

# **The Influence of Organizational Form on Managerial Discretion**

by

**Na Eun Cho**

A dissertation submitted in partial fulfillment  
of the requirements for the degree of  
Doctor of Philosophy  
(Business Administration)  
in The University of Michigan  
2013

Doctoral Committee:

Associate Professor Sendil K. Ethiraj, Chair  
Professor Gautam Ahuja  
Professor Kathleen M. Sutcliffe  
Associate Professor Frederick F. Wherry  
Assistant Professor Felipe A. Csaszar

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**To my family**

## **ACKNOWLEDGEMENTS**

As I approach fulfillment of the requirements for obtaining a doctoral degree from the University of Michigan, I wish to express my profound gratitude to all those who have accompanied me on this journey of several years, on the good days as well as the bad. I could have not completed this journey without all of you, including many whom I cannot name here.

I am deeply indebted to my dissertation committee members. First and foremost, I owe a debt of gratitude to my advisor and dissertation chair, Sendil Ethiraj, for his direction, guidance, and support. Sendil has been most generous with his time, offering keen insight and timely feedback on my research during the past years. His contributions go well beyond this dissertation. He has provided eminently helpful advice on everything ranging from finding new research ideas, to preparing for comprehensive exams, to presenting my work at conferences, to searching for jobs in academia. Moreover, he always made certain, when giving advice, that my happiness was the number one criterion, which I truly appreciate. As mentor and advisor, he has given far more than I would ever ask or could possibly expect. My appreciation also goes to Gautam Ahuja for his considerate advice and generous support not only as department chair, but also as a committee member. Despite his extremely busy schedule, Gautam has offered thoughtful and critical comments and pushed my thinking in developing this dissertation. I am also deeply grateful to my other committee members, Kathie Sutcliffe, Fred Wherry, and

Felipe Csaszar, for insightful and invaluable feedback and suggestions that significantly contributed to the development and refinement of, and for motivating and encouraging me throughout the process of completing, this dissertation. I am honored to have them all on my dissertation committee.

I would like to extend my thanks as well to several faculty members at the University of Michigan. Faculty members in the Department of Strategy, in particular, took time out of their schedules to make their expertise and advice available to me. I have greatly benefited from their comments in brown bag seminars, practice job talks, and one-on-one meetings. I also thank Chris Feak in the English Language Institute (ELI), who provided not only timely reviews of my writing, but also constant support and solutions to a number of difficulties that I encountered in the pursuit of my degree.

I am very grateful, too, to my friends, some of whom deserve special mention. I have enjoyed the companionship of several colleagues in Strategy, including some who have already left Michigan, among them, David Benson, Heewon Chae, Yoonju Cho, Anne Fleischer, Gigi Giustiziero, Casidhe Horan, Gareth Keeves, Bo Kyung Kim, Heeyon Kim, Ken Lobingier, Sara Ryoo, Guy Shani, Vivek Tandon, Maggie Zhou, and David Zhu. I am especially grateful to John Chen and Sun Hyun Park. I will never forget the willingness of my so-called “lovely” cohorts to spend hours reading my early drafts, offering constructive comments, and sitting through the unpolished, informal talks that preceded my formal talks. I am very blessed to have these two as my cohorts. I also offer sincere thanks to Pranav Garg for his time taking notes for me whenever I presented my work these past years. I truly appreciate his help and friendship, a steadfast companion even during the emotional storms. Gwen Yu, no matter where she is, helped me find

inner peace and gave me strength to continue in difficult times by offering advice on research and teaching or providing an escape from the ever-present dissertation. I owe much to her encouragement to achieve my goals. I also thank my officemates, Maria Farkas, Sarah Stith, Dadi Wang, Marek Zapletal, and Charles Zhang. I have enjoyed our friendly work environment, and am immensely grateful for their ability to make me laugh, a lot, even during the final stages of my dissertation. I have benefited much from discussions in the Health Management and Policy (HMP) dissertation group meeting conducted by Genna Cohen, Sean Huang, Hyunjee Kim, and Eric Lammers. I am truly grateful for the opportunities I have been afforded to share my ideas with students in other disciplines. I also thank my friends back in Korea, Angela Cho and Sunny Park, who called or sent text messages offering support, sympathy, and encouragement.

I have kept to last my family, to whom I dedicate this dissertation. I owe much to my family for always believing in me and encouraging me to finish my journey at the University of Michigan. My parents have always been there for me, and have never failed to do what they could to further my progress. My journey in pursuit of a Ph.D. would not have been possible without them. For their many sacrifices and unfailing support, love, and encouragement, I dedicate this dissertation to my family.

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## **ABSTRACT**

### **The Influence of Organizational Form on Managerial Discretion**

by

**Na Eun Cho**

**Chair: Sendil K. Ethiraj**

In this dissertation, I explore how managerial discretion varies under different organizational forms, that is, the formal structures by which the behavior of members of firms is coordinated and controlled. In the first study, I examine the effect of ownership type (for-profit, government, and not-for-profit) on managerial discretion. I argue that organizational goals that differ across ownership types affect organizational constraints, which, in turn, determine the level of managerial discretion. Specifically, I hypothesize that the level of managerial discretion will be highest in for-profit, lowest in government, and lie somewhere in between in not-for-profit, organizations. The first study involves both quantitative and qualitative analyses. The study context is the US hospital industry, in which large medical malpractice lawsuits trigger changes in behavior among doctors who want their choices better defended in court. I study the effect of ownership type by examining how the effects of malpractice lawsuits on hospital expenditures differ across

ownership types. In the second study, I examine differences in levels of managerial discretion in the firm relative to the market. This study examines physician discretion in the context of the US hospital industry, specifically in terms of the effect of physician-hospital integration on physician discretion. The research design is a multiple-case, inductive study involving two types of physician-hospital arrangements: an employed model and private practice. This research design enables me to investigate how physician discretion varies across hospital boundaries and understand what organizational costs are incurred after integration.

## **CHAPTER 1**

### **1. INTRODUCTION**

#### **1.1. Theoretical Motivation**

Prior research in agency theory (Jensen & Meckling, 1976), organizational economics (Milgrom & Roberts, 1992), and managerial capitalism (Marris, 1964) has emphasized the negative aspect of giving individual managers discretion. According to these research streams, managers, being assumed to maximize self-utility, are more likely to take actions that deviate from the interests of other stakeholders when they exert greater control over a firm. Authors within these streams of research, tending to believe that high levels of discretion encourage managers to appropriate wealth from other stakeholders and thereby impair firm performance, argue that firms should limit managerial discretion (Fama & Jensen, 1983b; Jensen & Meckling, 1976).

Scholars who tend to view managerial discretion in a negative light emphasize control of managerial discretion in the design of optimal organizational forms, that is, the formal structures by which firms coordinate and control the behavior of their members (Fama & Jensen, 1983a; Fama & Jensen, 1983b; Jensen & Meckling, 1976; Klein, Crawford, & Alchian, 1978; Williamson, 1985). These scholars argue that firms should choose an organizational form that can deliver the desired product at the lowest cost, taking into account the cost of managers' pursuit of personal interests inconsistent with those of other stakeholders. Agency theorists, for example, maintain that firms choose

ownership structures that reduce the costs of owners' and managers' conflicting interests (Fama & Jensen, 1983a; Fama & Jensen, 1983b). Transaction cost economics, taking account of the degree of vertical integration, holds that firms bring transactions within their boundaries to reduce transaction costs that arise from opportunistic behavior on the part of the transacting parties in the market (Williamson, 1975; Williamson, 1981).

These theoretical arguments regarding managerial discretion emphasize value appropriation over value creation. Because self-interested managers with freedom to pursue personal interests are expected to influence the division of surplus by increasing their own remuneration and perks at the expense of the profits of other stakeholders, an increase in managers' share is perceived as a corresponding decrease in the share distributed to other stakeholders. Hence, the conflict between managers and other stakeholders is seen as a problem of dividing the surplus. Reflecting this rationale, these research streams have explored managers' appropriation of the wealth of other stakeholders, the consequences thereof, and conditions that restrict managers' freedom to pursue personal interests.

Relative disregard of the possibility that managerial discretion facilitates value creation is problematic, in particular, to scholars of strategic management, a field largely defined by an interest in understanding strategies for value creation and explaining differences in firm performance (Barney, 1991; Nelson, 1991; Peteraf, 1993; Porter, 1980). A number of scholars have posited that managers play a key role in allocating resources and internal capabilities (Bertrand & Schoar, 2003; Hambrick & Mason, 1984) that are key to achieving superior firm performance (Peteraf, 1993). Thus, firms that choose an organizational design with the singular purpose of limiting managerial

discretion in order to reduce managers' appropriation of the wealth of other stakeholders may well be forgoing opportunities to increase the size of the surplus. In other words, to the extent that severe constraints limit managers' latitude to generate and pursue unique strategic actions, efforts to reduce managerial discretion may be counter-productive from the perspective of strategic management.

The possibility that managerial discretion may facilitate value creation warrants revisiting previous studies' emphasis on the negative aspect of managerial discretion. Prior studies have emphasized as a way to reduce managers' freedom to pursue personal interests the mechanism of aligning incentives between managers and stakeholders (Alchian & Demsetz, 1972; Berle & Means, 1932; Hill, 1967; Williamson, 1983). According to these theories, different firms with similar incentive alignment should have the same surplus size. That this is not the case is due to the fact that the range of strategic actions that may affect value creation can still vary with such organizational constraints as auditing, control systems, budget restrictions, performance reviews, and so forth. To help us understand it as a source of value creation, a new perspective is needed that defines managerial discretion in terms of the range of actions, viewed as neutral, available to managers (Hambrick & Finkelstein, 1987). The wider (or narrower) the range of strategic actions available to managers, the more (or fewer) opportunities there are to improve firm performance. Eschewing the negative view and perceiving managerial discretion to be neutral recognizes that it may potentially affect the size of the surplus, thus benefiting both managers and other stakeholders.

The next logical question, then, is what conditions afford managers more or less discretion. Upper echelon theory attempts to answer this question by positing that (1) the

environmental (e.g., product differentiability and market growth), (2) organizational (e.g., strength of culture and capital intensity), and (3) managerial (e.g., aspiration level and commitment) antecedents determine the level of managerial discretion (Hambrick & Finkelstein, 1987). That we nevertheless still do not entirely understand how different organizational forms affect managerial discretion is due, in part, to differences in interpretations of managerial discretion, some theorists viewing it negatively (Jensen & Meckling, 1976; Marris, 1964; Milgrom & Roberts, 1992; Williamson, 1963), other neutrally (Hambrick & Finkelstein, 1987).

My dissertation focuses on two organizational forms, (1) ownership type (for-profit, government, and not-for-profit), and (2) degree of vertical integration. I chose these forms over others because their respective literatures have been particularly emphatic about the importance of reducing managerial discretion and, concomitantly, of managers' potential appropriation of a disproportionate share of the surplus. Highlighting its role in facilitating value creation, I analyze how managerial discretion, defined as the range of actions available to managers, is affected by different organizational forms. In the first study, I examine how different ownership types (e.g., for-profit, government, and not-for-profit) place limits on managerial discretion through organizational constraints. In the second study, I explore how managerial discretion varies within and outside firms, and the organizational benefits and costs that attend the process of integration.

## **1.2. Dissertation Outline**

The first study reported here examines the effect of ownership type on managerial discretion. I argue that constraints will vary across ownership types that address different

organizational goals, either broadening or restricting the range of actions available to managers. Specifically, I propose that managerial discretion decreases when the number and ambiguity of goals increase, and vice versa. To test this proposition, I examine the effect on managerial discretion of three types of ownership (e.g., for-profit, government, and not-for-profit) that vary distinctly in number and ambiguity of goals.

An exogenous shock that generates changes only in managerial behavior while holding other things constant would enable me to attribute to organizational constraints inherent in each ownership type any variation in managerial behavior. The magnitude of change in managerial behavior could then be interpreted as the level of managerial discretion. This is precisely the identification mechanism I employ in this study.

The exogenous shock in a quantitative study is the award of large, court-mandated damages that arise from medical malpractice lawsuits, which are likely to trigger changes in physician behavior (Danzon, 1991). Specifically, I examine how the effects of malpractice awards differ across these three types of ownership. Since the incentive systems and key elements of ownership are relatively stable, any differences in physician behavior observed across ownership types in response to malpractice awards are likely to be due to the different organizational constraints each imposes.

I also investigate differences in organizational constraints across ownership types by combining a quantitative examination with a qualitative study based on in-depth, semi-structured interviews with physicians and hospital administrators. I reveal through these interviews the range of strategic means available to physicians as a function of constraints like performance feedback, standardized protocols, and financial constraints. This qualitative study further increases our understanding of how physicians who work in



government, for-profit, and not-for-profit hospitals might be expected to behave differently.

In the second study undertaken for my dissertation, I examine how levels of discretion vary between the market and firm, and how internalizing transactions from the market incurs organizational costs to the firm. A dominant view in transaction cost economics (TCE) holds that firms internalize production to limit managers' opportunistic behavior, and thereby reduce the transaction cost of market exchanges (Williamson, 1975; Williamson, 1981). But this central thesis of TCE neglects other changes in managerial behavior that might be induced by shifting transactions from market to firm. I investigate these unexplored, albeit important, changes in managerial behavior by means of organizational tools (e.g., rewards, authority, identification, and coordination) used to reduce opportunistic behavior and coordinate transactions within a firm. Use of such tools, however, may occasion other changes in managerial behavior that can incur costs (e.g., social attachment costs, inefficiency in communication, and influence costs) as well as yield benefits (e.g., shared identity and enhanced coordination) not associated with market exchange. Nor is it clear how managerial discretion changes consequent to internalizing production. Deploying these organizational tools may foster managerial actions to positively influence value creation or distort managerial behavior (Baker, 2002) in ways that negatively affect organizational outcomes. To summarize, our understanding of the consequences, in terms of organizational costs and changes in managerial discretion, of moving transactions from the market to the firm is limited.

The empirical study, like the former study, examines physician discretion in the context of the US hospital industry, specifically in terms of the effect of physician-

hospital integration on physician discretion. The research design I employ is a multiple-case study involving two types of physician-hospital arrangements: (1) an employed model (i.e., an integrated salary model whereby a group of physicians is salaried by a hospital system to provide medical services), and (2) a private practice (i.e., a contractual arrangement between physician practices and a hospital; a physician or group of physicians who practice medicine independently, not as an employee or employees of a hospital). Although there are other types of physician-hospital arrangements (e.g., equity model, foundation, and management service organization), I choose these two arrangements with an eye to examining the distinct effect of physician-hospital integration on physician behavior. This research design enables me to investigate how physician behavior varies across hospital boundaries and ultimately understand the unique organizational costs imposed by integration.

### **1.3. Contributions**

This dissertation will contribute to the field of strategy, emphasizing, in particular, the role of managerial discretion. I propose an alteration to the theoretical framework that adjusts the view of managerial discretion from something negative to something that, carefully designed, can enhance organizational outcomes. Assuming that managers' latitude is exercised only to appropriate firm profits may foster excessive restrictiveness that limits the range of strategic actions that may have the potential to increase firms' surplus. I argue here that managers' latitude can be exercised as well to generate sustainable competitive advantage, and by demonstrating that ownership type and

internalization of production affect managerial discretion, posit organizational form as a key determinant of organizational outcomes.

The theoretical framework for my dissertation also emphasizes that owing to their interdependence, it is naïve to assume that other elements can be held constant when firms attempt to change a particular element (e.g., reduce managers' opportunistic behavior). Altering the function of one element might have a negative impact on the functions of other elements. For example, in a firm, authority might coordinate transactions better than the market by deterring bargaining and hold-ups, but concomitantly generate influence costs and weaken productive activities (Milgrom, 1988; Milgrom & Roberts, 1988). Absent consideration of this interdependence, benefits that accrue to enhancements to one element might be outweighed by costs attendant on unanticipated changes in other elements. In acknowledging the critical role of interdependence in designing optimal organizational forms, my dissertation departs from the previous literature's emphasis on individual elements of firms.

## **CHAPTER 2**

### **2. LITERATURE REVIEW**

#### **2.1. The Concept of Managerial Discretion**

Many theorists and researchers have recently paid attention to the role of managerial discretion in explaining organizational outcomes. With the growing recognition of managers' influence on organizational outcomes (Bertrand & Schoar, 2003; Lieberman & O'Connor, 1972; Weiner & Mahoney, 1981), managerial discretion, albeit with different assumptions and implications, has become an area of interest to scholars of economics and organization theory.

Prior to agency theory and upper echelon theory, however, managers and their discretion had been little acknowledged in theorizing about organizational outcomes. Neoclassical economics treats the roles neither of firm nor manager, considering the former merely a production unit that converts inputs to outputs according to market conditions. Being focused on price equilibrium and optimal allocation of resources, neoclassical economics views the firm and its managers as a black box.

Similarly, theories of industrial organization view the firm as merely a component of industry structure. Industrial organization studies how organizing mechanisms like the free market harmonize productive activities with demand for goods and services, and how variations and imperfections in these mechanisms affect the satisfaction of economic demand (Scherer & Ross, 1990). According to an approach termed the Structure-

Conduct-Performance (SCP) paradigm (Bain, 1951; Mason, 1949), for instance, the structure of relevant markets or industries affects firm conduct, which, in turn, determines performance. This paradigm assumes individual firms to be passive, that is, to make no effort to change industry structure, which is deemed exogenous to firm conduct and performance. SCP also admits little or no role for managers in organizational conduct.

There eventually emerged organizational theories (DiMaggio & Powell, 1983; Hannan & Freeman, 1977; Pfeffer & Salancik, 1978) that considered the effect of managers on organizational conduct and outcomes, but did not go so far as to assert that managers ultimately matter. Inertia in ecology (Hannan & Freeman, 1977), external dependence in resource dependence theory (Pfeffer & Salancik, 1978), and isomorphism in neo-institutional theory (DiMaggio & Powell, 1983) afford little room for managers to influence organizational outcomes.

In contrast to these theories, which either overlook the role of managers or emphasize the constraints faced by individuals, later theories (e.g., agency theory, managerial capitalism, organizational economics, and upper echelon theory) acknowledged roles for management as well as for individual managers. This acknowledgement reflects findings that a significant proportion of variance in firm performance is attributable to managers, independent of industry, strategic group, and year (Bertrand & Schoar, 2003; Lieberman & O'Connor, 1972; Weiner & Mahoney, 1981). In this chapter, I review two streams of research that address managerial discretion in different ways.

### 2.1.1. Managerial Discretion in Economics

Managerial discretion is viewed negatively by research in organizational economics (Milgrom & Roberts, 1992), agency theory (Jensen & Meckling, 1976), and managerial capitalism (Marris, 1964).<sup>1</sup> Organizational economics views managerial discretion as engaging in personal pursuits (“outside activities”) during business hours (Holmstrom & Milgrom, 1991; Milgrom & Roberts, 1992).<sup>2</sup> Agency theory maintains that self-interested, opportunistic managers given a high level of discretion will appropriate firm profits (Fama & Jensen, 1983b; Jensen & Meckling, 1976; Williamson, 1963)<sup>3</sup> and that managers’ pursuit of personal objectives like salary, security, power, status, prestige, and professional excellence deprives firms of productivity gains (Williamson, 1963). Managerial capitalism holds that managers pursue growth over profit maximization because increases in salary, power, and status commensurate with increases in firm size enhance managers’ utility function (Marris, 1964; Misangyi, 2002).

