MAKE OR BUY? A THEORETICAL AND EMPIRICAL INVESTIGATION OF PUBLIC SECTOR CONTRACTING DECISIONS

by

CRAIG R. SMITH

(Under the Direction of Laurence J. O’Toole)

ABSTRACT

The decision to contract public services to outside organizations, while often controversial, has become an increasingly accepted feature of public management over the past three decades. Indeed, these so-called “make-or-buy” decisions are of paramount importance to public organizations because, in effect, they define the scope of direct governmental activity. The aim of this dissertation is to identify the factors affecting whether a service will be contracted out or not; to whom; and how individual contracts are designed. Together, these three components encompass the entire range of make-or-buy decisions in the public sector.

I assert that public managers recognize service- and market-level characteristics which render some services better suited for hierarchical governance, while others are more easily governed by contracts. I theorize that managers are able to identify the core capabilities of public organizations, and thus avoid contracting them out. For ancillary services, public managers identify attributes which will likely lead to costly contracting and keep the services inside the hierarchy. Moreover, for those services which are contracted out, the government can protect against opportunism by structuring the contract to mirror hierarchy.
I use a variety of quantitative methods to test these general propositions. The data for my analyses are drawn from two primary sources. First, I use local service delivery data from the International City/County Management Association to examine the factors affecting whether a service is contracted out or not, as well as to whom the contract is awarded. Second, I use federal contract data from the U.S. Environmental Protection Agency to examine the factors influencing how specific contracts are designed and structured.

I find support for the hypothesis that managers protect core capabilities from contracting out, but also consider governance costs when deciding whether to contract out ancillary capabilities. When the decision to contract has been made, I find evidence that managers protect against opportunism by choosing cost-plus contracts and/or increasing the length of the contract. Finally, I test – and find some empirical support for – the proposition that make-or-buy decisions aligned with the theoretical predictions described in the dissertation will result in performance improvements.

INDEX WORDS: Contracting Out, Privatization, Contracting Decisions, Contract Management, Transaction Costs, and Capabilities
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CHAPTER 1

INTRODUCTION

In their recent *New York Times* article, “In Washington, Contractors Take on Biggest Role Ever,” Scott Shane and Ron Nixon (2007) criticize the federal government’s increased reliance on private contractors for public service delivery. They assert that the ever expanding pool of nongovernmental contractors constitutes a virtual fourth branch of government. Indeed, the authors note that federal contracting expenditures virtually doubled between 2000 and 2007 – from $207 billion to nearly $400 billion. But unlike the other branches of government where mechanisms are in place to ensure proper accountability, contractors operate with comparatively little institutional control. The primary thesis of their argument is that the federal government has entered a new phase of contracting that is fundamentally different from the past; in the new period, they argue, not only has the number and size of contracts increased, but the scope of services contracted has expanded to include “inherently governmental” services. Beyond providing some colorful anecdotal evidence suggesting that politics is driving the increased reliance on contracting for goods and services, the authors provide little clarification as to why contracting has expanded overall, and they fail to shed light on the factors impacting contracting decisions. Are these decisions driven primarily by politics, as the authors suggest, or do other influences play an important role in the decision-making process? One thing is for certain: the article effectively highlights the magnitude of federal contracting in the United States.

In reality, government contracting is not a new phenomenon. Throughout American history, contracting out services to nongovernmental organizations has been an important tool in
our system of governance. Postal delivery, for example, was almost exclusively contracted out to private organizations in the earliest days of the republic, since the federal government lacked the capacity to provide it directly (see Carpenter 2001). This is not to suggest that direct service delivery by public employees in the United States was unimportant in the early decades, but rather that as American government expanded from its relatively humble origins, public administrators and managers had to seek out and employ additional methods to meet citizen demands.¹ In recent decades, as the Shane and Nixon (2007) article illustrates, contracting out has emerged as the primary alternative to direct provision by public employees. As a result, the private for-profit and nonprofit sectors have been progressively more active in public service delivery to enable governments to meet the changing demands of their constituencies while facing the external challenges imposed by politicians, federal regulations, and reform movements (Milward and Provan 2000). In fact, the term “governance” itself is often used to evoke a broad, multi-dimensional approach to service delivery (Pierre and Peters 2000; Lynn et al. 2001). In light of this trend, one could argue that public organizations and public employees are increasingly viewed as a service delivery option.

Not surprisingly, the increased reliance on contracting out public services to the private sector has elicited a great deal of attention in the public administration literature. In general, there are two primary streams of contracting research in this literature. In the first stream, researchers typically focus on the potential cost savings and the relative quality of the services provided by private sector contractors compared to those provided directly by public organizations. In general, these studies test the propositions of contracting advocates – often schooled in public choice economics – who argue that contracting out services is one way to

¹ For example, during the Progressive Era nonprofit organizations met the increased demand for health and human services (Rosenthal 2000).
break the perceived inflexibility and rigidity of public sector monopolies by infusing market characteristics, such as competition, into public service delivery (see Boyne 1998 for overview). After nearly three decades of empirical research, public administration scholars have found no consistent evidence that private contractors will save money and/or improve the quality of the services provided. If anything, the evidence has been consistently mixed. Some researchers have found that competitive contracting will save on costs without sacrificing quality (Savas 2000; Greene 2002; Chi and Jasper 1998). Yet other studies have found that there is a tradeoff between cost and quality, especially when contracting for social welfare services (Bendick 1989). In his broad study on privatization, Donahue (1989) recounts numerous examples of how contracting actually costs governments more when compared to direct public service provision, with no appreciable improvements in service quality. On a more pragmatic note, others have argued that “direct public service is a rational economic strategy” in many instances when compared to private service provision (Selar 2000: p. 68). In sum, it appears that contracting out may be the appropriate service delivery choice in some cases and not in others. Indeed, Hodge’s (1999) meta-analysis of contracting research provides support for this assertion. He finds that there have been cost savings attributed to contracting, but that these savings have been modest and limited to a few service areas such as garbage collection, cleaning, and maintenance.

