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Authority and Accountability in Hierarchies

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Authority and Accountability in Hierarchies

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ABSTRACT

We examine the assignment of authority to managers in corporate hierarchies and explore the link between authority and accountability that underlies responsibility accounting. We describe major activities of managers as "providing direction and support," "monitoring performance," and "hiring and contracting." These activities enhance subordinates' productivity, improve the quality of measures used to evaluate subordinate performance, and stipulate subordinates' compensation contracts, respectively. In a stylized setting of a hierarchy, we illustrate how these three activities differ in the sense that a unique set of determinants dictate the optimal assignment of managerial authority. Our results suggest that "delegation of authority" is a far richer construct than is often portrayed in prior literature. We also consider how performance measure characteristics affect and are affected by assignment of managerial authority in hierarchies. For instance, we find that whether performance measures are aggregate or disaggregate affects the optimal assignment of authority along functional or product lines. We conclude with some suggestions for future research that seeks a closer examination of factors that drive assignment of authority in corporate hierarchies.

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1

Introduction

In the accounting literature, authority and accountability usually arise in the context of responsibility accounting. Zimmerman (2014) suggests that responsibility accounting begins with the recognition that subunits of organizations are assigned authority to make decisions and responsibility accounting then is a way to measure their performance. Similarly, Demski (2008) defines responsibility accounting as a blueprint that specifies accounting measures and a list of managers who are accountable for them. Demski (2008) also implies that accountability is hierarchical in the sense that common accounting-based measures, such as revenues and profits, easily aggregate up and cascade down in a hierarchy, so that each manager, in principle, is held accountable only for the portion of revenue or profit for which he is most responsible (Meyer, 2003). Consistent with this perspective, compensation surveys suggest performance measurement practices vary substantively up and down the hierarchy. For instance, there is evidence that senior managers are evaluated based on more aggregated financially oriented measures, whereas, at lower ranks, performance measures are less aggregated and may not even be financial in nature (Abernethy *et al.*, 2004; Wulf, 2007).

Over the last four decades, the responsibility accounting literature has examined the determinants and consequences of a variety of issues concerning incentives and performance evaluation in hierarchical organizations. For instance, issues surrounding the link between controllability and informativeness, the use of accounting-based versus market-based measures, financial versus nonfinancial measures, objective versus subjective measures, absolute versus relative measures, and so on have received considerable attention.[1] Far less attention has been devoted to a central issue in responsibility accounting: the assignment of authority in hierarchies.

Our objective is to closely examine the factors that drive assignment of authority inside the corporate hierarchy.[2] In particular, we focus on authority assigned to middle managers or business unit managers, rather than CEOs or senior executives, because decisions and actions taken at middle levels are collectively far-reaching and because little of the literature has focused on middle managers. For instance, the Bureau of Labor Statistics reports that, in 2017, approximately 20% of employees in the United States are involved in primarily managerial activities. Also, compensation setting at lower levels of the corporate hierarchy usually differs from the process for setting compensation for the CEO and other senior executives. While business unit compensation is usually determined by corporate management, CEO and senior executive compensation is typically determined by the board (Baiman *et al.*, 1995). We also deemphasize issues pertaining to workers in lower ranks, except to the extent that worker-related characteristics affect middle managers.

We begin with a simple question: "What do middle managers do?" In broad terms, Milgrom and Roberts (1992) suggest that the key functions are coordination and motivation. Managers coordinate and motivate by communicating information up and down the hierarchy, by providing direction and assistance to employees in lower ranks, and by

[1] Surveys of the accounting literature that address these issues include those by Lambert (2001), Christensen and Feltham (2006), Demski (2008), Dutta (2008), Ederhof *et al.* (2011), and Glover (2012).

[2] To be specific, we focus on formal authority rather than informal or real authority. This distinction is discussed by Aghion and Tirole (1997).

supervising and monitoring lower-level employees (see Radner, 1992; Mookherjee, 2013). The practitioner literature echoes these themes. For example, it often classifies sales management tasks into three categories: Business management, which includes meetings, planning, budgeting, and administrative activities that keep information flowing between headquarters and the sales force; customer management, which includes activities that help the sales force cater to key customers; and people management, which includes hiring, supervising, and conducting performance reviews of the salespeople (Zoltners *et al.*, 2014).

The preceding discussion illustrates three important distinctions between "managers" and lower-level "employees." First, middle managers support and supervise the work of others, rather than performing the work directly. Obviously, the nature of the firm's technology or production function also bears on managers, and some managers do engage directly in production as well. But we focus on managerial activities that are expressly linked to the work of subordinates.[3] Second, managerial jobs typically involve a lot of variety. This is because activities such as planning, helping, hiring, and supervising are inherently quite different and because different types of subordinates need different types of support and supervision. Third, activities such as planning, budgeting, hiring, and supervising usually precede subordinates' work. Where appropriate, we highlight these distinctions in what follows.[4]

In addressing the question of what middle managers do, we first classify managers' activities into three categories that emphasize their link to their subordinates. These are (1) providing *direction and support*, (2) *monitoring* performance, and (3) hiring and *contracting*. In line with Lazear *et al.* (2015), we argue that distinguishing among these categories is important because managers often have authority for some activities but not others, and it is not at all clear that inferences that pertain to some of the activities apply equally well to others. Distinguishing among managers' activities also provides opportunities

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[3] The subordinate label can apply to lower-level managers in larger organizations with deep hierarchies, lower-level workers engaged directly in production, or both.