In all three of these contexts, managerial discretion begets opportunistic behavior, negatively influences corporate profits, and thereby impairs owners’ interests of owners, both short- and long-term (Gedajlovic & Shapiro, 1998). In the short term, managers waste firm resources by increasing their non-salary income or consuming perquisites (Jensen & Meckling, 1976; Williamson, 1963). Long-term, managers choose strategies

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<sup>1</sup> The problem of conflicting interest between stakeholders and management is salient when there is separation of ownership and control, and more severe when the ownership is dispersed among atomistic shareholders.

<sup>2</sup> “... [Employees] use that freedom in part to pursue personally beneficial activities. (p.38) It is optimal to give the agent more freedom to pursue personal business when he is financially more responsible for his performance” (p. 41) (Holmstrom & Milgrom, 1991)

<sup>3</sup> “...Control of agency problems in the decision process is important when the decision managers who initiate and implement important decisions are not the major residual claimants... Without effective control procedures, such decision managers are more likely to take actions that deviate from the interests of residual claimants.” (p.304) (Fama & Jensen, 1983b)

according to personal desires regarding firm size or growth over profits. Managers who enjoy high levels of discretion have been shown, for example, to be more likely to adopt acquisition strategies, which would ultimately increase their compensation (Wright, Kroll, & Elenkov, 2002). Similarly, scholars describing the concept of “agency cost of managerial discretion” have shown managers with a high degree of discretion to be less likely to take recourse to debt in capital structure choices because they cannot pursue their personal interests at shareholder expense when free cash flow is used to pay interest (Berger, Ofek, & Yermack, 1997; Jung, Kim, & Stulz, 1996; Stulz, 1990).

### **2.1.2. Managerial Discretion in Upper Echelon Theory**

Managerial discretion has not entirely been disregarded or viewed in a negative light. Upper echelon theory, viewing managerial discretion as the range of strategic means available to managers for pursuing goals set by stakeholders, codes it neutrally (Hambrick & Finkelstein, 1987).<sup>4</sup> Absent particular assumptions about human behavior, upper echelon theory scholars maintain opportunities for their skills and leadership to be reflected in organizational outcomes are greater for managers with high than for managers with low levels of discretion (Hambrick & Finkelstein, 1987).

The literature in upper echelon theory that posits managerial discretion to be the available range of strategic actions has developed such that scholars have identified conditions that enhance and inhibit managerial action. In other words, managerial

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<sup>4</sup> “... Here, discretion will be defined as latitude of managerial action (p.371)... It is useful to comment on the requirement that discretion involve potential actions rather than merely ‘choices’ or ‘decisions.’ The latter are cognitive endeavors, some of which realistically can never get converted into actions. (p.372)”

discretion has been established as a moderator of the association between executive characteristics and organizational outcomes. The extensive opportunities for managers suggest a much stronger association between managers and organizational outcomes in the high-discretion than in the low-discretion case. Section 2.2 covers empirical studies on the determinants of managerial discretion.

### **2.1.3. Summary and Critique**

To summarize, managerial discretion is viewed negatively by the literature on economics, which emphasizes the potential for managers to pursue personal objectives over goals set by stakeholders, and as a value-neutral proposition by literature on upper echelon theory, which acknowledges the potential for organizational outcomes to be affected positively as well as negatively.

The economic literature's emphasis on the negative aspect of managerial discretion can be problematic for two reasons. First, many scholars have found that individual managers are key source of firm performance heterogeneity (Bertrand & Schoar, 2003; Hambrick & Mason, 1984). This implies that having strict constraints to reduce negative managerial discretion may overly limit managers' latitude to generate firm performance differentially. Further, those who view discretion negatively and propose reducing it only by means of the instrument of aligning incentives may fail to appreciate that the true range of actions available to managers is determined by a host of constraints (e.g., auditing, control systems, budget restrictions, and performance reviews) beyond incentive alignment. That discretion can still differ under the same incentive alignment is illustrated by the cases in which alignment between managers and investors



is achieved through stock options that increase managers' financial benefit when the company's stock rises: managers in organizations with loose monitoring systems may be better able to expand the array of options for maximizing profitability than managers in organizations with strict monitoring systems, in which new strategies and products are not easily accommodated without approval. That managers subject to essentially the same level of incentive alignment will enjoy a higher level of discretion in organizations with loose than in organizations with strict monitoring is evidence that focusing only on the instrument of incentive alignment may limit our understanding of managerial discretion.

Therefore, in my dissertation, I take the neutral view in order to explore the important role of managerial discretion in facilitating value creation and identify the true determinants of discretion level, leaving the performance implications of discretion for future research. The present research makes a distinction between firms with high and low discretion, absent which it is difficult to discuss the effect of managerial discretion on performance. Identifying the underlying mechanism that determines discretion level will broaden our understanding of its performance implications. In the next section, I review the previous literature on the determinants of managerial discretion.

## **2.2. Studies of Managerial Discretion as Latitude in Actions**

### **2.2.1. Determinants and Measurement of Managerial Discretion**

The concept of managerial discretion in actions introduced by Hambrick and Finkelstein (1987) theorizes it to be a function of (1) the task environment (e.g., product differentiability, market growth, industry structure, demand instability, quasi-legal constraints, and powerful outside forces), (2) internal organization (e.g., inertial forces,

size, age, strength of culture, capital intensity, and resource availability), and (3) managerial characteristics (e.g., aspiration level, commitment, and cognitive complexity).

Research aimed at operationalizing the concept of managerial discretion has been preoccupied with industry level conditions, the measure most commonly explored being variation across industries (Finkelstein & Hambrick, 1990).<sup>5</sup> Finkelstein and Hambrick's (1990) examination of whether the relationship between top management team (TMT) tenure and organizational outcome is moderated by managerial discretion, for example, used industry as a measure of managerial discretion. Grouping industries according to degree of managerial discretion—computer industry, high discretion; chemical industry, moderate discretion; natural gas industry, low discretion—they found the association between TMT tenure and performance to be greater in the computer industry than in the natural gas industry. Hambrick, Geletkanycz, and Fredrickson (1993) again relating different industries to different discretion levels (food and beverage, computing equipment, and scientific and measuring equipment industries to high discretion; public utility, natural resource, and telecommunications service industries to low discretion), found the relationship between performance and commitment to the status quo to be moderated by discretion level. Similarly, Haleblan and Finkelstein (1993), in their study of whether the relation between team size and CEO dominance to firm performance is stronger in high or low discretion environments, used the computer and natural gas industries as their indicators of high and low discretion, respectively. To better justify their choice of industries and their link to discretion levels, Hambrick and Abrahamson

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<sup>5</sup> Some scholars, however, examined the effect of macro-environmental factors (such as the national setting) affect managerial discretion (Crossland & Hambrick, 2007)

tried to establish an overall measure by asking scholars and security analysts to assess the level of discretion in each industry (Abrahamson & Hambrick, 1997; Hambrick & Abrahamson, 1995).

In contrast to this preoccupation with industry measures as a proxy for managerial discretion, other studies have used firm- and individual-level variables to measure managerial discretion. Boyd and Salamin (2001), Rajagopalan & Finkelstein (1992), and Rajagopalan (1997), using firm-level variables, viewed “prospector” firms as high discretion and “defender” firms as low discretion. Finkelstein and Boyd (1998), measuring discretion using six indicators, including firm-level variables, like growth and capital, R&D, and advertising intensity, found that (1) the greater the level of managerial discretion, the greater the CEO compensation and (2) firm performance increases when discretion and compensation are aligned. Aragón-Correa, Matías-Reche, and Senise-Barrio (2004), measuring managerial discretion by means of individual-level variables, specifically, membership in a dominant coalition, explored whether environmental commitment is associated with high levels of managerial discretion. Boyd & Salamin (2001), using position in a firm’s hierarchy (from employees to managing directors) as a proxy for managerial discretion, showed that discretion has both main and interactive effects on corporate pay systems. Lastly, Carpenter & Golden (1997) used questionnaires to solicit individual participants’ evaluations of the levels of discretion they believed they possessed.

### 2.2.2. Summary and Critique

The latter studies of managerial discretion (latitude in actions) notwithstanding, two gaps continue to be observed in existing studies. First, we still lack an understanding of how firm-level variables affect managerial discretion. Compared to preponderance of studies focused on the industry (Abrahamson & Hambrick, 1997; Datta, Guthrie, & Wright, 2005; Datta & Rajagopalan, 1998; Datta, Rajagopalan, & Zhang, 2003; Finkelstein & Hambrick, 1990; Halebian & Finkelstein, 1993; Hambrick & Abrahamson, 1995) and individual (Aragón-Correa, Matías-Reche, & Senise-Barrio, 2004; Boyd & Salamin, 2001; Carpenter & Golden, 1997) levels, relatively few studies have adopted a firm-level perspective. Considering that firm strategies are key determinants of firm performance, especially in the field of strategy, what little has been done—“strategic emphasis – prospectors vs. defenders (Miles & Snow, 1978)” (Boyd & Salamin, 2001; Rajagopalan, 1997; Rajagopalan & Finkelstein, 1992) and “R&D or advertising intensity” (Finkelstein & Boyd, 1998)—is still insufficient.

Second, few studies have directly measured managerial discretion. The lack of a direct measure is associated with the way the concept of managerial discretion first emerged in upper echelon theory. Hambrick and Finkelstein (1987) resolved the tension between the deterministic perspective that managers do not matter much and the strategic management perspective that they do by introducing the concept of managerial discretion. Thus, finding the conditions under which managers have a greater impact on organizational outcomes received more attention than did testing whether specific determinants increase or decrease managerial discretion. There was, for example, considerable interest in assessing whether the relationship between TMT tenure and

strategic persistence is stronger in the computer industry than in the natural gas industry (Finkelstein & Hambrick, 1990), but little interest in determining whether managers enjoy greater latitude with respect to strategic action in one or the other of those industries. Scholars simply inferred an extensive range of action from the increased variance explained by executive characteristics under certain conditions.

I attempt to fill these gaps in the prior literature by focusing on how firm-level variables, especially organizational forms, affect managerial discretion. In the following chapter, I examine the effect of ownership type on managerial behavior. In the fourth chapter, I describe different levels of discretion in the market and in the firm. I depart from previous studies that merely inferred discretion from change in variance by measuring managerial discretion empirically.

## CHAPTER 3

### 3. HOW MANAGERIAL DISCRETION VARIES ACROSS OWNERSHIP TYPES

#### 3.1. Introduction

With the advent of the industrial revolution and rise of firms with significant capital assets, questions of how best to design ownership types and how to allocate rights to profits among stakeholders have remained central to the study of organizations (Berle & Means, 1932; Hansmann, 2000; Veblen, 1924).<sup>6</sup> Originally, the classical theory of ownership views how firms choose optimal ownership types in terms of a tradeoff between risk bearing costs and agency costs (Demsetz, 1997; Jensen & Meckling, 1976). Risk bearing costs reflect the limited ability of a concentrated set of owner-managers to diversify firm-specific risks, while agency costs reflect the potential for managers to appropriate the capital of many arm's-length investors. By comparing these competing costs for each transaction, firms choose ownership types so as to minimize these competing costs across a range of transactions (Jensen & Meckling, 1976).

The idea that an equilibrium ownership type is chosen to balance the tradeoff between risk bearing costs and agency costs has spawned much of the agency theory literature in this domain (Alchian & Demsetz, 1973; Fama & Jensen, 1983a; Fama &

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<sup>6</sup> Ownership types can variously be categorized in terms of ownership dispersion (concentrated and dispersed), identity of stakeholders (consumers, producers, and risk bearers), and organizational goals (for-profit, government, and not-for-profit).

Jensen, 1983b). Agency theorists argue that risk bearing costs and agency costs vary linearly over the stock dispersion continuum: risk bearing costs are low under dispersed ownership and agency costs are low under concentrated ownership (Berle & Means, 1932; Fama & Jensen, 1983b; Jensen & Meckling, 1976). Thus, agency theory maintains that the need to reduce risk bearing costs drives ownership towards common stock corporations with dispersed ownership and the need to control agency costs drives ownership towards sole proprietorship with concentrated ownership. The key mechanism for controlling agency costs is aligning managers' interests with those of owners (Eisenhardt, 1989; Fama & Jensen, 1983b; Jensen & Meckling, 1976). Managers may pursue personal objectives over those of the owners in the absence of disciplining mechanisms, while managerial behavior is argued to benefit managers and owners alike in the presence of incentive alignment.

Although agency theory emphasizes the role of incentives when examining the impact of ownership type on managerial behavior, these incentives are but one instrument. There exist other organizational instruments associated with ownership types such as organizational constraints (e.g., auditing, control systems, budget restrictions, and performance reviews). Thus, managerial discretion can be viewed as spanning a continuum. Where a manager lies on that continuum may be, in part, a function of these other aspects of ownership. For example, the degree of managerial discretion will be lower in organizations with stringent auditing requirements and budgetary controls. In short, different ownership types will likely employ different kinds of constraints that affect the level of managerial discretion. The emphasis here is less on whether particular

ownership types are associated with greater or lesser agency costs than on the different levels of discretion that these ownership types afford.

The first study reported in this dissertation examines the extent of managerial discretion under different ownership types (for-profit, government, and not-for-profit).<sup>7</sup> I argue that organizational goals that differ across ownership types affect the flexibility of managers to pursue personal interests, and thereby the range of strategic actions available to them. Specifically, I argue that when organizational goals are few in number and easily measurable, managers have little room to pursue personal objectives. In this context, stakeholders impose weak organizational constraints, yielding a high level of managerial discretion in actions. Conversely, when organizational goals are many and less measurable, and when organizational outcomes cannot be accurately assessed, stakeholders have incentives to provide specific guidelines that constrain managers' actions, yielding a low level of managerial discretion. Managerial discretion in actions under a particular ownership type thus spans a continuum. At one end of the continuum, managers enjoy full freedom to choose actions that achieve the limited and measurable goals defined by stakeholders. At the other end, managers are relatively constrained in the choice of actions that would enable them to achieve a broad range of less measurable goals.

If the design of incentives is assumed to be the only distinguishing feature of ownership type, then ownership type is expected to have no direct effect on managerial

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<sup>7</sup> Although economists view managerial discretion in terms of managers' freedom to pursue personal interests, that is, in terms of goals (Shen & Cho, 2005), I focus in this paper on Hambrick and Finkelstein's (1987) definition, which views managerial discretion in terms of actions.



behavior. Consequently, Demsetz and his colleagues (Demsetz, 1983; Demsetz & Lehn, 1985; Demsetz & Villalonga, 2001) have argued that if ownership types and incentives are simultaneously chosen to induce optimal managerial behavior, regressing managerial behavior on ownership type will not reveal the true relationship between the two. In contrast to this perspective, I argue that ownership type can directly affect managerial behavior independent of incentives. In fact, various ownership types having different goals will employ different kinds of organizational constraints that affect the range of managerial action or managerial discretion. To empirically identify the direct relationship between ownership type and managerial discretion, I have selected malpractice lawsuits in the hospital industry as an example of an exogenous shock that changes managerial behavior, but does not affect incentives or ownership types. Following this shock, variation in managerial behavior across ownership types may be attributed to the organizational constraints inherent in each type of ownership. I identify the magnitude of change in managerial behavior as managerial discretion.

Medical malpractice lawsuits are likely to trigger changes in physician behavior without immediately altering a hospital's incentive system or the nature of ownership (Danzon, 1991). In light of this, I examine how changes in physician behavior following increases in malpractice awards (the shock) differ across ownership types. My theory is that because the key elements of ownership are relatively stable, differences in physician behavior are likely due to the different levels of discretion afforded by each type of ownership. Specifically, having theorized that the number and ambiguity of goals will generate differences in managerial discretion, I hypothesize that the impact of radical

increases in malpractice awards on physician behavior will be most profound in for-profit, the least in government, and somewhere in between in not-for-profit, hospitals.

The contributions of my study are threefold. First, my study considers organizational constraints as an important new lever that guides managerial behavior, unlike much of the ownership literature that focuses on the lever of incentive alignment. Consequently, this latter approach posits that ownership type itself does not affect managerial behavior due to the endogeneity between ownership type and incentives. In contrast, my analysis affords a theoretical insight that even if ownership type and incentives are simultaneously chosen, ownership type can still generate different managerial behavior due to different organizational constraints within each ownership type.

Second, my analysis contributes to the empirical rigor of the literature on ownership. The static approach that accounts for the endogeneity between ownership and incentives limits our understanding of the effect of ownership because it is hard to separate two mechanisms: organizational constraints and incentives. My unique empirical setting exposes managerial behavior, but not incentives and ownership type, to an external shock, allowing me to separate these two. By showing that ownership type shapes managerial behavior through different organizational constraints, my study enhances our understanding of the effect of ownership.

Lastly, my study helps to illuminate the micro-foundations of managerial discretion. Several extant studies on managerial discretion have measured the conditions under which managers have a greater impact on organizational outcomes. For example,

Finkelstein and Hambrick (1990) assessed whether the relationship between top management team (TMT) tenure and strategic persistence is stronger in the computer industry than in the natural gas industry, and simply inferred an extensive range of action from the increased variance explained by executive characteristics in the computer industry compared to the natural gas industry. Through interviews, I examine, at a micro level, how different ownership types impose organizational constraints. Thus, compared to extant empirical studies on managerial discretion, I can show more directly whether managers enjoy greater latitude with respect to strategic action under one or the other ownership type. Performance feedback, peer pressure, financial constraints, protocols, and guidelines are among the organizational constraints that are key mechanisms of the theory which my qualitative study is designed to elucidate.

The rest of this chapter is organized as follows. I first discuss the relevant literature on managerial discretion as well as the literature on how ownership affects both the bargaining over a surplus and the size of the surplus. After summarizing the literature on ownership and managerial discretion, I develop my principal theory of how different ownership types affect managerial discretion. A description of the hypotheses in a research context, that is, the U.S. hospital industry, follows. Explanations of the quantitative and qualitative designs are followed by my presentation of the results, discussion, and conclusion.

## **3.2. Prior Literature**

### **3.2.1. Ownership and Division of the Surplus**

Firms can fund projects with either inside owner-managers' private monies or capital provided by outside creditors or investors who have no direct role in management. These options incur competing costs (Demsetz, 1997; Jensen & Meckling, 1976). Whereas owner-managers who provide their own capital and perform all transactions internally incur risk bearing costs that reflect a limited capability to diversify (i.e., "too many eggs in one basket"), recourse to debt or equity financing entails either or both of two types of agency costs. Agency costs of debt reflect the propensity for choosing riskier projects that may benefit owner-managers more than bondholders as opposed to pursuing less risky projects that ensure the latter's fixed claims (Jensen & Meckling, 1976). Agency costs of equity reflect managerial behaviors like shirking and perquisite consumption at the expense of equity holders (Jensen & Meckling, 1976). After comparing these competing costs for every transaction, firms choose a source of financing. If risk bearing costs exceed agency costs, outside funding is chosen; if agency costs exceed risk bearing costs, owners put forward their own capital. Throughout this process, firms attempt to minimize the sum of risk bearing costs and agency costs across the range of transactions undertaken. This cost minimization logic explains the assignment of ownership.

