

The Role of Management Controls in Transforming Firm Boundaries and Sustaining Hybrid Organizational Forms

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Abstract

Coase [1937] first explained the existence of firms and the boundaries between them as an emergent solution to minimizing the costs of accessing markets — what Williamson [1975] later termed ‘transaction costs.’ Over time, innovations in management control and changes to legal structures have reduced the costs of monitoring, raised the costs of behaving opportunistically, and created ways for partners to commit credibly to future actions. At the same time, entrepreneurial firms have developed inimitable resources that are a basis for collaborating with partners who have complementary resources [Penrose, 1959]. Together these forces have transformed the dichotomous choice of ‘make’ versus ‘buy’ into a selection among a more nuanced set of hybrid modes of organization (e.g., strategic alliances, joint ventures, and supply chain partnerships). The hybrid structures blend characteristics of arms-length market transactions with modes of governance and control that are more common to large decentralized firms. The thesis of this monograph is that innovation in management control has been central to the emergence, diversity and stability of hybrid organizational forms. Extending the arguments of Coase, Williamson, and Penrose, a review of the accounting literature highlights the important role that management controls have played in transforming the question from explaining firm boundaries to explaining how transactions that appear to be fraught with transactions hazards are rendered profitable and sustainable to transaction partners. We review empirical research in management accounting to support our thesis and identify areas for further inquiry.

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1

Introduction

1.1 Determinants of firm boundaries

Nobel-prize winner, Ronald Coase [1937] launched his seminal work in transaction cost economics (TCE) with the observation that outside of the firm, prices direct resource allocation and production (i.e., Adam Smith's "invisible hand"), while inside the firm, managers or entrepreneurs fulfill these roles. Presuming this outcome to reflect optimizing behavior, he asks why a price system is the best coordination mechanism in some instances, while a manager is best in others? He reasoned that the explanation that best fits the real-world evidence is that "... there is a cost of using the price mechanism (p. 390)" in

market transactions. Thus the existence and boundaries of the firm are explained as the result of managers acting to minimize costs¹:

The question always is, will it pay to bring an extra exchange transaction under the organizing authority? At the margin, the costs of organizing within the firm will be equal either to the cost of organizing in another firm or to the costs involved in leaving the transaction to be ‘organized’ by the price mechanism.

[Coase, 1937, p. 404]

If we looked no further, we might conclude that Coase envisioned a limited, though nontrivial role for management accountants to identify and measure the costs of using markets as compared with the costs of organizing production within the firm. Indeed, Coase describes the roles of management as: forecasting demand, making new contracts (e.g., securing inputs to production), and “... rearranging the factors of production under its control (p. 405).” However, in a prescient series of articles published in 1938 he critiqued cost accounting systems as ill-equipped to support these management functions, in part because accounting does not measure or record many transaction costs [Coase, 1937]. His complaints accord well with modern criticisms of cost accounting [e.g., Miller and Vollmann, 1985, Cooper and Kaplan, 1987, Johnson and Kaplan, 1987] and with research about accounting innovations that make cost data more relevant for decisions [e.g., Anderson, 1995, 2007, Anderson and Sedatole, 2013], including decisions related to firm boundaries and cost management within the supply chain [Anderson and Dekker, 2009a,b]. Although the costs that Coase identified as essential to the understanding of markets and firms lie outside of cost accounting systems, in this monograph we demonstrate that their

¹While Coase focuses on cost minimization, he does so under the assumption of competitive markets in which cost minimization is equivalent to profit maximization. When products are differentiated, inter-firm management controls can also play a role in increasing revenues as compared to what either trading partner could obtain alone [e.g., Penrose, 1959, Prahalad and Hamel, 1990, Barney, 1991, Zajac and Olsen, 1993].

influence on the design of management controls has, nonetheless, been significant.

Building on Coase's work, Williamson [1975] elaborates the nature of transaction costs and their relation to firm boundaries.² He links the characteristics of transactions (e.g., asset-specificity, uncertainty, interdependence, frequency) as well as the limits to human decision making (i.e., bounded rationality) to increased costs of using markets. In particular, he argues that transaction characteristics that evince an inability to write, execute or enforce complete contracts, which presage opportunistic hazards and coordination failures, define the comparative cost efficiency of vertical integration (termed, 'hierarchy') relative to markets. In Figure 1.1, this association is depicted in the vertical arrow relating transaction characteristics that proxy for risks to firms' boundary decisions, optimal investments in control, and acceptance of residual risk. Importantly, transaction costs also apply when transactions are completed within the firm. The tendencies of internal operations to become inefficient, and of managers to hoard resources (i.e., slack-building), diminish 'high powered' profit incentives [e.g., Alchian and Demsetz, 1972, Vancil, 1978]. An extensive accounting literature grew out of the seminal work of Anthony [1965] on management controls that decentralized firms use to mitigate these problems. Comparing alternative modes of organizing transactions, hierarchy is preferred to markets when the transaction costs associated with incomplete contracts and opportunism become large in relation to the inefficiencies associated with the loss of high-powered incentives.³