[4] Managers and subordinates can also differ in terms of inherent managerial or production skills, information endowments, or both. We do not address the implications of such differences for the assignment of authority in hierarchies.

to structure more refined empirical tests of hypothesized associations between authority and accountability. For instance, we note that the first category of activities increases firm value directly by improving subordinate productivity or performance. In contrast, the last two categories add value indirectly but only to the extent that the interests of owners and subordinates are not perfectly aligned.

Second, in a stylized agency model, we characterize a firm's decision to assign authority for each managerial activity identified above, assuming that managers' subordinates (and thus the specific tasks that require support and supervision) are *a priori* identical. This narrows the decision to assign authority for a specific activity (direction and support, monitoring, contracting) to a decision about managerial *span of control*, that is, how many subordinates are assigned to middle managers and how many subordinates are supervised by more senior managers (e.g., headquarters). With a long history in the study of organizations, span of control is commonly defined as "the number of subordinates directly reporting to a manager" (e.g., Simon, 1945; Urwick, 1956; Woodward, 1965; Prendergast, 2002; Guadalupe and Wulf, 2010).[5] Understanding the determinants and consequences of span of control is central to understanding responsibility accounting for middle managers, at least in settings that require potentially significant coordination between middle managers and their subordinates.

In Section 3, we characterize the optimal managerial span of control and highlight a number of results. For instance, we find that the managerial span of control differs substantively, depending on the nature of the activity. When the managerial activity is to provide direction and support or to monitor subordinate performance, span of control tends to be low to account for the fact that motivating managers is itself a costly endeavor. In contrast, when the managerial activity is to contract with subordinates, a substantial amount of authority may be delegated to managers. This is akin to the analysis of Hofmann and Indjejikian (2018), which is illustrated in more detail in Section 3.4. We also find that the determinants of managerial span of control differ, depending

[5]Because most managers have at least one subordinate and one superior, the notion of span of control applies to all managers in a hierarchy.

on the managerial activity considered. When the activity is to provide direction and support, the primary factors are the characteristics of the manager, whereas, when the activity is to monitor subordinates, the key determinants are the characteristics of the subordinates. Lastly, when the activity is to contract with subordinates, the characteristics of both managers and subordinates become salient.

Our findings suggest that differentiating between managerial activities is important both conceptually and empirically. As Lazear *et al.* (2015) note, the theoretical literature has largely modeled the relationship between managers and subordinates at an abstract level and have not investigated the various links between them. This also applies to the empirical literature that documents a relation between delegation of authority and incentive compensation. This literature usually captures delegation of authority as a single construct, typically based on a survey that measures business unit managers' influence on manufacturing, operations, R&D, engineering, marketing, sales, accounting, purchasing, and HR including hiring, firing, and compensation (e.g., Abernethy *et al.*, 2015). However, many of these tasks are distinct, with some having direct production implications and others calling for managerial oversight and responsibility for the conduct and performance of subordinates.

In Section 4, we consider how performance measure characteristics affect and are affected by decisions about managerial span of control. In particular, the notion of an aggregate performance measure for a middle manager's organizational unit is firmly linked to the manager's authority, including his span of control. In an extension, we find that incentives based on more aggregate measures (e.g., performance metrics measured at the firm level) respond differently to variations in the span of control than incentives based on less aggregate measures (e.g., performance metrics measured at the divisional level).

Performance measurement in hierarchies is also affected when subordinates' activities spill over to the performance of other employees. The literature finds that spillovers affect subordinate compensation tied to individual and aggregate measures of performance (e.g., Bushman *et al.*, 1995; Keating, 1997; Bouwens *et al.*, 2018). In other extensions, we allow for both horizontal and vertical spillovers (i.e., spillovers between subordinates of the same hierarchical rank and spillovers from subordinates to managers) and find that the managerial span of control tends to be high in the case when there are substantial spillovers. Overall, our results highlight the subtle relation between managerial span of control, performance measure characteristics, and incentives for managers and subordinates.

In Section 5, we consider the implications of different types of subordinates requiring different types of managerial support. In these cases, the decision to assign authority for a managerial activity amounts to a decision about the grouping of managerial tasks to support subordinates of a specific type (in addition to the decision about managerial span of control). In turn, the grouping of tasks gives rise to a specific hierarchical form (Harris and Raviv, 2002). For instance, *M-form* hierarchies are structured along product lines, and the manager of a product division supports subordinates performing diverse tasks related to the same product. In contrast, *U-form* hierarchies are structured along functional lines, and the manager of a functional department supports subordinates performing similar tasks.

The literature relates the benefits of hierarchical forms to the economies of scale and complementarities associated with similar and diverse task assignments (e.g., Hughes *et al.*, 2005) and the implied effectiveness of relative performance evaluation (e.g., Maskin *et al.*, 2000; Baldenius *et al.*, 2002). In line with this work, (and assuming the managerial span of control remains fixed), we extend our analysis by allowing for diversity in subordinates' tasks. Diversity in subordinates' tasks implies diversity in managerial tasks to support subordinates. We characterize the optimal hierarchical form and find that the diversity in subordinates' tasks affects the optimal choice of form. We also find that the degree of aggregation or disaggregation in the firm's accounting system moderates the relation between task diversity and hierarchical form. Specifically, when aggregate firm-level measures are available for contracting, diversity in subordinates' tasks favors the *U-form*, whereas when more disaggregate individually oriented measures are available for contracting, diversity in subordinates' tasks favors the *M-form*.

The rest of this monograph is organized as follows. Section 2 reviews the related theoretical and empirical literature. Section 3 studies the managerial span of control when managers' activities are to provide direction and support, monitor performance, and contract with subordinates. Section 4 illustrates the relation between performance measurement and managerial span of control. Section 5 studies the assignment of authority to support subordinates of different types. Section 6 summarizes empirical implications and discusses avenues for future research.

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