Taken together, the tradeoff between risk bearing costs and agency costs and the equilibrium ownership type of the firm are theoretically explained by the classical view of ownership type (Jensen & Meckling, 1976). However, there has been little empirical testing of this classical approach to choosing between inside (through owner-manager

financing) and outside (through debt or equity financing) ownership claims for each transaction. This is because difficulties in measuring and comparing risk bearing costs and agency costs have prevented scholars from exploring the most cost-efficient ownership type. How, for example, are lack of diversification (risk bearing cost) and shirking behavior (agency cost) to be measured? A further difficulty is that the problem of operationalizing costs is exacerbated by the multitude of a firm's transactions, across which risk bearing costs and agency costs must be summed to identify the optimal ownership type.

These empirical challenges have been addressed by agency theorists, in part, by adopting dispersion of stock ownership as a proxy for the sum of risk bearing costs and "agency costs" for an array of transactions (Ang, Cole, & Lin, 2000; Demsetz & Lehn, 1985; McConnell & Servaes, 1990; Morck, Shleifer, & Vishny, 1988).<sup>8</sup> These costs have been shown to vary along the continuum of stock dispersion (see Table 1), from sole proprietorship (i.e., concentrated ownership) to common stock (i.e., dispersed ownership). Under concentrated ownership, risk bearing costs are high and agency costs are low. As ownership becomes dispersed, risk bearing costs decline and agency costs increase. According to agency theory, ownership is concentrated when the diminution of agency costs under unified ownership and control is sufficient to offset risk bearing costs; however, ownership is dispersed when risk bearing costs are sufficiently low to offset the costs of controlling agency problems (Fama & Jensen, 1983b; Jensen & Meckling, 1976).

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<sup>8</sup> Prior studies have measured stock concentration differently (Hambrick & Finkelstein, 1995)(p.181), for example, as concentration among all shareholders (Demsetz & Lehn, 1985), percent ownership by the board (Morck et al., 1988), and percent ownership by the board and all officers (McConnell & Servaes, 1990)

In short, firm-level costs, which are the sum of risk bearing costs and agency costs for an array of transactions, vary with the dispersion of stock ownership, and firms choose the most cost efficient ownership type (in agency theory, the optimal division of ownership between managers and owners). The study of ownership type was rendered empirically amenable by this approach, which allowed researchers to move beyond the analysis of transaction-level costs of risk bearing and agency problems to compare the overall firm-level costs that explain the existence of particular ownership types.

< Insert Table 1 about here >

The key mechanism used by agency theorists to predict optimal ownership types is the incentive alignment between owners and managers (Eisenhardt, 1989; Fama & Jensen, 1983b; Jensen & Meckling, 1976). These theorists assume that agents are self-interested (Berle & Means, 1932). This self-interest is not problematic in the case of concentrated ownership because managers' and owners' interests implicitly correspond; owner-managers maximize their utility from both pecuniary and non-pecuniary returns. In the absence of incentive alignment, which is the case for dispersed ownership, managers might engage in behavior inconsistent with the interests of owners; for example, they may expend firm resources on expensive office designs or lavish birthday parties. Actions of this sort will increase proportionally with the owners' failure to employ effective incentive aligning mechanisms (Fama & Jensen, 1983b; Jensen & Meckling, 1976). Thus, other factors held constant, the more dispersed a firm's ownership, the higher its anticipated agency costs.

However elegantly it explains optimal ownership types, agency theory typically focuses on only one dimension of ownership, namely the dispersion of stock ownership.

Without disputing the importance of stock ownership dispersion, I emphasize here that ownership may encompass a much broader set of attributes and vary by, among other things, profit objective (e.g., not-for-profit and mutual vs. others), identity of stakeholders (e.g., consumers, producers, and risk bearers), organizational goals (e.g., for-profit, government, and not-for-profit), and governance structure (e.g., alliances, corporate ventures, joint ventures, and subsidiaries). Such variation may be found even among entities with the same level of ownership dispersion. Moreover, when the focus shifts to non-traditional organizational forms such as NGOs, hospitals, charities, and universities — entities rarely listed on the stock market — the manner in which ownership rights are assigned cannot be adequately explained by agency theory. Thus, a theory broader in scope is required to understand the implications of alternative ownership types.

Incentive alignment, the key mechanism for restricting managers' freedom to pursue personal interests in agency theory, becomes problematic when we attempt to use it to examine the implications of alternative ownership types. This is because ownership type may incorporate organizational constraints beyond incentive alignment (e.g., tax, auditing, and accounting practices) that may also affect managerial behavior. Even given the same proportional assignment of ownership rights between managers and owners, auditing systems and other organizational constraints may vary significantly.

To summarize, the focus on the incentive alignment mechanism in agency theory has provided a sound theoretical framework for describing the effect of ownership type, particularly dispersion of stock ownership, on the distribution of profits between owners and managers. Because self-interested managers with freedom to pursue personal interests are expected to increase their own remuneration and perks at the expense of the

profits of other stakeholders, an increase in managers' share is perceived as a corresponding decrease in the share distributed to other stakeholders. However, when we consider other aspects of ownership that affect managerial behavior — including auditing, monitoring, and resource allocation — the impact of ownership type can be extended beyond bargaining over the surplus to the size of the surplus. For example, let's assume that company A and company B have the same level of ownership dispersion, and company A has loose auditing and monitoring systems, while company B has strong ones. The relatively weak auditing and monitoring systems associated with company A may accommodate a broader range of managerial actions that may enhance its performance than the strong auditing and monitoring systems in company B. Of key importance here is that the relationship between ownership type and the size of the surplus is not premised solely on incentive alignment. Other aspects of ownership type as well may affect the range of managerial behaviors in ways that might lead to differences in the size of the surplus.

### **3.2.2. Ownership and Size of the Surplus**

The idea that ownership type may affect the size of the surplus was first introduced by Veblen (1924). In explaining his theory, Veblen assumed the motives of owners and managers to be different: owners are interested only in restricting output or raising prices to obtain the highest possible profits, while professional managers are interested in increasing the efficiency of all economic activities. Because the separation of ownership and control can be regarded as a discretionary handover of power from owners to managers, Veblen construed this to imply a shift in managers' motives from



monopoly seeking to efficiency seeking. Given that the efficiency profits that arise from dispersed ownership are sustainable under antitrust law, whereas the monopoly profits that arise from concentrated ownership are not, the size of the surplus is affected. Veblen thus maintained that the separation of ownership from control should positively affect a firm's performance by changing the overall organizational goals.

Further, according to Veblen (1924), differences in the motives of managers and owners reflect differences in training, experience, and preference. Managers with technical training or those involved in scientific management are assumed to increase efficiency. Owners lacking this training or scientific management experience are assumed to be guided by collusion and output restriction to maximize the return on their capital. Whether by training or preference, managers are rarely motivated to pursue monopoly profits and owners are incapable of effectual insights into the use of resources to improve efficiency.

Independent of the underlying reason for the differing motives of managers and owners, Veblen's early observation that ownership type may account for differences in managerial behavior that differentially affect firm performance is noteworthy. Despite Veblen's perspective that ownership type affects the size of the surplus, later studies, including those focused on agency theory, have not developed this idea further.<sup>9</sup> Agency theory, in particular, with its focus on negative aspects of giving managerial discretion (Eisenhardt, 1989; Fama, 1980; Fama & Jensen, 1983b; Jensen & Meckling, 1976),

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<sup>9</sup> Fama and Jensen are the exception in examining how different organizational forms' (open corporations, financial mutuals, and non-profits vs. proprietorships, partnerships, and closed corporations) use of different investment rules might affect surplus size (Fama & Jensen, 1985).

became preoccupied with the importance of limiting, through incentive alignment, managers' freedom to pursue personal interests (Jensen & Meckling, 1976). Subsequent empirical studies have consequently emphasized testing the impact of ownership type on bargaining over profits rather than generating them.

This relative disregard for the possibility that ownership type may facilitate value creation is problematic, especially for scholars of strategic management, a field largely defined by an interest in understanding strategies for value creation and in explaining differences in firm performance (Barney, 1991; Nelson, 1991; Peteraf, 1993; Porter, 1980). Accordingly, I build on Veblen's insight that ownership types generate differences in managerial behavior that affects the size of the surplus. However, I depart from this reasoning by assuming managers' preferences to be constant. Although diversity in managers' preferences is of interest, my goal in this study is not to establish that managers with different preferences can be found within each ownership type, but rather to demonstrate that managers with the same preferences may behave differently under different types of ownership. Thus, eschewing the alternative explanation that managers select into ownership types consistent with their preferences, I examine how organizational factors account for differences in managerial behavior that may further affect the size of the surplus. I use the concept of managerial discretion to describe managerial behavior.

### **3.2.3. Ownership and Managerial Discretion**

As described in the second chapter, managerial discretion has been a topic of interest among scholars of economics and upper echelon theory, but with different implications for their respective disciplines. In economics, proponents of agency theory and transaction cost theory maintain that self-interested managers with a high level of discretion will appropriate firm profits (Jensen & Meckling, 1976; Williamson, 1963). In contrast, upper echelon theory construes managerial discretion (i.e., the range of strategic means available to managers for achieving goals set by stakeholders) to be neutral. Lacking strong assumptions about human behavior (e.g., rationality or opportunism), scholars in upper echelon theory (Hambrick & Finkelstein, 1987) argue that high levels of discretion afford more opportunities for managers' skills and leadership to be reflected in organizational outcomes, whereas low levels of discretion limit opportunities for managers to influence organizational outcomes.

These two interpretations are particularly useful in exploring the impact of ownership type on managerial behavior because each emphasizes a different underlying mechanism in the relationship between ownership type and managerial behavior. Economists emphasize the mechanism of incentive alignment between managers and owners, while upper echelon theorists emphasize the mechanism of various organizational instruments (e.g., auditing, budget restrictions, and resource allocation) that limit the range of actions available to managers. As suggested earlier, the impact of ownership type is expected to differ with each mechanism. Whereas incentive alignment conditions the effect of ownership on bargaining outcomes around the surplus, other

organizational instruments explain the link between ownership type and the size of the surplus.

Although the present study of the effect of alternative ownership types on managerial behavior, and potentially the size of the surplus, adopts the neutral view of managerial discretion, both mechanisms are considered. As mentioned above, incentives that influence managers' pursuit of personal or stakeholder interests are not the only mechanism that underlies the relationship between ownership type and managerial behavior. Managerial discretion, which is determined by various organizational instruments, can be a source of value creation inasmuch as the wider (narrower) the range of strategic actions available to managers, the more (fewer) opportunities there are to improve firm performance.

Despite the role of discretion in actions in explaining the relationship between ownership type and managerial behavior, scholars have paid little attention to how ownership affects managers' latitude with regard to the range of actions available to them. Research aimed at operationalizing Hambrick and Finkelstein's (1987) conceptualization of managerial discretion in actions has been preoccupied with explaining industry-level variation in discretion (Abrahamson & Hambrick, 1997; Datta et al., 2005; Datta & Rajagopalan, 1998; Datta et al., 2003; Finkelstein & Hambrick, 1990; Haleblian & Finkelstein, 1993; Hambrick & Abrahamson, 1995). These studies have found that the relation between executive characteristics and firm performance is stronger in high discretion industries than low discretion industries. Others have used firm-level variables (e.g., "prospector" firms as high discretion and "defender" firms as low discretion) (Boyd & Salamin, 2001; Finkelstein & Boyd, 1998; Rajagopalan, 1997; Rajagopalan &

Finkelstein, 1992) and individual-level variables (e.g., membership in a dominant coalition and position in a firms' hierarchy) (Aragón-Correa, Matías-Reche, & Senise-Barrio, 2004; Boyd et al., 2001; Carpenter & Golden, 1997) to measure managerial discretion. Notwithstanding the extensive extant literature on determinants of managerial discretion, only one aspect of ownership — the dispersion of stock ownership — has been previously studied (Hambrick & Finkelstein, 1995). In order to fill the gap in the previous literature, the first study reported in my dissertation examines how the level of managerial discretion in actions varies across alternative ownership types (government, for-profit, and not-for-profit).

### **3.3. Theory and Propositions**

Ownership types can be classified in various ways including profit objective, stakeholder identity, and ownership dispersion (Hansmann, 2000). My study focuses on ownership types, specifically, government, for-profit, and not-for-profit, that differ in terms of organizational goals. The main theory advanced is that ownership type determines the number and measurability of organizational goals and the corresponding level of freedom of managers to pursue personal interests. This level, in turn, influences organizational constraints on managerial discretion. I argue that when managers' potential to pursue personal interest is high, managerial discretion will be correspondingly low. By the same token, I argue that when managers' potential to pursue personal interests is low, managerial discretion will be high.

When ownership type is characterized by multiple, vague goals, stakeholders, who expect managers to pursue their own interests or to pursue goals that are more

measurable, will compensate by imposing strong organizational constraints designed to monitor and limit managerial discretion. The existence of goal diversity affects managerial behavior because managers can pick and choose the goals. Whether managers can pursue personal or stakeholders' goals is unproblematic if all goals are positively correlated, that is, are complements. However, if each goal embraces the same criteria for generating and selecting among alternative courses of actions, there is no reason to have multiple goals within an organization. More specifically, the presence of multiple goals implies either non-correlation or negative correlations (Meyer, 2002). This, in turn, implies that the pursuit of one goal might impede the achievement of others. Pursuing customer satisfaction, for example, might negatively affect overall financial outcomes. Importantly, when managers can select the goals, they can justify their decisions in terms most favorable to them (Audia & Brion, 2007). Such increases in managers' potential to pursue personal interests instead of goals set by stakeholders are counterbalanced by increases in organizational constraints that reduce managerial discretion.

In addition, when one or more goals are ambiguous or less measurable, managers are likely to respond with effort distortion by shifting attention to more measurable goals (Kerr, 1975), or even introducing more targets as circumstances change (Adner & Levinthal, 2004). In such cases, it is difficult for stakeholders to measure organizational outcomes, that is, to determine whether poor outcomes are a consequence of ambiguous goals or managerial shirking. Thus, to monitor managerial behavior, stakeholders may introduce a bureaucracy that includes fairly rigid and specific guidelines, routines, rules, and public scrutiny that effectively reduce managerial discretion. By the same token,

these restrictions are unnecessary for stakeholders in organizations with a single, clear goal.

Managerial discretion under a particular ownership type is thus viewed as spanning a continuum that reflects the relationship between organizational goals and organizational constraints, as summarized in the following proposition.

***Proposition 1: As the number and ambiguity of goals increases, managerial discretion decreases.***

This proposition then raises the question of how organizational goals might differ across for-profit, government, and not-for-profit organizations. Government organizations exist to effect policy established by legislative enactment or executive order (Peabody & Rourke, 1965; Perry & Rainey, 1988). Apart from making the most economical use of resources, these organizations are obliged to serve the public interest to the best of their ability. The goals of government organizations include, for example, regional planning (Tennessee Valley Authority) or improvements in driver safety (departments of transportation), and are thus often numerous, unordered, vague, and ambiguous (Banfield, 1961; Dewatripont, Jewitt, & Tirole, 1999; Perry & Rainey, 1988). Not-for-profit organizations, like government organizations, exist to serve the needs of various constituencies, but unlike government organizations they are expected to generate revenues to support their social obligations. One such example can be seen in the goal of Doctors Without Borders (Médecins Sans Frontières, or MSF), which is to provide medical care to millions of people in response to catastrophic events like armed conflict,

epidemics, or natural disasters when local health systems fail. The socially desirable goods or services delivered by not-for-profit organizations, however, are provided by their constituencies (or donors) rather than through government subsidies. In marked contrast to government and not-for-profit organizations, for-profit organizations exist to achieve the overarching agreed upon goal of profit maximization.

The goals of these three types of ownership clearly vary in terms of number and ambiguity. The ambiguity of the goals of not-for-profit organizations will lie between the single goal of for-profit organizations and the numerous and ambiguous goals of government organizations. Although both not-for-profit and government organizations strive to achieve multiple goals (e.g., charitable, educational, and humanitarian), the former's limited resources and need to cover costs allow for a clearer demarcation of the boundaries within which managers can pursue their goals. Although it might be argued that not-for-profit organizations have only the single goal of maximizing value for all stakeholders (donors, communities, and so forth), the more general view is that the need to serve multiple constituencies will nevertheless generate the tradeoffs managers need to make in their day-to-day decision-making (Jensen, 2001).

I expect the differences in goals across these three types of ownership to be associated with different levels of managerial discretion. The unambiguous goal of profit maximization of for-profit organizations relieves stakeholders of the need to exercise much control over managerial action, and thus is expected to be associated with a high level of discretion. Conversely, the multiple, ambiguous goals of government organizations impede incentive alignment between managers and stakeholders and prompt stakeholders to restrict managerial action through stringent guidelines or public



scrutiny, and thus are expected to be associated with a low level of managerial discretion (Dewatripont et al., 1999; Dixit, 2002). Further, because of the unlimited ability of government to raise taxes, I expect managerial discretion in actions in pursuit of goals that constitute the social welfare agenda to be severely constrained (Lioukas, Bourantas, & Papadakis, 1993). The level of managerial discretion associated with not-for-profit organizations, the goals of which will be clearer than those of government, but more ambiguous than those of for-profit, organizations will lie somewhere in between, giving rise to the following proposition.

***Proposition 2: The level of managerial discretion will be highest in for-profit, lowest in government, and lie somewhere in between in not-for-profit organizations.***

In summary, different types of ownership lead to different levels of managerial discretion. These differences arise from organizational goals that vary across ownership types, and the necessity to introduce compensating constraints to control for managerial behavior. Emerging from this rationale are specific hypotheses regarding how these types of ownership affect managerial behavior in the research context, namely, the hospital industry.

### **3.4. Empirical Context**

I test my theory and propositions using data from the hospital industry, which is well suited to this study for the following reasons. The hospital industry has features that render stock ownership dispersion (a typical proxy for incentive alignment) less

important. In the hospital industry, the goals of the three prevailing ownership types vary, together with the behavior of the key organizational members, namely the physicians.

More importantly, what makes the hospital industry particularly attractive as an empirical setting is that the direct effect of ownership on managerial behavior can be more readily determined. If incentive alignment was its only determinant, it is hard to observe a relationship between ownership type and managerial behavior because, as pointed out by Demsetz and colleagues (Demsetz, 1983; Demsetz & Lehn, 1985; Demsetz & Villalonga, 2001), ownership types and incentives are simultaneously chosen to induce optimal managerial behavior. In this regard, Demsetz argued that under a dispersed ownership, the negative impact on performance of, for example, shirking or consumption of amenities will be offset by a newly-adjusted incentive system. Given that incentive systems can be adapted to ownership type, there should be no direct relationship between ownership type and managerial behavior (Demsetz, 1983). I propose, however, that, owing to features apart from stock dispersion (which represents the incentive alignment mechanism), ownership type does have a direct effect on managerial behavior. In order to empirically identify this effect, I need a setting where some exogenous shock induces a shift in managerial behavior without affecting ownership types or incentive systems, which will then allow me to trace the relationship between ex ante differences in ownership types and changes in managerial behavior in response to the shock. One such shock is the threat of malpractice liability in the hospital industry. This threat is well suited to this study because it can be expected to do just that, generate changes in physician behavior but not in hospital incentive systems or ownership type, at least in the short-run.

The threat of malpractice liability is likely to lead physicians to provide medical care that is not, or is perhaps only marginally, beneficial, or to withhold beneficial care that is perceived to be risky (Danzon, 1991; Sloan & Shadle, 2009). For example, physicians order unnecessary tests and drugs in order to have their choices better defended against future litigation. Such liability-induced changes in physician behavior would have not occurred in the absence of liability and are expected to entail costs in excess of benefits (Danzon, 1991).