²The genesis of the idea that transaction characteristics are associated with the level of transaction costs can be traced to Coase's argument that "... the costs of carrying out exchange transactions through the price mechanism *will vary considerably as will also the costs of organizing these transactions within the firm*" (1937, p. 396, italics added). For example, Coase identified the spatial distribution of transactions, the dissimilarity of new transactions as compared to ongoing transactions, and uncertainties about input prices, as examples of transaction features that influence the cost of using the price mechanism.

³Strictly speaking, Coase predicts that it is the sum of production and transaction costs that is minimized in the choice of firm boundaries. Studies that focus on testing the influence of transaction costs on firm boundaries typically assume that production costs are identical between the firm and external suppliers. This assumption may be appropriate if minimum efficient scale is low and production

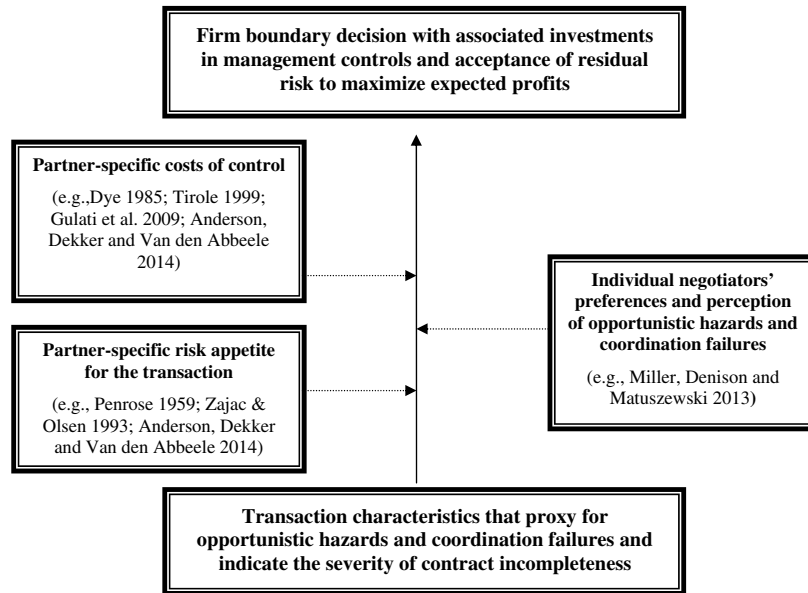


Figure 1.1: Factors influencing firm boundaries and investments in management controls.

Transaction costs are indicated by transaction characteristics that are associated with the inability to write complete contracts (i.e., asset-specificity, uncertainty, interdependence of partner actions, transaction magnitude and frequency). If transaction costs of accessing markets are sufficiently large, the firm produces internally and invests in management controls to limit the loss of high-powered incentives. If transaction costs of accessing markets are comparatively small, the firm buys the product according to a (perhaps incomplete) contract. For moderate transaction costs, firms employ hybrid modes of transacting with an engaged partner. The magnitude of transaction costs associated with the transaction influences the appropriate balance between investments in controls to reduce the probability of control loss and acceptance of some residual risk. The transaction costs associated with a transaction's characteristics may be moderated by partner-specific expertise in accessing markets — termed the partners' 'costs of control.' For transactions that rely on the scarce, inimitable resources of one or both partners to create differentiated products, the perceived risks associated with contract incompleteness are countered by the partners' assessments of the expected abnormal returns to collaboration — returns that are unobtainable by either partner acting alone. Finally, the association between transaction characteristics and the decision to respond with investments in management controls is moderated by individual negotiators' preferences for economic and noneconomic (e.g., fairness) outcomes and their perception of the likelihood of opportunistic hazards and coordination failures in the specific transaction.

Source: adapted from Anderson et al., 2014c.

The predictions about firm boundaries that follow from TCE are broadly explored in the economics and management strategy literatures.⁴ Importantly, early empirical studies [e.g., Monteverde and Teece, 1982] implicitly treat transaction costs as immutable, homogeneous across firms, and exogenously determined, and these papers frame firms' cost-minimizing responses as a choice between markets and hierarchy. The assumption of immutable transaction costs is, however, at odds with Coase's expectation that time-varying transaction costs would cause firms to reach different make–buy decisions over time⁵:

. . . dynamic factors are also of considerable importance, and an investigation of the effect changes have on the cost of organizing within the firm and on the marketing costs [*his term for the costs of accessing markets*] generally will enable one to explain why firms get larger and smaller.

