospects of projects at the outset.[1] Due to unaligned interests, information asymmetry creates agency problems. Capital budgeting is then optimally structured to provide managerial incentives for information revelation.

While the assumption of endowed information is a reasonable approximation in some settings, managers may not be omniscient from the outset in many relevant settings (Lewis and Sappington, 1997). In particular, while managers could have information about the ongoing projects they have routinely managed, they might not have superior information about new or non-routine projects. For the successful implementation of such projects, it is important to motivate managers to acquire valuable information about the projects. However, there has been scant attention to this issue in the literature on capital budgeting. This article studies optimal capital budgeting from the standpoint of efficiently motivating managers to acquire and reveal information.

The paper first discovers an important, but unexplored, role of auditing. For routine projects where information is given to a manager at the outset, auditing is simply used to discipline the manager's incentive to lie about his pre-existing private information. However, for new projects where information should be acquired by the manager, auditing is used to motivate him to acquire that information. More intensive and extensive auditing encourages the manager to acquire information by decreasing the opportunity cost of information acquisition. In addition to the disciplinary role the literature has presumed, this paper thus emphasizes the positive incentive role of auditing. Next, it finds that the optimal allocation of capital for new projects is qualitatively different from that for routine projects. The efficient provision of incentives to acquire information results in the distortion of resource allocations beyond that involved in the creation of incentives to disclose pre-existing private information.

Formally, this study extends a standard capital budgeting model to consider a project where information is endogenously acquired by a manager. In particular, at the outset neither the manager nor headquarters has information about the productivity of capital, which will determine the net present value of the project. The manager, who has a preference for empire building, can acquire the information by incurring the personal costs of the information acquisition effort. Headquarters audits the manager's report on the productivity of capital to verify the truthfulness of the report.[2]

Optimal capital budgeting can be characterized according to information acquisition costs. When these costs are small, headquarters audits (randomly) only if the manager reports that the productivity of capital is high. To discipline the manager's incentive to overstate capital productivity, headquarters allocates less than the first best amount of capital for the high-productivity state and more than the first best amount of capital for the low-productivity state. Since these results hold unless information acquisition costs are large, they can also characterize the capital budgeting process for routine projects where information acquisition costs are zero, or equivalently where information is given to the manager at the outset. A contribution of the paper is then to show that headquarters

[1]See for instance Harris et al. (1982), Antle and Eppen (1985), Holmström and Ricart I Costa (1986), Harris and Raviv (1996, 1998), Zhang (1997), Bernardo et al. (2001, 2004), Dutta and Reichelstein (2002), Dutta (2003), Baldenius (2003), Berkovitch and Israel (2004), and Marino and Matsusaka (2005).

[2]The model follows Fama and Jensen (1983) in that the manager is responsible for project initiation (by information acquisition) and implementation, and headquarters is in charge of project ratification and auditing.