The effect of the threat of malpractice liability on physician practice patterns is empirically well documented (Baicker, Fisher, & Chandra, 2007; Dubay, Kaestner, & Waidmann, 2001; Kessler & McClellan, 1996; Localio et al., 1993). For instance, many researchers have found that concerns about malpractice liability lead physicians to order unnecessary procedures. Examples include Localio et al. (1993), who found that the probability that a child will be delivered by Cesarean section increases under the threat of medical malpractice, and Kessler and McClellan (1996), who found that high malpractice liability pressure is associated with more intense hospital care and higher subsequent payment in the context of acute myocardial infarction and ischemic heart disease. Another study recently found that a 10% increase in malpractice payments per physician is associated with a 1.0% increase in Medicare expenditures for physician services, with no effect on mortality rates (Baicker et al., 2007). Other studies have identified the avoidance of high-risk patients or procedures as liability-induced changes in medical practice. For example, Dubay et al. (2001) found that in the presence of a greater threat of malpractice liability, prenatal care is likely to be delayed and prenatal visits fewer, with no adverse effect on the birth outcomes measured. In this study, because I am unable to

observe such selection-based defensive behavior, I narrow my scope to changes in managerial behavior as reflected in increasing ordering of tests in response to large malpractice shocks.

Following previous studies, I posit that sudden increases in malpractice awards, which proxy for the threat of malpractice lawsuits, will change physician behavior in ways that will be reflected in increases in hospital expenditures. Given that physicians and hospitals in the same state are judged by the same legal standard, I assume that a sudden increase in the threat of malpractice liability in a given state affects not only physicians engaged in the litigation, but also other physicians working in other hospitals in the same state. When doctors see their colleagues penalized in a finding of malpractice, concerns about being sued or having credibility damaged arise, leading to defensive strategies. The lack of an observable impact on the overall quality of medical care notwithstanding, I argue that doctors are likely to order unnecessary tests and prescribe unneeded drugs to better defend themselves in future litigation, and that this defensive behavior will be translated into increases in hospital expenditures.

*Hypothesis 1: Increases in malpractice awards are associated with increases in hospital expenditures*

This raises the question of the role of ownership type in the setting of the threat of malpractice liability. I expect that the magnitude of physicians' responses, again translated into increases in hospital expenditures, to the threat of malpractice liability will depend on the level of discretion they enjoy in each ownership type. This is due to the

threat of malpractice liability inducing physicians to change their behavior, to the extent that organizational constraints allow physicians to do so. When facing strong organizational constraints, physicians with low discretion may not be able to respond to the threat of malpractice liability, even if they want to. By the same token, weak organizational constraints and a corresponding high level of discretion will allow physicians to respond to the threat relatively freely.

Consistent with my propositions that theorized different levels of discretion in three types of ownership, I expect increases in expenditures in response to sudden increases in malpractice awards to be highest in for-profit, lowest in government, and intermediate in not-for-profit hospitals. Physicians working in high discretion for-profit hospitals without strong constraints are likely to change their behavior by ordering tests and prescribing unnecessary drugs, and thus increase hospital expenditures the most. Those working in low discretion government hospitals are likely to increase costs less than those in high discretion for-profit hospitals because stringent guidelines and rigorous monitoring systems in government hospitals restrict such defensive behavior. The intensity of the responses of physicians working in medium discretion not-for-profit hospitals will lie somewhere between these extremes. These expectations are summarized in the following hypotheses.

*Hypothesis 2a: Increases in malpractice awards are associated with greater increases in expenditures in for-profit hospitals than in not-for-profit hospitals*

*Hypothesis 2b: Increases in malpractice awards are associated with smaller increases in expenditures in government hospitals than in not-for-profit hospitals*

## **3.5. Quantitative Study Design**

### **3.5.1. Sample and Data**

The present study draws on multiple sources for data. The Center for Medicare and Medicaid Services (CMS) provides complete hospital cost reports for every year since 1997.<sup>10</sup> From these reports, I collected hospital expenditure data in 6,000 hospitals across 50 states and the District of Columbia over the period 1997-2006. This data source represents 92% of the 6,500 hospitals in the United States. Data on total malpractice awards paid by all health insurance firms in every state over the period 1996-2005 was obtained from the National Association of Insurance Commissioners (NAIC). The 2,787 property/casualty insurers that generated the annual statements from which NAIC obtains its data account for more than 95% of the malpractice policies written in the United States. I obtained data on hospital incentive systems from a survey conducted annually by the American Hospital Association (AHA). Lastly, data on household income by county was collected from U.S. Census Bureau small area income and poverty estimates.

### **3.5.2. Variable Definitions and Operationalization**

#### **Dependent Variable**

*Hospital Expenditures:* The dependent variable is the logarithm of hospital expenditures by department. CMS data on subsets of hospital expenditures by department ranges from capital related costs and costs of interns and residence programs to costs of laundry and

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<sup>10</sup> I generated a new “year” variable after taking into account fiscal year end and begin dates. Because this provides only partial data for the year 1996, the full dataset begins with 1997.

linen, housekeeping, and dietary services, to cafeteria costs. Because some subcategories of hospital expenditures are not directly relevant to the current study, instead of using total hospital expenditures, I develop a unique dependent variable by creating expenditures for operating room, radiology diagnostic, drugs, emergency room, and adults and pediatrics departments by summing for each the value of old/new building and movable equipment costs, employee benefits, administrative and general costs, non-physician anesthetists, nursing school costs, interns and residents' salaries and fringes, and costs of interns and residence programs and paramedical education. The department-level expenditures represent the aggregate dollar impact of the physicians' decisions in the respective hospital-department pair in each year. Because I use hospital fixed effects in all my estimations, it is within-hospital changes in expenditures that I am interested in explaining. Other aspects held constant, I argue that within-hospital year-over-year changes in departmental costs in response to variations in malpractice award shocks (at the state-level) represent actions. The magnitude of the change in these costs is a proxy for the managerial discretion enjoyed by physicians. Of course, other factors such as changes in the size of the hospital or other demand characteristics might also affect hospital costs so it is important to control for these other explanations.

### **Independent Variables**

***Malpractice Insurance Awards:*** I use the state level malpractice awards each year to assess the impact of the threat of malpractice suits for one year on the following year's hospital expenditures. The higher the malpractice insurance awards (i.e., malpractice losses), the greater the threat of malpractice liability physicians face. I expect the shock to

be uniform at the state-level because this is the level at which the U.S. tort law system is mostly enforced.<sup>11</sup>

***Hospital Ownership Types:*** I created two dummy variables for the study, one for for-profit and the other for government hospitals. The base group is not-for-profit hospitals.

### **Control Variables**

I control for a number of hospital characteristics that can affect physician behavior.

***Number of Patients:*** This number is measured as the logarithm of the total number of patients at each hospital.

***Market Share by Department:*** Because hospitals with greater market share can charge more for their services (i.e., monopoly profits), I created a variable for each hospital's market share based on hospital expenditure by department. Each hospital's departmental expenditures are divided by total departmental expenditures for a given county. This is because I assume that all hospitals within a county constitute the relevant competitor set from the standpoint of the patient.

***Uncompensated Costs Ratio:*** The uncompensated costs ratio is calculated by dividing total uncompensated costs by total hospital expenditures. Uncompensated costs refer to costs incurred when patients who visit emergency rooms are subsequently unable to pay for the cost of care either because they do not carry insurance or are too indigent to pay for the cost of care. High levels of uncompensated costs imply that a hospital is under

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<sup>11</sup> According to Congressional Budget Office (CBO) report, 95 percent of lawsuits over torts are filed in state courts rather than federal courts.



pressure to make up for these losses in other profitable parts of the hospital. One way to do so is by ordering excessive procedures and tests.

***Hospital Incentive System:*** Physician-hospital arrangements include independent practice associations, open physician hospital organizations, closed physician organizations, management service organizations, foundation models, and integrated salary models. It has been suggested that these arrangements form a continuum based on the degree of integration between a hospital and its physician groups (Cuellar & Gertler, 2006). The integrated salary model (ISM), in which physicians are salaried hospital employees, represents the tightest form of integration. Expecting physicians' and hospital stakeholders' incentives to be closely aligned under this arrangement and hospital expenditures to consequently be lower under ISM than under other arrangements, I created and included a dummy variable for hospitals that operate under ISM.

***Dummy for General Hospitals:*** The extent to which each department (e.g., operating room, radiology diagnostic, drugs, emergency room, and adults and pediatrics departments) is utilized will vary with the type of medical procedures performed. To take extreme cases, a patient with a cold may visit the out-patient department of a general hospital and be treated without radiology diagnostic procedures, whereas a cancer patient may visit specialist hospitals and undergo multiple diagnostic procedures. I control for hospital specialty by including a dummy for general hospitals. Long-term/short-term general hospitals are coded 1, while hospitals that specialize in cancer, children, psychiatric, rehabilitation, religious, alcohol/drugs, and so forth, 0.

**Household Income by County:** I expect hospital expenditures to be higher for hospitals located in high-income counties than for hospitals located in low-income counties. Thus, I include the one-year lagged logarithm of median household income in the model.

### 3.5.3. Model Specification

I estimate hospital expenditures using a fixed effects (by hospital) regression on panel data from 1997 to 2006. I expect malpractice awards in year (t-1) to affect hospital expenditure in year (t). Thus, the interaction terms (awards\*ownership) are also lagged in the model. Note that because the hospital fixed effect is included, the main effects of ownership type are subsumed within the fixed effect. The interaction term between malpractice insurance awards and hospital ownership type is used in the model when testing hypotheses H2 and Hb. In other words, the study focuses on the interaction term between malpractice awards and the for-profit hospital dummy, and the interaction term between malpractice awards and the government hospital dummy ( $\beta_2$ : the main variables of interest). I employ the following model

$$\begin{aligned}
 & \textit{Expenditure}_{it} \\
 & = \beta_1 \textit{Awards}_{st-1} + \beta_2 \textit{Awards}_{s,t-1} * \textit{Ownership}_i + \alpha \textit{Control}_{i,t} + \textit{Year}_t + \textit{Hospital}_i \\
 & \quad + \varepsilon_{it}
 \end{aligned}$$

where *Control* is a vector of control variables, including patient number, market share by department, uncompensated costs, hospital incentive system, the dummy for general hospitals, and household income by county. *Year* and *Hospital* represent year and

hospital fixed effects. The subscript  $s$  represents the state of each hospital. The subscript  $t$  refers to year, and the subscript  $i$  means hospital.

### **3.6. Qualitative Study Design**

I undertake a qualitative study to understand how different ownership types impose organizational constraints on managerial behavior. The qualitative design is critical because organizational constraints, which are the key mechanism that links ownership type and managerial discretion, are not observed in my quantitative study design. To provide robust support for my theory, I examine the nature and magnitude of the organizational constraints, such as performance feedback, peer pressure, bureaucracy, financial constraints, protocols, and guidelines, each ownership type imposes on physicians (see Appendix 1).

#### **3.6.1. Research Sites**

I collect primary data in the wake of a pilot study that involved nine interviews conducted within the University of Michigan Health System (UMHS). The interviews indicate that different ownership types employ different organizational constraints. Although these pilot interviews at UMHS mostly explain organizational constraints in a government hospital, physicians with experiences in organizations with different ownership types (e.g., in government and for-profit hospitals) provide information about how these affect physician behavior (e.g., strong constraints in government hospitals vs. weak constraints in for-profit hospitals).

The primary data collection involves interviews conducted in different states. Because standards and regulations for medical practice vary by state in the United States, it is necessary to include more than two states for the purposes of comparison. The cap for damages awards in malpractice suits, for example, varies by state, and because hospitals within a state operate under the same jurisdiction, many hospitals in the same state will pay attention to judgments in large malpractice lawsuits and subsequently become more defensive in terms of treatment practices. Drawing the sample of research sites from hospitals located in several states should overcome the state-specific bias that might otherwise be generated by this circumstance.

Because physician behavior might be expected to vary with demand size, which is measured by customer income, I choose research sites based on state and county poverty rates as of 2001, a median year for the period of the quantitative dataset (1997-2006). I choose six states that represent a selection of wealthy (Connecticut, New Hampshire), middle income (Ohio, Michigan), and poor states (Mississippi, Louisiana), and selected hospitals located in the counties that best represent each state's poverty rate (see Appendix 2).

### **3.6.2. Data Sources**

Following Graebner and Eisenhardt (2004), I conduct at least two physicians and two hospital administrators at each hospital in order to minimize information bias. The hospital industry is unique in that it consists of multiple hierarchies, including the administrative and medical (Perrow, 1965), that may generate conflict and dissatisfaction

among organization members. Physicians and hospital administrators are thus likely to have different perspectives on how ownership type affects physician behavior. For example, because they likely take it for granted, hospital administrators in a government hospital may not even recognize the importance of control over organizational activities. However, physicians in the same hospital may feel so frustrated that they overly emphasize their loss of professional independence within the organization.

I have conducted both face-to-face and telephone interviews with physicians and hospital administrators in Michigan and other states since July 2010. All interviews for which permission is given are audio taped; otherwise, I take extensive notes and prepare a summary on completion of the interview. Interviews average forty minutes, but may be as long as ninety minutes if time permits. Interviewees receive no payment.

### **3.7. Results**

Table 2 presents the descriptive statistics and correlation matrix of the variables used to explain hospital expenditures. The high correlations between hospital expenditures were expected, and are not problematic because I estimate hospital expenditure for operating room, radiology diagnostic, drugs, emergency room, and adults and pediatrics departments independently. Neither are the high correlations between market share variables, which were also expected, problematic because I include each market share variable respectively when estimating hospital expenditure by department.

< Insert Table 2 and Table 3 about here >

Table 3 presents the results of the hospital fixed effects regression models used to assess the interaction effect between the threat of malpractice liability and ownership type on hospital expenditures. Models 1, 3, 5, 7, and 9 present the results of the main effect of the threat of malpractice liability (hypothesis 1); Models 2, 4, 6, 8, and 10 provide the results of hypotheses 2a and 2b.

I find that the threat of malpractice liability measured by state-level malpractice awards affects physician behavior in all departments (model 1-model 10). Because both the dependent and independent variable are log-transformed, I can conclude that a 10% increase in malpractice awards (amounting to \$18,600,000) will yield a 0.1% increase in hospital expenditures in operating room (amounting to \$2,208), a 0.13% increase in radiology diagnostic (amounting to \$1,975), a 0.25% increase in drugs (amounting to \$1,665), a 0.12% increase in emergency room (amounting to \$1,401), and a 0.12% increase in adults and pediatrics departments (amounting to \$5,556).

The coefficients on the interaction term for for-profit hospitals specified in hypothesis 2a are positive and statistically significant for operating room, drugs, and emergency room departments (model 2, 6, and 8). This suggests that increases in malpractice awards are likely to incur greater increases in expenditures in for-profit hospitals than in not-for-profit hospitals. I thus find support for hypothesis 2a. A 10% percent increase in malpractice awards (amounting to \$18,600,000) should lead to a greater increase in expenditures in for-profit hospitals than for not-for-profit hospitals by 0.01% for operating room (amounting to \$184), 0.09% for drugs (amounting to \$628), and 0.02% for emergency room departments (amounting to \$196).

The coefficient on the interaction term for government hospitals is negative and statistically significant for operating room, radiology diagnostic, emergency room, and adults and pediatrics departments (model 2, 4, 8, and 10). This suggests that, in response to increases in malpractice awards, government hospitals are likely to increase hospital expenditures less than not-for-profit hospitals, which provides support for hypothesis 2b. A 10% increase in malpractice awards (amounting to \$18,600,000) should increase expenditures in government hospitals less compared to not-for-profit hospitals by 0.04% for operating room (amounting to \$463), 0.04% for radiology diagnostic (amounting to \$376), 0.04% for emergency room (amounting to \$315), and 0.03% for adults and pediatrics departments (amounting to \$815).

Results from the qualitative study support my theory that government hospitals impose strong (low discretion), and for-profit hospitals extremely weak (high discretion), organizational constraints.<sup>12</sup> For instance, interviews with physicians at the University of Michigan Health System (UMHS) indicate that government hospitals impose strong organizational constraints. As observed by one informant now working at a government hospital (UMHS),

... [E]very month I am given a little financial report of where I am, what they expect, whether I am meeting those financial goals...which is not what is happening in [the for-profit] hospital.

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<sup>12</sup> Results of the qualitative study will be incorporated as soon as interviews in the six states are completed.

Having previously worked in a for-profit hospital, he was able to provide this comparison. Interviews with physicians and hospital administrators support my key mechanism; different levels of organizational constraints that I do not observe in the quantitative study.

### **3.8. Discussion and Conclusion**

The current study examines the effect of ownership type (for-profit, government, and not-for-profit) on managerial discretion. I argue that stakeholders limit managerial discretion by imposing constraints, the extent of which are a function of the ambiguity and number of organizational goals. When organizational goals are clear and few in number, stakeholders are likely to impose weak organizational constraints that yield a high level of managerial discretion, because they can more accurately assess performance and therefore believe managers to have little room to pursue personal objectives. Conversely, when organizational goals are vague and many, stakeholders are inclined to impose strong organizational constraints that yield a low level of managerial discretion, because they find it difficult to determine whether poor performance is goal induced or a consequence of managerial shirking and believe managers are likely to pursue their own interests. I expect the differences in goals reflected in the three types of ownership —for-profit, government, and not-for-profit — to be associated with different levels of managerial discretion. Specifically, I hypothesize that the level of managerial discretion will be highest in for-profit, lowest in government, and lie somewhere in between in not-



for-profit organizations. Consistent with my hypotheses, my findings suggest that in response to sudden increases in malpractice awards, physicians working in for-profit hospitals will be more likely, and physicians working in government hospitals less likely, than physicians working in not-for-profit hospitals to engage in defensive behavior.

This study offers two important takeaways. First, an important implication of my study is that the choice of ownership type is not simply a means to an end. Previous research argues that managerial behavior does not vary with ownership type because for a given ownership type, incentives are chosen to induce optimal managerial behavior (Demsetz, 1983; Demsetz & Lehn, 1985; Demsetz & Villalonga, 2001). If this perspective is accurate, the choice of ownership type becomes inconsequential. However, my theory and findings suggest the opposite, that the choice of ownership type is an end in itself. Ownership types (an end) that embody different goals differentially determine organizational constraints (a means) that guide managerial behavior. Thus, my contribution to the literature on ownership is revealing that the choice of ownership type, in fact, is consequential for managerial behavior.

Moreover, by demonstrating the relationship between ownership type and the range of strategic means available to managers, my study sheds some light on the relation between ownership and the size of the surplus. Previous research on ownership type has typically emphasized the importance of restricting managerial discretion via incentive alignment (Eisenhardt, 1989; Fama, 1980; Fama & Jensen, 1983b; Jensen & Meckling, 1976). This approach is problematic in two ways. One is that this approach overly restricts the effect of ownership type to the division of surplus between managers and owners, because managers with discretion are assumed to increase their own

remuneration and perks at the expense of the profits of owners. The other problem is that considering incentive alignment only may not allow us to properly elucidate how ownership type narrows or broadens managerial discretion. Lacking strong assumptions about managerial behavior and emphasizing the subtle influence of organizational mechanisms on managerial discretion (in addition to incentive alignment mechanism), my study carefully examines how ownership type affects managerial discretion, which is the essential foundation for performance differences within an industry (Bertrand & Schoar, 2003; Hambrick & Mason, 1984). Therefore, my study advances our understanding of the linkage between ownership type and the size of the surplus that has received relatively scant attention.