(p. 30, remark in italics added)

The assumptions that transaction costs are homogenous and exogenous have also been challenged. For example, Dye [1985] and Tirole [1999] note that theorists typically assume a homogeneous functional form for contracting costs (e.g., fixed cost of contracting, variable costs 'per contingency') with little empirical evidence to support this choice.

entails no proprietary processes. Conversely, studies of firm boundaries where production costs differ between the firm and a supplier, due perhaps to economies of scale or to inimitable competitive advantage in production, often give little mention to transaction costs, presumably reasoning that the production cost differences are so great as to make transaction cost differences immaterial to the decision.

⁴David and Han [2004], Geyskens et al. [2006] and Shelanski and Klein [1995] provide reviews and analyses of empirical research on transaction cost economics.

⁵Coase [1937, p. 397] notes how the transaction costs of internal production associated with the transaction characteristic of spatial separation between firms and customers were diminished with the introduction of the telephone and telegraph, allowing firms to grow to serve larger geographies. This example is one of technological innovation influencing transaction costs. Additional exogenous forces that are commonly linked to time-varying transaction costs are changes in regulations (e.g., the Sarbanes–Oxley Section 404 assignment to the firm of the responsibility exercising control over suppliers with its associated liability for supplier failures) and changes in the judicial system (e.g., changing the cost of accessing the courts or the expectations of court judgments).

Invoking the possibility of heterogeneous, endogenous transaction costs, they posit that firms with differing expertise and efficiencies in contracting face differing costs of accessing markets.⁶ This view is consistent with Coase's (1937, pp. 388, 405) reference to management as a 'fourth factor of production' (credited to the work of Marshall) that generates returns through superior coordination of firm activities. It also fits empirical studies and anecdotal evidence that firms differ in the ability to manage strategic alliances [Lorenzoni and Baden-Fuller, 1995, Lorenzoni and Lipparini, 1999, Anonymous, 2001]. As depicted in Figure 1.1, partner-specific costs of transacting moderate the association between transaction characteristics that proxy for risk and decisions about firm boundaries and optimal investment in controls and residual risk. For example, a firm with expertise in managing alliances might assess the risks of coordination failure to be low for a given transaction and thus, optimally invest less in controls aimed at detecting or preventing these failures than a firm without such expertise. Thus management expertise moderates the control response to the transaction.

While Coase explained expanding firm boundaries as a transactions-cost minimizing outcome, Penrose [1959] theorized that firms grow to exploit scarce, inimitable resources.⁷ In this 'resource-based view' (RBV) of the firm, scarce, inimitable resources create barriers to competition that give rise to abnormal returns, or 'profit' [Barney, 1991]. Coase and Williamson's work provides an explanation for why capturing these returns requires firm growth; specifically, if legal systems are ill-equipped to protect rights of ownership, resources are more efficiently protected and exploited within the boundaries of the firm. Thus,

⁶Gulati et al. [2009] find that partner-specific experience transacting confers efficiencies in subsequent contracting with that partner, but that general experience with inter-firm transactions does not confer contracting efficiencies.

scale or to inimitable competitive advantage in production, often give little mention to transaction costs, presumably reasoning that the production cost differences are so great as to make transaction cost differences immaterial to the decision.

⁷For example, a patent, with the intellectual property protections and exclusivity that it conveys, may become the basis for producing a wide array of products that rely upon the basic technology of the patent. When legal systems and management controls make it possible for firms to obtain returns from these resources without subsuming all stages of production, hybrid arrangements such as technology licensing, joint ventures, or collaborative manufacturing may emerge.

explanations for firm boundaries emerging as a result of cost minimization are augmented by Penrose's observation that strategic resources that confer market power and revenue growth often necessitate internal development.

These complementary theories of the firm give rise to two forms of transaction risk: relational risk and performance risk [Das and Teng, 2001]. Relational risk arises when firms are unable to align their self-interest for mutual gain. This mirrors concerns in both theories about opportunistic behavior and how value is distributed between (or appropriated by) exchange partners. Performance risk describes the potential failure to achieve collaborative objectives and value creation, despite full cooperation. This mirrors the costs of coordination (and risk of coordination failure) that both theories recognize as being greater for communications that span firm boundaries. The two forms of risk are distinct but may arise in tandem; as for example, when performance risk accompanies complex, interdependent tasks in uncertain environments, and when relational risk emerges in the form of opportunistic behavior that is facilitated by these same factors [Das and Teng, 2001].