My study, like empirical studies generally, is not without limitations. First, the quality of hospital care was not controlled for. The amount spent to serve patients would be higher for high quality hospitals than for low quality hospitals. Despite the importance of controlling for quality to an explanation of changes in expenditures in response to the threat of malpractice liability, I was unable to collect data on this variable over the full data period. However, when I combined a three-year dataset (2004-2006) on the quality ratio collected from CMS “hospital compare” with the full dataset, results were largely similar to those of an estimation that did not control for the quality of hospital care reported in the Table 3. Second, some may question whether outcome control (restricting managers’ freedom to pursue personal objectives over those of stakeholders) and behavior control (restricting the range of strategic means) are really endogenously chosen, as I posit. Contrary to my prediction, stakeholders who can easily assess organizational outcomes may also find it easy, and stakeholders unable to assess performance due to

multiple, vague goals find it difficult to choose appropriate guidelines and rules that influence managers to pursue organizational goals. This suggests the possibility that outcome control and behavioral control may, in fact, be complements rather than substitutes. Because this possibility leads to predictions opposite to what I hypothesize, failing to address this issue might weaken the results of my study. While these are clear limitations, by conducting interviews with physicians, I am able to (1) validate whether differences in hospital expenditures across ownership types (which I observe in my empirical study) are due to organizational constraints, and (2) determine whether outcome control and behavioral control are substitutes or complements. That is, my qualitative study design can address these limitations.

## CHAPTER 4

### 4. HOW MANAGERIAL DISCRETION VARIES ACROSS FIRM BOUNDARIES

#### 4.1. Introduction

A widely held view in transaction cost economics (TCE) is that firms exist to reduce transaction costs (Williamson, 1975; Williamson, 1981). They accomplish this by limiting opportunities for transacting parties to profit from contractual imperfections through hierarchy and fiat (Williamson, 1975). Thus, the central thesis of TCE is that changes in managerial behavior occur when a transaction shifts from the market into the firm because firms serve to limit the opportunistic behavior encouraged in the market. In sum, when the transaction shifts from the market to the firm, managers' freedom to opportunistically pursue personal objectives diminishes.

Although scholars have studied the mechanisms that underlie decreases in transaction cost when opportunistic behavior is limited (Williamson, 1975; Williamson, 1981; Williamson, 1985), understanding of how moving from the market to the firm might introduce other organizational costs remains limited (Hart, 2011; Masten, Meehan, & Snyder, 1991; Miller, 1993; Zenger, Felin, & Bigelow, 2011). To explicate the organizational costs imposed by integration, the present study highlights four organizational tools, that is, authority, rewards, identification, and coordination (Simon, 1991). While firms use these organizational tools to reduce managers' freedom to pursue personal interests or induce managers to work hard and harmoniously combine

transactions within the firm, using these tools to realize these benefits may also generate other additional organizational costs that would not be present in the corresponding market exchange. My dissertation investigates the organizational costs incurred when transactions are governed within the firm.

In the absence of a specific theory that outlines the organizational costs of integration, I undertake an in-depth, qualitative study using a rigorous case methodology, which, according to Yin (2009), is the appropriate research method when asking “how” explanatory research questions. Especially, I make the qualitative interviews the method of choice because hearing from organizational members whose behaviors interrelate can help us develop a holistic description of how a complex entity works or fails (Weiss, 1995). Thus, this methodology enables me to describe the process by which managerial behavior changes as transactions move from the market to the firm, and the organizational costs that result from this change.

This study makes two principal contributions to the extant literature. First, it emphasizes the importance of organizational costs. Although they have emphasized that within firms managerial behavior veers away from opportunism, scholars have paid less attention to how moving a transaction from the market to the firm incurs other organizational costs by eliciting managerial behaviors associated with organizations as opposed to markets. I conclude from my exploration of the underexplored, yet important, organizational costs that the emphasis on the costs of opportunism understates the true organizational costs of integration. Because certain organizational costs lack counterparts in the market, complexities emerge in the process of comparing costs that adjudicate between the choice of firm or market. Second, like the former study of my dissertation,

the current study also helps to illuminate the micro-foundations of managerial discretion. Through interviews, I examine, at a micro level, how managerial behavior would be different between the market and the firm, which has not been studied in the extant empirical studies on managerial discretion. By examining variation both within and outside firms, the present study enhances understanding of the determinants of managerial discretion.

#### **4.2. Prior Literature**

The core idea of TCE is that market costs that arise from opportunism are the main drivers of integration. The concept of bounded rationality in TCE (Cyert & March, 1963; Simon, 1957; Williamson, 1981) ensures that any contract between two agents in the marketplace will be essentially incomplete in the sense that contingencies will arise that will demand adaptation not specified ex ante in the contract. That adaptation is not a problem if actors can easily agree on the resolution of disputes is where the key assumption of TCE, that actors are opportunistic pursuers of self-interest with guile (Williamson, 1975), becomes crucial. Opportunistic behavior on the parts of all parties to transactions increases the cost of transacting in the market due to the need for speedy and effective court resolution of disputes. TCE posits that the market costs that arise from opportunism can be reduced by shifting transactions from the market to the firm, where opportunistic behavior can be limited (Williamson, 1975).

What enables the reduction in the market costs that arise from opportunism are a firm's unique organizational tools like **rewards, authority, identification, and**

**coordination**, which are brought to bear when a transaction is shifted from the market to the firm (Simon, 1991). The intent of these tools is not only to reduce opportunistic behavior, but also to facilitate coordination among organizational members. The organizational benefits that accrue to the deployment of these tools, however, may be accompanied by organizational costs that do not correspond to any market costs. The emergence of these costs suggests that the firm boundary decision is not a matter of simply comparing opportunism costs between firms and markets. To better understand this complex firm boundary decision, it is important to understand organizational costs as well as benefits that are generated by integration. In this chapter, I first review the relevant stream of literature on several organizational benefits and costs that each organizational tool introduces.

#### **4.2.1. Rewards**

One noticeable organizational tool is the **rewards** system (Simon, 1991). In the market, rewards systems are high-powered, in the firm, low-powered (Williamson, 1985). The levels of power in the rewards systems imply the extent to which the gross receipts of the economic agent are influenced by the efforts expended by the agent. Although high powered rewards systems in the firm might help induce actors to work hard to increase their personal earnings, they encourage actors to exploit every contingency (or even actively create contingencies) to generate advantages for themselves in any ex post negotiations (Williamson, 1981). However, actors within firms are less likely to behave opportunistically, because effort and productivity do not directly affect personal rewards under the low-powered rewards systems of firms. That fixed salaries provide fewer

incentives for employees to pursue personal interests (Williamson, 1975), as TCE posits, enables firms to reduce transaction costs. Based on this rationale, TCE has evolved in a way that suggests that properties like frequency, uncertainty, and asset specificity increase the likelihood that transaction costs will increase due to opportunistic behavior (Monteverde & Teece, 1982; Nickerson & Silverman, 2003; Pisano, 1990; Williamson, 1981). Aspects apart from changes in opportunistic behavior are assumed to be held constant when a transaction shifts from the market to the firm. In other words, TCE offers little, if any, explanation of what such changes in boundary decisions might entail in the way of other organizational costs.

This new rewards system is not without cost, however. In the market, actors' rewards are determined by supply and demand, within a firm, by central actors with authority. When high-powered incentives are replaced with low-powered incentives, less effort and shirking are more likely to be observed among those who cannot lay claim to the net receipts within the organization than in the market. Thus, within a firm, a reward system incurs **costs of collecting information**, that is, costs that arise as firms collect information about employee behaviors like productivity or shirking. Based on the detailed information collected, firms attempt to grant raises or promotions that can reflect individuals' contributions to organizational outcomes, inducing employees to work hard.

Another cost that may be generated by rewards systems in firms is termed **social comparison costs** (Zenger et al., 2011). In the face of incomplete information that prevents the perfect division of jointly-produced gains according to individual contribution or performance (Holmstrom, 1982), firms cannot easily extract employees' commitment to organizational outcomes. Moreover, because employees revealed even by



imperfect information to be free-riding and shirking cannot simply be replaced quickly with harder working employees, managers knowing this often will not work as hard within a firm as in the market. Thus, some managers would feel that they are not properly compensated for individual performance. This unfairness in rewards systems is thus likely to be perceived when actors compare their rewards with those of others in the same firm, but not with those of actors outside the firm, and to generate myriad responses that undermine efficiency (Zenger et al., 2011). Managers might, for example, reduce their level of effort or attempt to influence or lobby for contingent rewards (Zenger et al., 2011). These social comparison costs, that is, organizational costs associated with members within a firm as a reference group, do not exist or are less severe in the market.

#### **4.2.2. Authority**

Rewards, as mentioned above, are insufficient to motivate workers completely (Gibbons, 2010), because in a world of uncertainty, contracts that specify rewards cannot predict all future contingencies. Adjusting incentives to each unexpected condition is costly, and often not an option because of the immediacy with which action needs to be taken. The costs generated by incomplete incentives can be avoided inside the firm because bargaining is replaced by **authority** (Coase, 1937; Simon, 1991); those who possess authority design employees' behavior by telling employees what to do, and employees follow these instructions when the decision criteria resides within their zone of acceptance (Simon, 1991). Authority facilitates coordination by determining employee access to critical human and physical resources (Rajan & Zingales, 1998), avoiding the

costs associated with bargaining and hold-ups (Simon, 1951, 1991), and forestalling delays in information processing (Radner, 1992).

Unfortunately, authority enforcement within firms is subject to **inefficiencies in communication**. Because subordinates are often better informed than the authorities responsible for decisions about projects' use of firm assets, the latter's initiation of directives often relies on soliciting information from the former. If poorly informed, those with authority will make mistakes by issuing suboptimal orders. Despite the importance of communication between these parties, information flow between them is often complicated by the fact of authority. Specifically, subordinates lack incentives to acquire and share information (Aghion & Tirole, 1997). Subordinates worried that their efforts to collect information that contributes to the choice of an optimal project might be wasted are likely to be uninterested in communicating with those with authority about potential projects' payoffs (Aghion & Tirole, 1997). This communication bottleneck is exacerbated in the case of soft information, that is, information that, because it cannot be directly verified by other than those who created it, cannot be easily passed on to others (Stein, 2002). Subordinates' anticipation that the likelihood of their effort being wasted is higher for the collection of soft than for the collection of hard information (i.e., information relatively easily passed on to superiors) will dilute their incentives to collect and share soft information.

An extreme case of authority-related communication problems is the cost of influence activities, termed **influence costs** (Milgrom, 1988; Milgrom & Roberts, 1988). Given information asymmetry whereby superiors' access to information is inferior to workers', the latter have an incentive to "manipulate" the information provided to the

decision makers in authority (Milgrom & Roberts, 1988). The flow of information to superiors might, for example, be influenced such that projects that entail less effort by, and generate better career paths for, subordinates will be chosen (Stein, 2002). Influence activities, such as providing false or incomplete information to decision makers, may shape decisions to the benefit of workers, but increase the costs of filtering, and collecting additional, information. These costs will eventually degrade the decision quality of the central authority, and workers' undue attention to influence activities over productive activities is, in itself, a serious problem.

In sum, authorities' direction of subordinates, even as it promotes coordination benefits, to the extent that it also impedes communication between superiors and subordinates, may interfere with the selection of optimal projects and expansion of the surplus.

#### **4.2.3. Identification**

Thirdly, Simon (1991) argues that **identification**, like authority, is an important organizational tool that differentiates the market from the firm. Identification based on organizational pride and loyalty can compel employees to actively work towards organizational goals and deter the opportunistic behavior that prevails in the market. Because organizational outcomes are more highly valued by those who identify with the organization, workers will require less reward with than without identification (Akerlof & Kranton, 2005). Shared identity with a firm is particularly important because identification plays a key role in the deployment of resources and performance

improvement. One means of generating superior performance is to create imperfectly re-deployable resources that require firm-specific human capital. But employees who make firm-specific investments are confronted with hold-up problems. After the investment in human capital is made, employers may force employees to accept, for instance, reduced compensation and extended work hours (Wang, He, & Mahoney, 2009). Thus, employees reluctant to put themselves in situations in which they face such hold-up problems avoid human capital investments. To solve these problems, firms employ trust and shared identity that show that they will not engage in opportunistic behavior towards their employees, and elicit the optimal level of commitment from employees.

This raises the important question of how identification is enforced. Identification, like other tools that play a key role in the firm, requires investment. Being an outcome of discriminating between “we” and “they,” the identification requires that firms invest in **motivational capital** to instill in employees a sense of “we.” Firm-sponsored events intended to enhance trust and build legitimacy (e.g., group lunches, employee sporting activities, and other company gatherings) may help to inculcate a sense of identity in employees (Akerlof & Kranton, 2005). Similarly, paying employees above-market wages, according to Akerlof (2010), encourages them to think highly of themselves and their company, and thus high esteem, in turn, leads employees to work hard and perform well in order to justify their superiority. Understudied, but nevertheless important, investments in motivational capital add one layer of organizational costs to the process of integration.

Identification can, however, be a case of too much of a good thing. The extent to which excessive reliance on it impedes efforts to increase efficiency translates into **social attachment costs** (Zenger et al., 2011). Relationships between employers and employees

or among employees being particularly embedded, firms cannot simply discard or ignore previous relationships, even when they no longer benefit the organization. Interpersonal relationships, for example, may lead employers to say yes to R&D projects that are unlikely to contribute positively to firm outcomes. Unpromising projects that go forward and promising ones that are shelved in the interest of cultivating employee trust may not only hamper performance, but even jeopardize contracts with outside parties that, wary of such behavior, are led to rethink or terminate their relationships. Such social attachment costs add yet another layer to the organizational cost that accompanies integration.

#### **4.2.4. Coordination**

Last, but not least, the feature that differs from market to firm is **coordination** as an organizational tool. Firms can coordinate activities in ways not as easily achieved by markets (Simon, 1991). In the market, a series of activities to be coordinated may incur hold-up costs as parties haggle over investment in relationship-specific transactions across coordinated units. Firms can deter such opportunistic behavior and harmoniously coordinate transactions by integrating units. Within firm coordination is facilitated by two mechanisms (Camerer & Knez, 1996). The first is direct supervision: those with authority hand down decisions related to coordinating activities and thereby reduce or eliminate haggling costs (Coase, 1937). Negotiating unexpected events not covered by a contract can be avoided by those with authority by using the firm's information advantage over the market to evaluate the prospect and direct the use of the assets it oversees. Firms may also direct the optimal allocation of resources and individual action (e.g., promote synergy by sharing common inputs). Mutual adjustment is the other mechanism that

facilitates coordination. Because employees expect cooperation from fellow workers and share common expectations about appropriate forms of behavior (Camerer & Knez, 1996), firms can coordinate actions essentially by “telepathy,” that is, achieve coordination in a timely manner with a reduced level of information sharing (Puranam & Gulati, 2008). In sum, direct supervision and mutual adjustment can be used by firms to coordinate actions better than is possible in the market.

**Costs of grouping dilemmas** can arise as units are added to an organization to achieve coordination benefits. Organization members need to be grouped by strategic business units, divisions, functional departments, work groups, or teams to harmoniously coordinate their actions (Camerer & Knez, 1996). Such groupings facilitate within group coordination through common expectations based on trust and convention, but at the potential cost of reducing between group coordination (Camerer & Knez, 1996). Group-level common expectations are a double-edged sword in that, used to facilitate coordination within a group, they can diminish coordination between groups. For example, common rules and norms developed to govern actions within a group can impede coordination and cooperation between groups with different conventions and expectations. On the other hand, time taken by members to enhance coordination across groups can dilute within group coordination.

In their efforts to arrive at decisions that are optimal for both parties, firms find it difficult to overcome the grouping dilemma (the trade-off between higher coordination within, and lower coordination between, groups). The coordination of integrated units inhibits the effectiveness of coordinating separate units.

#### 4.2.5. Critique of the Prior Literature

As discussed above, the existing literature identified a number of organizational costs as well as benefits that accrue to the deployment of these four organizational tools – - rewards, authority, identification, and coordination – when a transaction shifts from the market to the firm. Despite this importance, several gaps exist in prior studies. First of all, few scholars have studied organizational costs relative to organizational benefits. TCE scholars have typically both overemphasized change in managers’ opportunistic behavior (Williamson, 1975) and assumed that other factors would be held constant. Regarding organizational costs as barriers to be overcome, they have simply argued that when transaction costs exceed organizational costs, transactions will be governed within firms, and when organizational costs exceed transaction costs, transactions will take place in the market. But as described above, when a transaction shifts from the market to the firm, managerial behavior changes in ways apart from opportunism that generate organizational benefits and possibly costs to the firm. Unfortunately, there exists very few studies about these other changes in managerial behavior after integration, as Oliver Hart and other scholars have indicated (Hart, 2011; Zenger et al., 2011).<sup>13</sup> Scholars have only recently begun to examine how post integration changes in managerial behavior can yield both benefits and corresponding organizational costs (Zenger et al., 2011)

Furthermore, there are few studies based on empirical evidence of such costs.

Zenger et al.’s (2011) recent theoretical examination of organizational costs like social

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<sup>13</sup> “[There are]... open important questions such as how authority is enforced in an integrated firm, what the costs of integration are, and even what integration means (Hart, 2011: p.105)”; “While considerable theoretical work focuses on the efficiency and failings of markets and the virtues of hierarchy, much less explores the causes of organizational failure and the costs of integration (Zenger et al., 2011: p.30)”

comparison costs, influence costs, and social attachment costs, for example, is not grounded in empirical data. Lack of empirical evidence of organizational costs might be attributed to the poorly established concept of organizational costs. Masten et al. (1991) argue that both organizational and transaction costs include common costs, as for planning, bargaining, contracting, monitoring, and enforcement. The failure of distinguishing between organizational and transaction costs poses an obstacle to the measurement of the former. Measuring organizational costs as “the number of hours devoted by management to planning, directing, and supervising a particular component or process times the average hourly management wage rate” (Masten et al., 1991) fails to reflect such unique organizational costs as social attachment and influence costs. Thus, absent on-site observations, it is difficult to uncover and eventually theorize organizational costs not accounted for in previous studies. It may turn out as well that some organizational costs are, in fact, not significant. In sum, our understanding of organizational costs is limited by lack of empirical evidence.

Another gap in prior studies of organizational costs is that it is not clear how shifting a transaction from market to firm will affect managerial discretion. Transaction cost economics posits that integration will forestall opportunistic behavior. But might it be always the case that managers’ freedom to pursue personal interests rather than organizational value, diminishes after integration? This would likely be the case only if incentives can perfectly control for managerial behavior. But, due to imperfect performance measures that determine the strength and value of incentive systems, incentives (both in the firm and in market exchanges) can distort managerial behavior (Baker, 2002). Being evaluated by changes in organizational performance measures,



managers' actions can improve performance measures but not affect organizational value. For instance, managers paid an hourly wage may spend most of their time interacting with others on Facebook.

Any examination of whether organizations can deter opportunistic behavior or not needs to take into account that Williamson and other TCE scholars, in focusing on incentives, have overlooked other aspects of firm boundary decisions like organizational tools such as identification and authority. Such other aspects of integration may serve to mute the undesirable effect of incentives based on imperfect performance measures. Managers who feel an attachment to their organizations, for example, are motivated to work hard despite imperfect performance measures and more willing than they would be in the market to initiate ideas. Managers, when they feel detached from the organization, might be unwilling to contribute to firm productivity. Thus, to the extent to which they can carefully design incentives along with these other organizational tools, organizations may reduce the distortion effects of imperfect incentives and broaden managerial discretion, thereby affording managers a wider and different range of strategic actions through which to pursue value creation for their firms. This complementary role of organizational tools notwithstanding, whether and how organizations reduce opportunism has not been studied.

To summarize, what such changes in boundary decisions might entail in the way of organizational costs and how integration affects managerial behavior appear to be open questions. I address this question through a theory-building qualitative study that uses qualitative interviews to develop a set of cases that explore organizational costs and compare discretion levels within and outside a firm. Based on the findings of this study, I

propose a model that suggests that organizational costs emerge during the integration process. Also, I discuss managerial discretion after integration, which is determined as a result of the interplay between organizational benefits and costs.

### **4.3. Study Design**

#### **4.3.1. Research Setting**

The current study aims to build the theory of organizational costs in the context of the U.S. hospital industry, which is well suited to my study for the following reason. Beginning in the late 1980s and through the mid-1990s, the hospital industry moved toward physician-hospital integration in response to the pressure to control admissions and costs. Hospitals and physician practice management companies purchased physicians groups rapidly and, thus, physicians were employed by hospitals. However, the physician practices were sold out again after big failures. Although the market need for low costs and convenience is again driving physicians to be employed by the hospitals, the issues remain and physicians groups and hospitals must be careful not to make mistakes similar to those made in the late 1980s and mid-1990s. Considering that the case in which historically autonomous groups of physicians had few or no financial ties with hospitals constituted a market transaction, whereas the case in which physicians are employed by hospitals (or physician practice management companies) is an instance of firms, the trend in the context of the U.S. hospital industry is expected to provide fruitful examples that enable me to examine organizational costs. Research reported in the literature about the

reasons for the failure of physician-hospital integration lacks the systematic analysis I would perform in the current study.

The research design is a multiple-case, inductive study involving two types of physician-hospital arrangements: (1) an employed model (i.e., an integrated salary model whereby a group of physicians is salaried by a hospital system to provide medical services), and (2) a private practice (i.e., a contractual arrangement between physician practices and a hospital; a physician or group of physicians who practice medicine independently, not as an employee or employees of a hospital). Although there are other types of physician-hospital arrangements (e.g., equity model, foundation, and management service organization), I chose these two arrangements with an eye to examining the distinct effect of physician-hospital integration on physician behavior. This research design enables me to investigate how physician behavior varies across hospital boundaries and ultimately understand the unique organizational costs imposed by integration.

#### **4.3.2. Data Collection**

The qualitative study involved physicians and hospital administrators because physicians and administrators may view organizational costs differently even if they are in the same organization. I interviewed a total of twenty four persons — 22 physicians and 2 hospital administrators — over a six-month period (from April to November 2012). The interviews were semi-structured, lasted 20 to 60 minutes each, and were recorded. I started with the open-ended question, “How do you think that physician behaviors differ

between the case where physicians are in an employed model and the case where they are in private practice?” Then I narrowed the interview questions in an effort to find systematic patterns across different physician-hospital arrangements and uncover how and what organizational costs emerge in the case of physician-hospital integration. Because my study aims to reveal unknown as well as known organizational costs imposed by integration, or perhaps reveal some expected costs to be insignificant, the interviews are designed so as not to be constrained by the costs described in the literature review section (see Appendix 4). The interview transcripts that form the basis of my analysis filled 245 typed, single-spaced pages.

#### **4.4. Results**

The purpose of this study is to identify key changes in the behavior of individuals within the firm in comparison to the market and how these changes generate additional organizational costs that would not be present in the corresponding market transaction. Through analysis of the data from semi-structured interviews with 22 physicians (11 in private practice and 11 in employed model) and 2 hospital administrators, I first outline three major changes in physician behavior that occur when physicians move from the market (private practice) to the firm (employed model). I then analyze how these behavioral changes affect organizational costs and quality of care, and how within-firm changes in physician behavior affect physicians’ incentives to pursue personal interests rather than organizational value. In this study, I include only quotes that best depict changes in physician behavior and corresponding changes in costs, quality, and

incentives. Other quotes that provide similar information but were not included are available upon request.

#### **4.4.1. Monitoring**

One of the main things that accounts for differences in physician behavior between an employed model and private practice is the introduction of a monitoring system. Because a low-powered rewards system, such as guaranteed income and benefits in an employed model, is likely to induce less effort and shirking, firms introduce monitoring systems for the purpose of collecting information about productivity, and grant raises or promotions according to an individual's contribution to the organization. In the context of the U.S. hospital industry, the use of monitoring systems in an employed model is the basis for hospitals' assessments of whether physicians are meeting their strategic goals (e.g., quality control, cost efficiency, and safety). For example, hospital administrators institute rules and protocols that affect physician behavior (e.g., how many surgeries physicians should do, what patients they should see, and who the physicians should refer patients to) and develop performance measures to assess physician output. Unlike physicians in private practice, who monitor and assess their performance themselves, physicians in an employed model are highly affected by hospitals' monitoring systems. An example of physician behavioral changes due to the use of a monitoring system in an employed model follows.

Physician 12: [S]o . . . I did join the private practice last year for one year and now I'm in a hospital employed group. And I think they [private practice and employed model] are very different. I think the main points are in the hospital employed group there is more administration. There is more structure. There are more meetings. There are more standards, checks, and balances about the efficiency. There is some loss of autonomy. If you're by yourself, you answer to yourself. You can decide or not decide to do anything. You definitely have more people to answer to in an employed structure.

Administrator 2: There are a lot of comparative analyses [in an employed model]. They publish monthly and quarterly data performance. . . . There are a lot more questions than there will be answers. Why aren't you up here within the norm, and why are you far off? And so they are looking at everything, perfection control, numbers, acquisition and perfection, recovery, open hearts. . . when it's supposed to be done, and so there is a lot more data available to systems, and then they are sharing that with their C-suite and their chief medical officer.

Physician 5: [W]hen I was in private practice, every two weeks I would have to look at the books to make sure that the secretary is paid, the rent was paid. . . . I had to make sure there is always money in the pot. I don't have those concerns now. So I don't even have to look in the books. I just say, okay, let's get on with work. So I traded off a hospital meeting for running a private practice. . . . I spend

more time with the hospital meetings than I did in private practice. . . . The hospital-based meeting is one hour or one and a half hours, and we have to physically be there and discuss everything, and there's an agenda, and then there is an action plan, and then you have to go through it. . . . [S]o those are the differences; it is sort of a . . . it is a different menu or a different restaurant. Say you come out feeling okay. You had a meal, but you've been eating different foods.

Because what physicians in private practice make depends highly on how much they work, the importance of a strict monitoring system is relatively lower in private practice than in an employed model. What those in private practice pay attention to is whether they are generating revenue enough to pay their bills and their staff. Otherwise, they are unable to feed their family. Thus, those in private practice do not need to be told, for instance, whether and when they can take a vacation. Conversely, because physicians in an employed model are paid guaranteed income and benefits by the hospitals that employ them, the hospitals need to strictly monitor physician productivity and the quality of output. Thus, those in an employed model face schedules already made out in advance and are expected to be in their hospital as a protocol and are required to attend meetings to improve quality and productivity. In sum, lack of latitude due to a monitoring system is one of the main behavioral changes occurring when physicians move from private practice to an employed model. In the rest of this subsection, I focus on how these monitoring-related changes within the firm alter the cost and quality of delivered care, and how it affects the motivation of physicians.

- **Costs**

Behavioral change due to monitoring systems raises the question of who does the task of monitoring. The answer is administrators. However, it is costly to use professional administrators to perform various tasks including establishing policies and procedures, maintaining computer systems and databases, allocating budgets, tracking accounts and finance, etc. Some may argue that there should be a reduction in unit administrative cost as the size of a hospital system (e.g., number of physicians) increases. However, interviews with physicians (one in private practice and two in the employed model) suggest that this is not always the case. As described below, one informant saw, in fact, higher administrative costs in an employed model than in private practice.

Physician 18: [W]hen I used to do my own billing [in private practice], I had a billing girl. She worked part-time. I think I paid her about \$18,000 a year to do the billing, and she was very good at collecting money, a good incentive for her. But in the hospital they don't have the incentives to collect so much. Especially not collecting for me, and then they charge you, like the hospital where I work is charged 6% of the collections, I guess, as the billing fee. Well, if you collect over a million dollars a year at 6% that's a lot; it's 60,000 per million and it's like, wait a minute, that's a lot more than I paid a billing girl of my own. . . . I still have the same manager actually, but now she manages two practices instead of just one, but where the difference is again some of the expenses from the hospital are just a



lot higher. I had insurance for my employees, but they have a lot different kinds of insurance and it's more expensive.

Unlike staff members, who perform relatively simple tasks like billing and coding, hospital administrators not only manage the staffs that perform such tasks, but also direct the overall activities of physicians and hospital departments. But this does not explain why the employed model does not always enjoy scale economies, as in the example, in billing collection. There could be several reasons that prevent economies of scale. First, to make employees motivated, firms need to use motivational approaches to make sure that the employees feel rewarded. As described above, hospital systems provide expensive benefits that are unavailable to staffs in private practice. Salaries and benefits for multiple layers of administration are often too high to realize economies of scale in an employed model. Also, as the number of departments that administrators monitor is large in size, administrators may lack management time and skill that can be devoted to each department. Unlike those who work for only one private practice, administrators in an employed model feel de-motivated and uninvolved in the system, leading to overall ineffectiveness in monitoring. In sum, monitoring costs are high, as described in the example above, and do not have counterparts in private practice.

- **Quality**

How does a monitoring system in an employed model affect quality of care? Physicians in employed model generally supported the idea that physicians may do a job

with better quality in an employed model than in private practice. Physicians in private practice are too busy to attend committee meetings designed to improve quality of care. Those in private practice have to manage their time in a way that they can do multiple things in a shorter period of time than someone employed by a hospital system may have to do. For example, because those in private practice may have to go to different hospitals and meet as many patients as possible to pay their bills and their staff, they do not have time to keep up with new technology. Academic or hospital employed physicians, on the other hand, basically will stay at the same institution and be asked to attend committee meetings that provide and hear feedback about how to provide the best care to patients. This might lead to differences in quality, as described in the example below.

Physician 12: I think standards, checks, and balances happen less in private practice. . . . [which is] less structured. I think one person's perception of reality is very different than when you look at the data in front of you, charting back exactly how you encounter patients, how efficient you are, the patients' perspective and their experiences through Q&A, how many complications you have with a procedure. These are the things that are not done in small groups because they take time, and most people would like to use that time to practice, whereas in big groups, [for] a lot of these activities . . . [it is] somewhat mandated that we all participate and contribute.

Physician 19: [I]n the private practice model there is less incentive to, let's say, being up to date. There is no penalty if you don't know the latest about the antibiotics changes or new antibiotics, whereas in a closely monitored employee model, and again because of committee work, these issues are addressed frequently. And so private doctors vary in their ability to be up to date, and when they are very busy it's questionable whether they have time to sit down and read journals, and so I think that's a concern in the private practice model.

During interviews, as shown above, several doctors suggested that a monitoring system that carefully assesses and tracks physician output enables physicians in an employed model to provide better service than those in private practice. To further support this view, an administrator who is now at one of the largest integrated systems in the United States interprets its strict monitoring system as the main reason for winning an award for performance excellence given by the President of the United States.

Administrator 1: You are able as a group of physicians to implement things much more easily because there is discipline. For instance, we received a "B" award, and one of the reasons we got this award is that our physicians are so oriented to quality and patient safety. . . . [I]t just becomes a given and so much more disciplined surrounding than you would find among individual physicians, for instance, in private practice.

- **Incentives**

As several physicians (five in private practice and four in the employed model) suggested, changes in physician behavior due to hospitals' monitoring systems are expected to decrease physician incentives to work for the hospital, despite the efforts of hospital administrators to increase productivity in the system. The main reason behind decreased incentives is, as many physicians indicated, lack of good parameters by which to judge one's productivity in the field of medicine. The gap seems to exist between what physicians would think of as efficiency or productivity and what administrators believe is efficiency or productivity. Management tends to look at tangible metrics, which do not necessarily reflect subtle nuances in physician behavior in treating patients. Disagreement on high performance and lack of performance measures may lead physicians to feel that their work is not rewarded, decreasing physician motivation to work hard.

Physician 18: [T]hey don't have the right numbers. They are looking at, well, you are operating at a loss. . . . They look at revenue minus expenses and say, well [jeez], this isn't working right, we are not making any money on this segment; but if they did it right, they would make even more money if they could control the way they get the billing. Like, for instance, the smartest thing would be that they give me back my old biller [in private practice] and just give me one girl who does just my stuff, and not work in a general department where she's doing more than just orthopedics, too, because then they don't understand all the billing nuances or whatever; but they won't do that.

Physician 6: When you get to corporate board level, they don't have intangible reporting; they need tangibles, so they need a metric. . . . [S]o what happens is the easiest thing to get pushed up in a medical thing is volume of patients and purchasing objects, items, okay? It is easy to see, "What did you pay for the keyboard, oh, wait, we should go to a different vendor." What is very challenging and impossible for them to report is efficiency, and there's a variety of reasons for it; one, hospitals have bad logistics systems, okay, they don't run lean and they don't daily report out on efficiency. So you can have great decisions where purchasing will say look how much we've saved, but it can mess up the efficiency of an operation, and that doesn't show up at the board until two or three business quarters later where, let's say, revenue goes down because case volume is down in an operating room. And no one knows why case volume is down. . . . [A]nd so then what happens at a board meeting is, boards don't like silence, so usually someone has to fill the void, so someone will say, oh, well, we're in Michigan, you know; it's the economy, and everyone goes, oh, yeah, it's the economy. They don't see it.

Given the lack of perfect performance measures, physicians have incentives to act only on metrics (Baker, 2002). In other words, physicians in an employed model have incentives to work hard only to the extent that they are not penalized. Unlike physicians in private practice whose behaviors are easily observed by their partners, those in an employed model get away with slacking within the system.

Physician 22: You probably need to add on some more cases to help the department out, to meet the department's goals and section's goals and that kind of thing, and some people are in tune with that and some people could care less, and they just kind of go on and do whatever they want to do because there are no detrimental effects of not meeting your goals right now. If you are over and above your goals, we get a base salary, and then we get the supplement at the end of the year; supposedly we need to have a 3% margin above our goals for the year as a department in terms of what we bill or collect. So we've got to be 3% above our target in order for people to get a bonus, and so there is an incentive to bill more, do more, because the more that you bill, you know, if you, individually, if the department as a whole meets that 3% margin, then the bonuses that go out supposedly are based on your clinical productivity, your research productivity, that kind of thing. It has never really been spelled out for us. I don't really know how they come up with the numbers for bonuses. We have only gotten bonuses one of the three years I have been here because we have only made our 3% margin the first year I was here and the bonus I got was actually quite small. . . . This year we would have met, but some of our partners in our group did not fill out their billing sheets, and so we missed our bonuses. So nobody gets the bonus this year. . . . [M]y one partner and I were talking. . . . "I work my tail off and I met my personal goal and it was above that, but yet my bonus was very, very small, and so is that bonus even worth it? Do I really care, or could I not work my butt off as much and just not get the bonus?"

In this case, the physician whose bonus system is structured at a group level rather than an individual level often does not have an incentive to work hard for the group. Moreover, colleagues' prevailing free-riding behavior, as in the example above, that is not controlled by hospitals' monitoring systems exacerbates the distortion of physician behavior, decreasing physicians' incentives to make an effort and work to increase their hospitals' performance.

#### **4.4.2. Coordination**

When employed, a group of physicians can no longer remain as an independent unit like a private practice. Physicians in an employed model are expected to closely work across departments to achieve common objectives. The process of enabling different departments to work together by assigning certain roles and responsibilities is called coordination. Through this process, a hospital system wants to ensure that physicians know exactly whom to report problems to, reducing confusion and possible struggles among them. Some may argue that a group of physicians in private practice are also assigned certain roles, but the need for coordination is much lower among physicians in the same specialty in private practice than among those in different specialties in the hospital system. In the rest of this subsection, I focus on how these coordination-related changes within the firm (i.e., arranging roles in different departments and combining them together in harmonious relation) affect the cost and quality of delivered care and level of physician effort.

- **Costs**

The need for coordination and communication across departments often impedes the decision making process. Compared to physicians in private practice, in which decisions can be made, and consensus reached quickly, among physicians who have similar input into how the practice should be run, those in an employed model need to discuss with a lot more people who represents different areas before making decisions. Commonly highlighted in interviews with four physicians in an employed model are lack of speed in decision-making and the ability to adapt.

Physician 18: [W]hen I was chairman of the orthopedic department years ago, I would sit at these different committees, and whatever and they would say, well you know, . . . they want to make a decision. I'd say, okay, let's do it, and they'd say you should bring it back to your department and then you can discuss it and then we'll meet next month and stuff, and I said no, no, no, my department voted me as the chairman so that I can make these decisions for them. So let's just go ahead and do it. But it doesn't work that way, you know, so they're not. . . I mean, if I want to buy a car, it doesn't take me very long to make a decision on which a car I want and how much I'm willing to spend on it, whereas these people, you have to bring it back to that committee . . . and by then you'll be already looking at next year's model or something, so, kind of crazy.

Physician 1: Once you are in private practice, it doesn't take much to set up a meeting. If you are solo like I was, you make decisions. You talk with a limited



number of people. It's a lot easier to put that into action, trying to get a new scheduler or a whole lot of issues, retired or resigned or whatever, it's probably easier to maneuver and do something about it. You kind of make your own decisions.

Moreover, another coordination costs may arise when an individual department's goals are at odds with the goals of other departments within the organization. Each department competes for dollars for investment compared to other departments in the hospital, because hospital systems would not just throw away money. Explained one physician in the employed model:

Physician 12: [W]e do compete in some way, because if we want a sort of technology or investment from the hospital we're competing for those dollars compared to everyone else in the hospital. They're not going to give it to you just to throw away. They need to see it's worth something, so you do have to answer to more people and have to satisfy a bigger group, whether it's directly competing for something specific or in general.

Competition for resources, including money, surgery time, and supplies, will cause the departments to undercut each other, leading to conflict between departments or other work groups, as evidenced in the example below. One physician in private practice

described below how intensified rivalry between departments is likely to lead to decisions that benefit their own interests rather than the organizations'. Physicians spend unnecessarily large amounts of time reporting problems, sometimes falsely reporting problems, to get funding from the head of the administration.

Physician 6: Departmentalization cripples you because when you are in a big company and you get departmentalized, you start to say things like "I had better spend my budget before third quarter is over or else they'll take it away from me." If the board asks us to do something, I push back and say no, we can do less. If they ask anything from me, I ask for more resources; it puts you in a non-productive mode.

The rivalry between departments impedes efficient resource allocation. It is therefore important for hospital systems to correctly examine whether it is worth investing before they allocate resources to each department. Otherwise, they can easily waste their resources due to rivalry among departments. This coordination cost does not exist in private practice, however, because private practice usually works in one area of specialty without the need to build boundaries and assign different roles across departments. Moreover, the notion that scarce resources need to be protected deters unnecessary rivalry among members in private practice and allows them to work for the continued existence of the practice.