1.2 The emergence of stable hybrid organizational forms

Until the 1990s, scholars found TCE and RBV largely satisfactory in explaining firm boundaries. At that time, the empirical predictions that firms would avoid risk through 'hierarchy' began to break down Holmstrom and Roberts [1998] and the phenomena of hybrid inter-firm relationships (variously labeled: strategic alliances, joint ventures, networks, consortia, coalitions, and supply-chain partnerships) became widespread Anderson and Sedatole [2003]. Initially, strategy experts characterized these configurations as fragile experiments that would either succeed and progress to a 'merger,' or would fail and disappear. In other cases, they were put down to 'marriages of convenience' designed to skirt government regulations; for example, when partnering with an international company facilitated a U.S. company's access to international customers, with otherwise no substantive collaboration [e.g., Porter, 1980, 1985]. However, predictions of the hybrids' demise

were not borne out; a stable middle ground between arms-length, market transactions and large, vertically integrated firms emerged and the question of whether to ‘make versus buy’ expanded to include a third option: ‘make, buy or ally.’

Williamson [1991] acknowledged that the extreme solutions of ‘market’ and ‘hierarchy’ might give way to intermediate, ‘hybrid’ organizational forms that mitigate opportunistic hazards and coordination problems while retaining the high-powered incentives of inter-firm transacting. Penrose’s characterization of the impetus for growth also explains why internal growth may not be possible; growth opportunities may exist in the combination of two firms’ inimitable resources and collaboration may be the only feasible path for exploiting the opportunity. Thus, from an RBV perspective, hybrid organizations are employed by firms seeking to combine scarce, inimitable resources to create value in ways that neither firm alone can achieve. In Figure 1.1, a hybrid transaction that is motivated by the impossibility of anything other than collaboration and by the revenue potential of new uncontested markets, moderates the way both parties respond to risks that would normally be ascribed to a given set of transaction characteristics. The unique position afforded each party by its inimitable resources, creates a partnership-specific appetite for the transaction. For both theories, what matters is not whether a contract can be made complete, but whether the contract can be made ‘complete enough’ (perhaps augmented with management controls) so that profits are greater than what can be achieved through internal production.

As hybrid forms became the ‘new normal’, researchers turned to understanding factors that caused them to dominate both the market and hierarchy options as the most profitable means of structuring a relationship. Consistent with Coase’s early predictions, scholars in law and economics looked to changing external forces (e.g., competition, international trade barriers, regulations, and enforcement mechanisms) to understand this new organizational structure. Management accounting scholars focused instead on changing circumstances within firms to explain the sustainability of new hybrid forms. Unlike franchise agreements that gained popularity in the 1950’s, the inter-firm arrangements of the 1990’s did not rely solely, or even primarily, on contracts to

achieve control or coordination [e.g., Anderson et al., 2014b]. Indeed, inter-firm controls bear a greater resemblance in their variety and form to management controls used within firms [e.g., Anthony, 1965, Ouchi, 1979, Simons, 1995] than to even the most extensive contracts that typify franchise arrangements. The incomplete contracts and associated residual risks that might have precluded transactions in earlier periods, are rendered sustainable in part through the use of management control mechanisms, such as improved measurement of actions and outcomes, and joint collaborative practices that enhance communication and opportunities for informal monitoring [Anderson et al., 2014b, 2015, Dekker, 2004, Dekker et al., 2013]. Indeed, the management control response to the problems of inter-firm transaction risks has strong parallels to Anthony's [1965] characterization of internal controls in promoting goal congruence and providing information for management decision-making.⁸ It is in this space of 'interorganizational control' that management accounting scholars have made significant contributions to understanding the nature of the modern, interconnected firm and thereby, extended the Nobel prize-winning work of Coase and Williamson.

For this review, we consider two streams of empirical management accounting research that are distinguished by their focus and typical research methods. One stream of research focuses on the determinants of investments in contracts and other management controls. These studies have a strong parallel in economics and management studies that explain organizational boundaries as an optimal response to transaction risks and profit opportunities. Management accounting scholars start from the premise that firm boundaries are but one element of 'structure' [Chandler, 1966, Rumelt, 1974] that is enacted in response to transaction risks and that enables strategy execution. Studies that focus strictly on contractual controls frequently employ

⁸Consistent with Chandler's [1966] contemporaneous development of the 'strategy — structure — performance' framework, Anthony [1965] conceived of management controls as essential structuring devices to enable and support strategy execution. Later Demski and Feltham [1976] would refer to Anthony's aims for internal controls as the 'decision-influencing' (i.e., goal congruence) and 'decision-facilitating' (i.e., information provision to coordinate the action of disparate parties) roles of management control.

analysis of archival data on contracts [e.g., Costello, 2013], at times augmented by survey data about the transaction [e.g., Anderson and Dekker, 2005]. Studies that consider a broader set of management control practices typically employ surveys or field-based data collection [e.g., Anderson et al., 2014b].