- **Quality**

According to the interviews with physicians and one administrator, coordinating activities across departments is expected to improve the quality of care generally, despite the cost. In most hospital-based systems, the goal is for multiple physicians to work together to provide the best quality of care. This is driven by multi-disciplinary approaches that involve multiple physicians interacting in meetings, conferences, phone calls, and emails to reach consensus about patients' care and increase awareness of surgical options for patients. In comparison to this, physicians in private practice may have little or no interaction with anyone in the administration or with people who are in a directorship. There is little need for them to talk to physicians in different departments about what they want to do or what they are going to do because it does not make any difference to them or to the patient. An example of the multi-disciplinary approach is described below.

Physician 2: The only way to effectively treat a patient with cancer, really any kind of cancer, or specifically the types of cancers that I treat, [which] are pancreas, liver, colon, rectum, stomach, the only way to effectively treat a patient with any of those cancers is by a multidisciplinary team. So you have to have a surgeon, a medical oncologist or medical doctor or radiation type doctor or radiation oncologist, a pathologist, a radiologist, gastroenterologist, and multiple other members of that team. You have to have all those people. You have to interact with them almost daily with regard to every patient that you see. If that is

not being done, it's really not the optimal care. . . . So what I do, I talk and discuss cases with all those people that I mentioned on a daily basis for every case that we've seen, and seen together. And then. . . . we all meet. . . . [to] review the case, and then we actually see the patient together in my office at a set time after the meeting where we've discussed the patient. . . . That kind of care, specifically, cannot be given, I think, from a private practice perspective.

- **Incentives**

Coordination-related changes in physician behavior are expected to decrease physician incentives to work for the hospital. In the departmentalized system, physicians need to fight for resources of the department they are in. They become incentivized to act more to report problems and spend their time filling out reports. Or, doctors who want to have all this fancy technology in a given department, though they do not quite know how to use it and end up having rooms full of equipment that are not used eventually, are eager to get resources for such machines. When physicians think that the resources are not effectively distributed according to departments' circumstances, as in the examples below, they feel insulted and lose motivation to work for the system.

Physician 18: [In an employed model...] there are some frustrations that you have dealing with a board of trustees and administrators that really don't know my practice at all. They even say "well, if cardiologists do it this way. . . ," well. . . . I am not a cardiologist. In fact, we had an argument over X-ray machines. We need

two X-ray machines in the office, and they wanted to put in just one, and in the emergency room they only have one. [W]ell, they have access to the entire department, but in my office I have access to only what X-ray I have. So I need two X-rays, especially if there are two or three of us in the office. It took forever to have them understand that. . . . Again in private practice, if I have enough money to do it I can do it and, or my return on investment is so much and it might take a year or two to make that money back on that aspect. But I can't do that here [in the hospital system].

Having previously worked in both private practice and an employed model, a physician in the example above was able to provide the comparison. As he described, physicians in private practice, who do not need to consult with other departments when making decisions like ordering MRI machines, can always make decisions and adapt to a new environment quickly. Such decisions cannot be made as quickly in an employed model due to the need for coordination. The hospital administrators need to look at the utilization of existing machines and proceed to order only after it is clear that the new machine will benefit the overall system, not just one department. For instance, if administrators figure out that the practice of the focal doctor in the interview above is only doing two MRIs a month, the right solution should be that they should work out a system so that everyone can use the existing MRIs efficiently rather than order more MRIs. But those employed doctors whose requests to get something fancy and new get rejected would feel personally insulted and become unmotivated at work. This lack of physician motivation was described by several of the interviewed physicians.

To summarize, the process of assigning roles and responsibilities among departments to better achieve the common goals of hospitals might be the basis for the best quality of care, but it has its own problem. In addition to that, there are unexpected costs arising from intensified rivalry between departments and lack of physician motivation.

#### **4.4.3. Cooperation**

Another difference in physician behavior between an employed model and private practice is that physicians are asked to cooperate once they are employed. We can easily observe that patients in the hospital system are taken care of by other doctors when the focal doctor is out of town and not available. Also, several doctors agreed that as one way to associate with other physicians for mutual benefit, physicians in the system are often asked to restrict patterns of referrals only to those who have some kind of employment or affiliation with the hospital. To support self-referring behavior, many physicians who used to be in private practice but now are employed by the hospital system commonly indicated that they see referrals from doctors who never used to send them patients when they were in private practice, as described below.

Physician 8: As a specialist, you are relying on referrals; you are not the first line of doctors to see the patient. If you get sick you go to your primary doctor, and then your primary doctor decides whether I should send them to a cardiologist or not. So our customers, so to speak, are our primary care physicians. Now, primary

care physicians are a wide variety of employees and non-employees. So if you are employed, the hospital tells them. They [hospitals] can't dictate because that's where there are some violations of that law; it's called self-referral. So the hospitals are very careful not to do that, but in a sense they kind of tell their employees to keep it in the family, so to speak. . . . So that becomes a little bit of a play for an administration into kind of trying to weave that in, in a very legally acceptable way, where they could affect patterns of referrals only to those who have some kind of employment with the hospital or affiliation with the hospital. So that's the kind of message that I would call the unwritten message.

Physician 18: They [administrators] presented one case where they can track a lot of the money that you would generate. One guy generated nothing and the other guy generated, say, a million dollars in his referrals. So they looked at the leakage and said, well, Geez! We could have made this extra had this doctor referred his patients to us instead of out there, so they want to keep the things in house.

Physician 14: You can see a change in referral patterns. Physicians that may have referred to you before are suddenly no longer referring to you because they are now part of the hospital system. They are now employed physicians, so they are bound by those restrictions to refer only to certain people. You can see some of those changes happening.

Physician 4: Most often private practice physicians or surgeons. . . . they not only send their patients to Y hospital system, but also send their patients to other

institutions, and so they don't have the royalty so to speak. . . . but I believe when they're part of Y hospital system, they're willing to help us whenever we need them, so I think shared identity does help our system.

As described in the several examples above, when physicians become employees of a hospital system they are required to help each other within the system. This behavior is not found in private practice. Those in private practice, of course, will help each other, but they are less likely to share patients because the patients who want to see a private practice doctor generally prefer strong attachment to a particular doctor. Also, physicians in private practice, who need to build good reputation and maintain their referral bases, do not restrict referring doctors to a certain system.

Next, I examine how these cooperation-related behavioral changes within the firm, in comparison to the market, affect the cost and quality of delivered care and motivation of physicians.

- **Costs**

As mentioned earlier, unlike employed physicians, who get fixed income and benefits, physicians in private practice make as much as they work. But at the same time, they face downside risks (e.g., income fluctuating according to economic conditions). The first concern of private practice doctors, when referring patients, is not to lose their patients, especially the ones that they refer to specialty programs who may not come back.



Thus, to these physicians in private practice, cooperative behavior among hospital-affiliated doctors is seen as something that threatens their practice.

Physician 5: If it [self-referral] is a recurring pattern, they [primary physicians] really would then say, “you know, you [patient] go to somebody else for your cardiac surgery; don’t go to doctor A and his group because the patients don’t come back to us and because the patient is a source of revenue for them, too, and not only from an economic point of view, but they have relationships with them and the good primary care physicians and family practice folks have treated the patient, their family, and their family’s families.” I mean that’s how it is, especially in the more stable communities. . . . That would be probably the last time doctor A gets a case from him [the primary doctor].

As revealed not only in the example above, but also in interviews with several physicians (three in private practice and two in the employed model), cooperation among physicians within a hospital system, particularly excessive self-referral, comes with costs. Primary doctors who are not affiliated with the hospital system eventually stop sending their patients to the circle of the hospital system when they see that the patients they refer to doctors within the system do not come back. This will eventually limit the growth of patients in the future. These costs do not have counterparts in the market transaction (private practice), because, as mentioned in the previous section, physicians in private practice refer their patients regardless of hospital membership.

- **Quality**

Through cooperation, a hospital system may enable patients to be taken care of by doctors even when the focal doctor is not available. But that is not enough. Patients who want to see the same doctor often cannot because the physicians work shifts and are not on call every night. In order to see the same focal doctor, physicians need to put in extra work, which the hospitals' systems do not require, and also do not need to require because there are other physicians who can take care of these patients. Given the importance of a tight physician-patient relationship, patients who want to, but cannot, be seen by the same doctor end up dissatisfied.

Physician 19: I know from my own family. . . . [what] they don't like; in the hospitals' model they get . . . different hospitalists every two, three days. And they don't have the sense of continuity and "who's my doctor." . . . [S]o some of the patients' satisfaction with that [employed] model is not very high.

Several physicians (two in private practice and two in the employed model) remarked that weak attachment to patients will likely lead to decreased patient satisfaction. Supporting this, one will typically find that a large proportion of highly ranked doctors in community magazines or newspapers are in private practice rather than in an employed model.

Physician 14: [H]ospitals are big business, multi millions of dollars going on, and if a patient has knee arthritis, it needs a knee replacement. Okay. There are 10-12

orthopedic surgeons in this town who can do an excellent knee replacement. So all things being equal, the family physician who oversees that patient is going to send them to someone within their referral hospital group as opposed to sending them to me [a physician in private practice]. If there is a surgeon outside the hospital group that does a “better job” at a particular procedure, but the other surgeon within the group still performs it, I can tell you that the surgeon within the group will be referred the case.

Self-referral, another cooperation-related behavior change, is also expected to hurt the overall quality of delivered care, as shown in the foregoing example of a physician in private practice. Problems arise when physicians in an employed model send their patients not because referred physicians are good, but because they are within the circle of the hospital system. These self-referrals may benefit the financial health of the hospital system for the short term, but eventually hurt the system due to a decrease in quality of care.

- **Incentives**

In private practice, physicians have to be available and see patients on time. If they fail to do this, there are no other physicians to take their place. A small number of other physicians are busy treating their own patients. Thus, physicians who are not available hurt their reputations and lose their referral base. But physicians in an employed model, who take shifts with other doctors, do not need to put in extra effort. When the clock starts, they work, and when it stops, they stop. The result is increased availability,

but decreased continuity in patient care. As shown in the previous quality section, patients in large hospital systems may be seen by a doctor quickly, but feel detached from their doctor. As a result of being part of a hospital system, physicians do not put in extra effort and physician incentives to pursue the interests of the hospital system decrease.

Explained one physician in private practice:

Physician 9: [I]n private practice your referral base is directly tied to your outcomes and how well you treat your patients and your referring doctors. And so I think in private practice you are much less likely to turn down a patient or a consult because you want the patients and their referring doctors to know that you are always available. Because if you are not, they may seek to send their patients somewhere else. And you are also probably less likely to take as much vacation time for the same reason. Whereas I think if you are employed by the hospital, you just kind of say, “Well from the marketing standpoint, all that, that’s their job. When I’m off, I’m off; when I’m working, I’m working, and I let them take care of all the business aspects of the practice.”

#### **4.5. Discussion and Conclusion**

In previous studies, aspects apart from changes in opportunistic behavior are assumed to be held constant when a transaction shifts from the market to the firm. Transaction cost economics offers little, if any, explanation of what such changes in boundary decisions might entail in the way of other organizational costs. It was to offer

such explanations that I undertook the qualitative study of physician-hospital arrangements. The interviews with physicians and hospital administrators in two different types of physician-hospital arrangements highlighted three evident organizational costs: monitoring costs, coordination costs, and cooperation costs. Also, the qualitative interviews reveal that unlike the previous literature, which posits that managerial freedom to pursue personal goals rather than organizational value decreases after integration, changes in behavior in fact work together to increase managerial freedom. In other words, managers' incentives to work for the organization decrease. By empirically examining variation both within and outside firms, the present study enhances understanding of the determinants of managerial discretion.

This study has some limitations. My study considers only two simplified physician-hospital arrangements. In the hospital industry, there exist various types of physician-hospital arrangements, such as independent practice associations, open physician hospital organizations, closed physician organizations, management service organizations, foundation models, and integrated salary models. My study chose two extreme versions of integration: independent practice associations (private practice), and the integrated salary model (an employed model).<sup>14</sup> As a future direction, it would be worthwhile to explore middle ground physician-hospital arrangements between these two extremes in order to identify how organizational costs vary across different levels of vertical integration. Future research could also examine changes in physician-hospital arrangements (e.g., cases in which private practices are acquired by hospital systems, that

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<sup>14</sup> According to a continuum based on the degree of integration between a hospital and its physician groups, independent practice associations are the least integrated case and the integrated salary model is a fully-integrated case (Cuellar & Gertler, 2006).

is, a change from private practice to the employed model), and how these changes alter physician behavior. In the current study, I compare physician behavior between two arrangements during a snapshot of a time. Examining how physicians gradually change their behavior during periods of changes in arrangements could capture the appearance and disappearance of both market and organizational costs. Despite these limitations, I believe that providing a detailed look at how physician behavior differs between two extremes, and identifying what organizational costs arise in the integrated model, will open discussion of an understudied, albeit important, area of organizational costs within firms.

## **CHAPTER 5**

### **5. CONCLUSION**

The broad objective of this dissertation is to investigate how different organizational forms – the formal structures by which firms coordinate and control the behavior of their members – affect managerial discretion. In chapter 3, I study how managerial discretion is affected by ownership type (for-profit, government, and not-for-profit), highlighting the different levels of organizational constraints that exist in each type. In chapter 4, I examine how managerial discretion varies following the internalization of transactions from the market, identifying specifically the organizational costs incurred when transactions are governed within the firm.

The core theoretical contribution of the dissertation is the examination of how managerial discretion is determined by firm-level factors, namely, ownership type and vertical integration, which have not been studied previously in comparison to industry and individual-level factors. In doing so, it contributes to the theories of ownership type and the firm.

First, in a departure from much of the ownership literature that focuses on the lever of incentive alignment, my dissertation considers organizational constraints as an important new lever that guides managerial behavior. Previously, scholars who focused

on variation in the stock dispersion of for-profit organizations and incentive alignment mechanisms posited that ownership type itself does not affect managerial behavior due to the endogeneity between ownership type and incentives. What I argue is that there are other ways of classifying ownership type, and that when we start considering another lever that guides managerial behavior, organizational constraints, it becomes apparent that the effect of ownership is not completely offset by incentives.

Methodologically, my dissertation adds to recent discussions by several authors of the effect of ownership type and managerial behavior. What Demsetz and his colleagues criticized is that scholars had simply regressed ownership type on managerial behavior (Demsetz and Lehn, 1985; Demsetz and Vilalonga, 2001). Demsetz and his colleagues, however, believed that the relationship between ownership and managerial behavior would disappear when they introduce a good instrument, because ownership type and incentives are simultaneously chosen. But the problem still exists that the strength of the results is only as good as the instruments, and instruments like firm size, firm specific risk, and debt ratio, are not truly exogenous. As a result, in previous literature, the relationship disappears with some instruments and still exists with other instruments (Cho, 1998; Davies, Hillier, & McColgan, 2005; Himmelberg, Hubbard, & Palia, 1999). What I contribute to the existing literature is to suggest that the instrumental approach is not the best way to see the effect of ownership. Instead, I look at an exogenous shock that affects behavior without affecting ownership type or incentive systems. This enables me to trace the relationship between ex ante differences in ownership type and changes in managerial behavior in response to the shock. One such shock is the threat of malpractice liability in the hospital industry.



Finally, my dissertation complements existing theories of the firm. Transaction cost economists have focused more on decreases in opportunism after integration, but less on organizational costs as opposed to market costs. Lack of attention to organizational costs post integration is problematic in deciding between the choice of firm or market, because failure to correctly compare organizational costs and market costs may lead to wrong decisions. By carefully examining the organizational costs imposed by integration decisions, my dissertation addresses concerns about lack of research on organizational failure and the costs of integration, to which Oliver Hart and other scholars (Hart, 2011; Zenger et al., 2011) have called attention.

The dissertation opens up several opportunities for future research. First, I chose a particular way of classifying ownership type – as for-profit, not-for-profit, and government – and studied the impact of three types of ownership on managerial discretion. In order to further validate the importance of the lever of organizational constraints, future work is warranted to test how other types of ownership (e.g., family/institutional/state or religious/non-religious) affect managerial behavior.

Second, the question of when and how firms may reduce organizational costs cannot be addressed by the present study. In the current study, I found integration as a means of adjusting managerial discretion to invariably increase costs. However, I argue that integration may also provide several benefits that may offset these costs. For instance, shared identity (Akerlof & Kranton, 2005) between employees and the firm will compel employees to actively work towards organizational goals (Akerlof & Kranton, 2005), and help them coordinate actions in a timely manner with a reduced level of information sharing (Camerer & Knez, 1996; Simon, 1991). Future work can investigate whether

conditions such as employee stock ownership and employee participation on the board foster organizational identification (Pierce, Kostova, & Dirks, 2001) and thus induce managerial effort, thereby helping firms offset organizational costs.

Finally, my dissertation investigates post integration organizational costs using semi-structured interviews in the hospital industry. Future work relying on complementary secondary data or survey methods to describe organizational costs in detail would increase the credibility and validity of the results.

In conclusion, my dissertation seeks to contribute to the literatures on ownership type, the firm, and managerial discretion. Using both quantitative and qualitative methods, I extend the theory of ownership by showing that ownership matters the after accounting for endogeneity between ownership type and incentives, and suggesting a new perspective on organizational costs that are incurred following integration. I hope my efforts will deepen our understanding of ownership, the firm, and managerial discretion.

**TABLE 1.**

	<b>Concentrated Ownership</b>	<b>Dispersed Ownership</b>
<b>Costs of Risk Bearing</b>	High	Low
<b>Agency Costs</b>	Low	High

## **Appendix 1. Interview Guideline (1)**

### **Introduction**

This is a study of how different ownership structures affect physician behavior. The specific interview guide is as follows. Notice that the interview guide is customized for physicians. When interviewing hospital administrators, the questions will be slightly modified.

### **General Questions**

- 1. First, can you tell me about yourself? How long have you been working in this hospital?**
  - Experience in hospitals
  - Title & Specialty
  - How you came to the job that you're doing now
  - Whether you are employed (hospital-based) or not
  
- 2. Let's talk about other sources that might affect your practice in treating your patients above and beyond symptoms of patients.**
  - Performance Feedback: Is there any specific periodic performance feedback from hospital administration office?
  - Peer pressure: Do administrators come and compare you with other physicians to encourage you to improve your practice or to reduce the costs of treating patients? Or, is there any implicit peer pressure that you might think of?
  - Bureaucracy: Let's say you want to have several CT scans or MRIs to make a more accurate diagnosis. Or, let's say you want to do surgery to your patients? What are the administrative processes that you undergo? For instance, do you need to get confirmed by the administration office of your hospital before you do those tests or surgery? Or, do you hear any feedback regarding the costs of those tests or the performance of those surgeries from administration office afterwards?
  - Financial constraint: Have any administrators or physician leader spoken about financial constraints of hospitals to you, e.g., Medicare cutback, insurance company, or lack of patients? Did that affect your practice style?

- Board: Do you think that the governing board has an effect on your practice? How often do you see or hear from those board members? Are there any physicians who are on the governing board?
- Employment: Would these be different if you are/are not an employee of the hospital?

## Ownership Structure

### 1. Have you ever worked in the hospitals with different ownership structure?

#### a) Yes

- What was the ownership structure of the hospital at which you've worked before?
- Do you think that your practice has changed since you moved to the current hospital?
- What are the changes?
- Why do you think that you've changed your practices?
- Do you think the level of discretion has changed since you moved to the current hospital?
- Could you compare and contrast two (or more) different ownership structures?