Another stream of management accounting research that we consider focuses on how the stability of hybrid forms is affected by individual managers who both negotiate and manage inter-firm transactions under the influence of management controls. As depicted in Figure 1.1, some studies in this research stream recognize the potential moderating effect of key individuals' perceptions of risk on initial management control investments; noting that these perceptions may be influenced by invariant individual characteristics (e.g., preferences for 'fair' outcomes), by individuals' choices (e.g., the decision to share cost data), and by the way that the key individuals from each firm interpret and respond to the information shared in multi-stage negotiations. Other studies move beyond the *initial creation* of hybrid forms, and associated contracts and controls, to study the dynamics of *maintaining* hybrid transactions. Economists have long grappled with the role of emergent information as a source of transaction costs. Management accounting scholars in this second research tradition examine how management control systems influence the interpretation of emergent information by key individuals (e.g., the question of whether monitoring in a long-lived relationship indicates distrust). We do not depict system dynamics in Figure 1.1; however, this research might be construed as a feedback loop between investments in control and individual negotiators' perceptions of transaction risks and coordination failures. Consistent with its focus on individual decision-making and the processes that accompany the inception and management of hybrid forms, studies in this second stream of management accounting research on hybrid organizational forms typically employ experimental methods.

1.3 Scope and organization

The thesis of this study is that inter-firm management control is central to generating the returns to hybrid organizational forms hypothesized

by Coase [1937] and Williamson [1975]. We posit that innovations in management control (in conjunction with external factors, such as effective courts and property rights law) have enabled and made hybrid organizational forms more durable. In particular, we anticipate that management controls have acted to enhance the high-powered incentives of the market while diminishing or overcoming opportunistic hazards and coordination failures anticipated by the TCE and RBV theories. Our objective is to demonstrate with reference to a selection of contributions in the management accounting research literature, how controls have been used to mitigate risk and to facilitate collaboration in inter-firm transactions. We do not offer an exhaustive review of the literature; rather, we use selected studies to highlight the trajectory of inquiry since hybrid forms became routine, and thus to support our thesis.

Studies of inter-firm management control typically take as given that transacting firms have chosen to employ a hybrid organizational form, and we maintain this assumption, referring the reader to the economics and management literatures for studies of the choice of organizational form. We limit our review to empirical studies that employ a broad array of research methods: field-based qualitative methods, field-based archival methods, survey methods, lab-based experimental methods; excluding from consideration the analytic accounting literature on inter-firm contracting [see Baiman and Rajan, 2002, for a review of this literature]. Our aim is to highlight the central themes that have animated the research inquiry and to identify emergent research streams that offer promise for advancing our understanding of inter-firm management controls.

The paper is organized in six sections. In Section 2, we take as our point of departure the literature that examines how (albeit incomplete) contracts are used to control opportunistic hazards and to facilitate coordination in inter-firm transactions. Researchers in business strategy have also worked in this area; however, because the terms of incomplete contracts often rely upon accounting data and reference the use of management controls aimed at aligning incentives or coordinating partner actions, management accountants have contributed unique insights

to this question. In Section 3, we move beyond the formal contract to consider other mechanisms of control that are employed to mitigate risk and sustain hybrid organizational forms. Just as detailed contract specifications shed light on the emergence of hybrid transactions that had previously seemed unsustainable, consideration of a broader array of formal management controls sheds light on how hybrid organizations use a portfolio of controls that align partner incentives and promote efficient coordination. Sections 2 and 3 focus on the contingent relationship between transaction risks and management controls and are premised on firms maximizing long-run profits using a combination of revenue maximization (the focus of RBV theory) and cost minimization (the focus of TCE theory). In Section 4, we review an emergent stream of behavioral research that investigates how individual managers, who negotiate and transact on behalf of firms, influence and are influenced by management controls. These studies integrate the literatures on organizational trust, on cognitive bias in decision-making, and on strategic behavior in sequential negotiations. In so doing, these studies show that negotiations can generate a by-product, namely shared knowledge and understanding, which can create trust (or mistrust) and in turn, influence the stability of hybrid forms and the perceived need for management control. We conclude in Section 5 with a discussion of directions for future research.

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