#### b) No

- Do you think that physician practices differ across different hospital ownership structures?
- Do you expect that your practices will change if you move to hospitals with a different ownership structure?
  - If so, why do you think it will change? If not, why?

## Incentive System

### 1. Do you have administrative, teaching, research or other professional obligations in the hospital?

- How is your contribution valued?
- Does the number of patients affect your salary? Or will the number of hours you worked be adjusted?
- Is there any adjustment for teaching or research?

### 2. You already explained the difference among different hospital ownership structures. Would your contribution to the hospital be valued differently if you were working in one with a different ownership structure?

- Do you think your salary will be different if you move to other hospitals? Do you think any obligations that you have now will change if you move?

## Malpractice Liability

### 1. Have you heard of any large malpractice lawsuits that have happened in your hospital or any other hospitals near you?

#### a) Yes, in other hospitals but not in our hospitals

- Where and when did such lawsuits happen?
- Do you know how the hospitals reacted to those lawsuits?

Let's assume that malpractice lawsuits happen to your hospital.

- How do you think that your hospital would react?
- What are the circumstances that you can think of?
- Do you think that there will be some circulars passing around within the hospitals?
  - If so, what would be in that circular?
- With whom should the physician share this problem?
- Is there any risk management department where you can talk to lawyers?

#### b) Yes, only in our hospital but not in other hospitals

- How did you know?
- Were there any circulars passed around?
  - What did you think when you saw those circulars?
- Did you hear from other colleagues?
- Were there any announcements?
- Did you read about these in local newspapers?
- How did your hospital react to those lawsuits?
- Did your hospital take any action to revise expectations about the litigious environment and make you become more cautious?
- Did you get help from the risk management department of your hospital (if any)?
- Do you think that your hospital reacted to those lawsuits in an efficient way? Could there be any room for improvement?

## Appendix 2. Characteristics of Research Sites

State	State Poverty Rate 01'	County	County Poverty Rate 01'	Hospital Name	Ownership Types
MS	19.0%	Marshall County	19.0%	ALLIANCE HEALTHCARE SYSTEM	for-profit
MS	19.0%	Grenada County	19.1%	GRENADA LAKE MEDICAL CENTER	government
MS	19.0%	Lowndes County	19.1%	BAPTIST MEM HOSPT-GOLDEN TRIANGLE	not-for-profit
MS	19.0%	Lauderdale County	18.7%	RUSH FOUNDATION HOSPITAL	not-for-profit
MS	19.0%	Lauderdale County	18.7%	RILEY MEMORIAL HOSPITAL	for-profit
MS	19.0%	Lauderdale County	18.7%	JEFF ANDERSON HOSPITAL	not-for-profit
MS	19.0%	Lauderdale County	18.7%	THE SPECIALTY HOSPITAL OF MERIDIAN	not-for-profit
MS	19.0%	Jones County	18.8%	SOUTH CENTRAL REGIONAL MEDICAL CENTR	government
LA	18.3%	Webster Parish	18.2%	SPRINGHILL MEDICAL CENTER	for-profit
LA	18.3%	Webster Parish	18.2%	MINDEN MEDICAL CENTER	for-profit
LA	18.3%	Pointe Coupee Parish	18.1%	POINTE COUPEE GENERAL HOSPITAL	government
LA	18.3%	Union Parish	18.1%	TRI WARD GENERAL HOSPITAL	government
LA	18.3%	Union Parish	18.1%	UNION GENERAL HOSPITAL INC.	not-for-profit
LA	18.3%	Assumption Parish	18.7%	OUR LADY OF THE LK ASSUMP. COMM HOS	not-for-profit
LA	18.3%	Jefferson Davis Parish	17.7%	OCHSNER CLINIC FOUNDATION	not-for-profit
OH	10.3%	Morrow County	10.3%	MORROW COUNTY HOSPITAL	government
OH	10.3%	Montgomery County	10.4%	FRANCISCAN MEDICAL CENTER - DAYTON	not-for-profit
OH	10.3%	Montgomery County	10.4%	MIAMI VALLEY HOSPITAL	not-for-profit
OH	10.3%	Montgomery County	10.4%	GOOD SAMARITAN HOSPITAL	not-for-profit
OH	10.3%	Montgomery County	10.4%	KETTERING MEMORIAL HOSPITAL	not-for-profit
OH	10.3%	Montgomery County	10.4%	DAYTON HEART HOSPITAL	for-profit
OH	10.3%	Montgomery County	10.4%	LIFECARE HOSPITALS OF DAYTON	for-profit
OH	10.3%	Montgomery County	10.4%	TWIN VALLEY BHO-DAYTON CAMPUS	government
MI	9.8%	Delta County	9.9%	ST. FRANCIS HOSPITAL	not-for-profit
MI	9.8%	Kalamazoo County	10.0%	BRONSON METHODIST HOSPITAL	not-for-profit
MI	9.8%	Kalamazoo County	10.0%	BORGESS MEDICAL CENTER	not-for-profit
MI	9.8%	Kalamazoo County	10.0%	BRONSON VICKSBURG HOSPITAL	not-for-profit
MI	9.8%	Kalamazoo County	10.0%	SSH - KALAMAZOO	for-profit
MI	9.8%	Kalamazoo County	10.0%	KALAMAZOO PSYCHIATRIC HOSPITAL	government
MI	9.8%	Presque Isle County	10.4%	ROGERS CITY REHABILITATION HOSPITAL	for-profit
MI	9.8%	Tuscola County	9.1%	CARO CENTER	government
CT	7.1%	New London County	6.3%	LAWRENCE & MEMORIAL HOSPITAL	not-for-profit
CT	7.1%	New London County	6.3%	THE WILLIAM W. BACKUS HOSPITAL	not-for-profit
CT	7.1%	Windham County	7.9%	DAY KIMBALL HOSPITAL	not-for-profit
CT	7.1%	Windham County	7.9%	WINDHAM COMMUNITY MEMORIAL HOSPITAL	not-for-profit
CT	7.1%	Fairfield County	6.2%	SOUTHWEST CT MENTAL HEALTH SYSTEM	government
CT	7.1%	Hartford County	8.0%	JOHN DEMPSEY HOSPITAL	government
CT	7.1%	Litchfield County	5.0%	SHARON HOSPITAL	for-profit
NH	6.0%	Merrimack County	6.2%	CONCORD HOSPITAL INC.	not-for-profit
NH	6.0%	Merrimack County	6.2%	NEW LONDON HOSPITAL	not-for-profit
NH	6.0%	Merrimack County	6.2%	FRANKLIN REGIONAL HOSPITAL	not-for-profit
NH	6.0%	Merrimack County	6.2%	HEALTHSOUTH REHAB HOSPITAL OF CONCOR	for-profit
NH	6.0%	Merrimack County	6.2%	NEW HAMPSHIRE HOSPITAL	government
NH	6.0%	Hillsborough County	5.5%	MONADNOCK COMMUNITY HOSPITAL	not-for-profit
NH	6.0%	Hillsborough County	5.5%	CBHS OF BROOKSIDE / NEW ENGLAND LLC	for-profit
NH	6.0%	Rockingham County	4.2%	NORTHEAST REHABILITATION HOSPITAL	government

### Appendix 3. Literature on Organizational Costs

Authors	Related Organizational Tools	Organizational Costs	Key Argument
Zenger, Felin, & Bigelow (2011)	Rewards	Social Comparison Costs	Employee's incomplete information set and tendency to exaggerate their contribution to the organization can make them feel they are unfairly rewarded for their efforts. This can cause them to put less effort or exit from the organization.
Aghion & Tirole (1997)	Authority	Inefficiencies in communication	This paper examines the allocation of formal authority and real authority. They emphasize the trade-off between loss of control and initiative. This implies that centralization (non-delegation of formal authority) will jeopardize communication between the agent and the principal.
Stein (1997)	Authority	Inefficiencies in communication	This paper provides scope conditions of Aghion and Tirole (1997)'s argument. Centralization (hierarchical firms) only hurts agent's initiatives in case of soft information (i.e., information that cannot be credibly transmitted to others). When information is hardened and thus can be verified by others relatively easily, hierarchies perform better.
Milgrom (1988)	Authority	Influence Costs	Firm productivity can decline if subordinates spend too much to influence the decisions made by the central authority. Organization should be designed carefully to draw individuals' attention from redistributive activities to socially productive ones.
Milgrom & Roberts (1988)	Authority	Influence Costs	In the presence of information asymmetries, the agents who have an information advantage attempt to manipulate the information they develop and provide with the purpose of influencing decision to their benefits.
Zenger, Felin, & Bigelow (2011)	Authority	Influence Costs	Same as Milgrom & Roberts (1988); Milgrom (1988)
Akerlof & Kranton (2005)	Identity	Motivational Capital	Monetary compensation, often based on imperfect indicator of individual effort, is incomplete. Identity, which aligns the goals of employees with those of the firm, can be supplement to monetary compensation. To motivate employees through identity, firms need to invest in motivational capital, such as firm-sponsored events.



Zenger, Felin, & Bigelow (2011)	Identity	Social Attachment Costs	Enhanced level of social relations within a firm may hurt firm efficiency. Overembeddedness leads to (1) failure to switch to new relations deemed more useful and to (2) loss of reputation.
Camerer & Knez (1996)	Coordination	Costs of grouping dilemmas	Grouping can facilitate coordination and cooperation within a group through direct supervision and mutual adjustment. However, grouping can also inhibit coordination and cooperation among different groups. This is called grouping dilemma, which determines the boundaries of each group and organization itself.

## **Appendix 4. Interview Guideline (2)**

### **A. Physicians**

This is a study of how different physician-hospital integration affects physician behavior. The specific interview guide is as follows.

**First, can you tell me about yourself? Please summarize your personal and professional background.**

- Experience in hospitals
- Title & Specialty
- How you came to the job that you're doing now
- Whether you are employed (hospital-based) or not

**Let's talk about other sources that might affect your practice in treating your patients above and beyond symptoms of patients.**

#### **Rewards**

- 1. Do you have administrative, teaching, research or other professional obligations in the hospital?**
  - How is your contribution valued? Who collects the information? How do they collect information?
  - Does the number of patients affect your salary? Or will the number of hours you worked be adjusted? Is there any adjustment for teaching or research?
- 2. Would your contribution to the hospital be valued differently if you were working in one with a different physician-hospital arraignment (integration vs. contractual arrangement)?**
  - Do you think your salary will be different if you move to other hospitals? Do you think any obligations that you have now will change if you move?
- 3. How do you think about your reward system?**
  - How effectively is individual contribution or performance valued? Have you seen any free-riding? Or unfair cases? (e.g., missing bonuses because of others mistakes)
  - Can you think of any room for improvement in the hospital's reward system?

### Authority

- 1. Who gives instruction in how to perform your work?**
  - How do you communicate with your hospital administration office or section/division heads?
  - How often do you hear feedback or orders from the administration office or section/division heads? What are the things they ask you to do? Do they encourage you to improve your practice or to reduce the costs of treating patients?
  - Would your opinion be well received by them? What efforts do they make, if any, to collect information on physicians' needs or concerns?
- 2. Would the instruction/communication be different if you are/are not an employee of the hospital?**
  - How do you (and other physicians) change your practice to impress the administration office or section/division heads? What kinds of activities does this entail?

### Identification

- 1. Has membership in this hospital changed you as a physician?**
  - In what way? Through what processes or experiences? How do you evaluate this change?
  - How would you describe yourself when you first entered this hospital? How would you describe yourself now? Can you illustrate any characteristics at each point with an example?
- 2. Tell me about the hospital's socialization processes.**
  - What kinds of processes does the hospital have in place to instill a shared identity, or a sense of "we"?
  - Do hospitals sponsor events intended to enhance trust and build identity? Any group lunches, sporting activities, or other company gatherings?
  - How effective are these processes?
- 3. How successful/unsuccessful do you consider your hospital? Why? Against which standard do you assess its relative success?**
  - Can you list key elements of your hospital's success? How would you describe shared identity as a source?

### Coordination

- 1. How do you describe coordination with other departments?**
  - Can you illustrate this coordination with an example? (e.g., sharing CT scans or getting advice from other departments when making a diagnosis)

- How often do you interact with other departments or sections? How does this interaction affect your practice in treating patients?
- How successful do you consider this coordination? How would you improve this?

**2. How would this interaction with other departments or sections be different if you were/were not an employee of the hospital?**

**Physician-hospital Integration**

**Have you ever worked in the hospitals with a different arrangement?**

**a) Yes**

- What was the physician-hospital arrangement (integration vs. contractual arrangement) at which you worked before?
- Do you think that your practice has changed since you moved to the current hospital?
- What are the changes?
- Do you think the level of discretion has changed since you moved to the current hospital? Are there a new set of actions that were not available to you but are now available? Are there any restrictions on the set of actions that were previously available to you, but not available in the current hospital?

**b) No**

- How do you think that physician practices differ across different physician-hospital arrangements?
- How do you expect that your practices will change if you move to hospitals with a different physician-hospital arrangement?
- If so, why do you think it will change? If not, why?

## **B. Hospital Administrators**

This is a study of how different physician-hospital integration affects physician behavior. The specific interview guide is as follows.

**First, can you tell me about yourself? Please summarize your personal and professional background.**

- Experience in hospitals
- Title & Specialty
- How you came to the job that you're doing now
- Whether you are employed (hospital-based) or not

**Let's talk about other sources that you think affect your physicians' practice in treating their patients above and beyond symptoms of patients.**

### **Rewards**

- 1. Do physicians have administrative, teaching, research or other professional obligations in the hospital?**
  - How is their contribution valued? Who collects the information? How do you collect information?
  - Does the number of patients affect their salary? Or will the number of hours they worked be adjusted? Is there any adjustment for teaching or research?
- 2. Do you think that the way that physicians' contribution to the hospital is valued would be different across different physician-hospital arrangement (i.e., physicians are employed or have independent contractual arrangement)?**
  - Do you think physician salary will be different if they move to other hospitals? Do you think any obligations that physicians have now will change if they move?
- 3. How do you think about physician reward system?**
  - How effectively is individual contribution or performance valued? Have you seen any free-riding? Or unfair cases? (e.g., missing bonuses because of others mistakes)
  - Can you think of any room for improvement in the hospital's reward system?

### **Authority**

- 1. Who gives instruction to physicians?**
  - How do physicians communicate with you, other administrators or section/division heads?

- How often do you give feedback or orders to physicians? What are the things you ask them to do? Do you encourage them to improve their practice or to reduce the costs of treating patients?
  - How often do you hear their opinion? How do you collect information on physicians' needs or concerns?
2. **Would the instruction/communication be different if physicians are/are not an employee of the hospital?**
    - Could you elaborate the difference? What kinds of activities does this entail?

### Identification

1. **Do you think physician employment in this hospital change them as a physician?**
  - In what way? Through what processes or experiences? How do you evaluate this change?
  - How would you describe them when they first entered this hospital? How would you describe them now? Can you illustrate any characteristics at each point with an example?
2. **Tell me about the hospital's socialization processes.**
  - What kinds of processes do you implement to instill a shared identity, or a sense of "we"?
  - Do hospitals sponsor events intended to enhance trust and build identity? Any group lunches, sporting activities, or other company gatherings? If so, who are invited? Are physicians in the independent physician practice also invited?
  - How effective are these processes?
3. **How successful/unsuccessful do you consider your hospital? Why? Against which standard do you assess its relative success?**
  - Can you list key elements of your hospital's success? How would you describe shared identity as a source?

### Coordination

1. **How do you describe coordination with other departments?**
  - Can you illustrate this coordination with an example? (e.g., sharing CT scans or getting advice from other departments when making a diagnosis)
  - How often do physicians interact with other departments or sections? How does this interaction affect their practice in treating patients?
  - How successful do you consider this coordination? How would you improve this?

- 2. How would this interaction with other departments or sections be different if physicians were/were not an employee of the hospital?**

### **Physician-Hospital Integration**

**Have you ever worked in the hospitals with a different arrangement?**

**a) Yes**

- What was the physician-hospital arrangement (integration vs. contractual arrangement) at which you worked before?
- Do you think that physician practice has changed since you moved to the current hospital?
- What are the changes?
- Do you think the level of physician discretion is different? Are there a new set of actions that were not available to physicians but are now available? Are there any restrictions on the set of actions that were previously available to physicians, but not available in the current hospital?

**b) No**

- How do you think that physician practices differ across different physician-hospital arrangements?
- How do you expect that physician practices will change if you move to hospitals with a different physician-hospital arrangement?
- If so, why do you think it will change? If not, why?

## Appendix 5. Characteristics of Interview Subjects

	Subject	Hospital-physician Arrangement	Specialty	Gender	Location
1	Administrator 1	Hospital Administrator	n/a	Male	Detroit, MI
2	Physician 1	Employed model	Surgery	Male	Detroit, MI
3	Physician 2	Employed model	Surgery	Male	Detroit, MI
4	Physician 3	Employed model	Surgery	Male	Detroit, MI
5	Physician 4	Private Practice	Surgery	Female	Detroit, MI
6	Physician 5	Employed model	Surgery	Male	Detroit, MI
7	Physician 6	Private Practice	Surgery	Male	Detroit, MI
8	Physician 7	Employed model	Surgery	Male	Saginaw, MI
9	Physician 8	Employed model	Surgery	Male	Saginaw, MI
10	Physician 9	Private Practice	Surgery	Male	Saginaw, MI
11	Physician 10	Private Practice	Surgery	Male	Saginaw, MI
12	Physician 11	Private Practice	Surgery	Male	Detroit, MI
13	Physician 12	Employed model	Surgery	Male	Ann Arbor, MI
14	Physician 13	Private Practice	Surgery	Female	Saginaw, MI
15	Physician 14	Private Practice	Surgery	Male	Saginaw, MI
16	Physician 15	Employed model	Surgery	Male	Saginaw, MI
17	Physician 16	Private Practice	Surgery	Male	Detroit, MI
18	Physician 17	Private Practice	Internal Medicine	Female	Ann Arbor, MI
19	Administrator 2	Hospital Administrator	n/a	Male	Saginaw, MI
20	Physician 18	Employed model	Surgery	Male	Saginaw, MI
21	Physician 19	Employed model	Surgery	Female	Saginaw, MI
22	Physician 20	Private Practice	Surgery	Male	Columbus, OH
22	Physician 21	Private Practice	Surgery	Male	Saginaw, MI
24	Physician 21	Employed model	Surgery	Female	Ann Arbor, MI



## Appendix 6. Variations in Interview Responses

	<b>Monitoring</b>	<b>Coordination</b>	<b>Cooperation</b>
<b>Costs</b>	3 responses (1 in private practice 2 in employed model 0 administrators)	6 responses (1 in private practice 5 in employed model 0 administrators)	6 responses (3 in private practice 3 in employed model 0 administrators)
<b>Quality</b>	6 responses (0 in private practice 4 in employed model 2 administrators)	4 responses (0 in private practice 3 in employed model 1 administrators)	5 responses (3 in private practice 2 in employed model 0 administrators)
<b>Incentives</b>	9 responses (5 in private practice 4 in employed model 0 administrators)	3 responses (1 in private practice 2 in employed model 0 administrators)	1 responses (1 in private practice 0 in employed model 0 administrators)
	18 responses in total	13 responses in total	12 responses in total

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