The second primary stream of contracting research found in the public administration literature focuses on the normative implications of contracting out services to nongovernmental organizations. In an influential essay, Moe (1987) argues that many government services should

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2 Many of the principles underlying recent reform movements such as new public management can be traced back to the work of public choice theorists (see Pollitt and Bouckaert 2000). In one of the most widely cited studies, Niskanen (1971) argues that public administrators, like their private sector counterparts, are self-interested actors. Unlike private sector managers, however, public administrators are shielded from competition and profit driven enterprise, which subsequently leads them to maximize budgets instead of profits. Given these assumptions, Niskanen’s model predicts that public officials will distort information and behave rigidly in an effort to protect agency budgets from legislative overseers.
not be contracted out due to legal reasons stemming from stipulations described in the U.S. Constitution (see also Goodsell 2007). According to Moe, services such as national defense are sovereign to the federal government and therefore should remain under direct governmental control. In a similar vein, other scholars have challenged the appropriateness of contracting particular services due to the subsequent difficulties in maintaining proper accountability (Ward 2007; Romzek and Johnston 2005). When taken to its extreme, Milward (1996) envisions a scenario where the increased reliance on contracting could lead to the emergence of a “hollow state,” where government organizations have essentially gutted their capacity to produce or “make” services altogether, leaving only the contract management functions.

If there is a singular point to take away from the two aforementioned streams of research, it is that contracting out is not a magic bullet or a panacea for the perceived problems facing public organizations. Instead, the lack of consensus on whether contracting for services actually saves money and/or improves service quality, coupled with the normative arguments against contracting, has led some to suggest that public sector contracting is difficult to understand and predict. For example, Cooper (2003) argues that “contemporary government contracting is more the result of practice and efforts at problem solving than of any overarching theory” (p.16). Moreover, without any consistent and comprehensive evidence available to bolster their case, those championing expansive contracting agendas are often met with stiff resistance from interest groups, unions, and public employees (see Fernandez and Smith 2006). As a result, the contracting trend has elicited a considerable amount of controversy and debate among academics and practitioners.

In spite of Cooper’s less than sanguine view of contracting theory, a third, albeit less prominent, stream of contracting research that focuses on the contracting decision has made
inroads in the public administration literature (see Ferris and Graddy 1986; Stein 1990; Globerman and Vining 1996; Clingermayer et al. 2003; Brown and Potoski 2003). Scholars from this group have provided important theoretical and empirical studies which help make sense of why particular services tend be contracted out more often than others. But beyond focusing on the decision itself, there are two important similarities between these studies. First, the attributes of the service are viewed as important determinants of the contracting decision. In one notable example, Ferris and Graddy (1986) examined a broad set of local services to distinguish the relative impact of different service level and market attributes on contracting decisions. In addition, they argue that these attributes will also influence whom the contract is awarded to. So instead of making normative arguments about which services should or should not be contracted out, or testing the relative efficiency of contracting one particular type of service, these scholars take a broader, more positive approach to research and analyze a full range of services simultaneously. The implicit assumption inherent in these studies is that contracting out is an increasingly viable service delivery option. Thus, the ability to understand why public managers choose to contract out certain services tells us quite a bit about how governments, in general, have evolved in recent decades.

A second common thread found in this stream of research is that the “costs” of contracting are separated from the costs of producing the service. In other words, some services are simply more difficult to contract out due to the costs associated with contract negotiation, bargaining, and enforcement – regardless of how expensive or inexpensive the service is to produce. For example, in a study of local contracting, Brown and Potoski (2003) found that services with attributes resulting in more difficult and costly contracting were more likely to remain inside public hierarchies and not contracted out. What makes this line of inquiry
somewhat unique in public administration is that it combines more conventional contracting research with important theoretical tools developed in economics.

Regrettably, the aforementioned studies fail to adequately outline the role for public managers in contracting decisions or to reconcile economic theory with public administration. As Frant (1996) notes, “we cannot make full use of [economic] ideas by trying to squeeze the public sector into a framework designed for the private sector. Rather we must extend the framework by applying the logic of [economic] analysis to the very different institutions of the public sector” (p. 365). Ironically, new tools from economics make it easier to address both of the aforementioned gaps in the literature.

Scholars throughout the social sciences have been drawn to economics because of its rationality assumptions, relatively simple logic, and parsimonious models (see Granovetter and Swedberg 1992). In public administration, economics has particular appeal when studying contracting decisions since parallel analyses are plentiful in the economics and business journals. Specifically, “make-or-buy” decisions represent an accepted and recognized research topic in both the theoretical and empirical literatures (Williamson 1975, 1979, 1985; Gibbons 2005; Richman and Macher 2006). To economists (and business scholars), a firm “makes” a good or service when it decides to produce it inside the hierarchy of the firm. When a firm allows another entity from the market to make a good or service for them, it is said to be “buying” that good or service. Given the obvious repercussions on the structure of the firm itself, these make-or-buy decisions comprise the foundation for other important inquiries in economics such as: why do firms exist in the first place (Coase 1937); and, what is the impact of contracting on firm boundaries (Williamson 1996)? Thus, moving make-or-buy decisions to the forefront of analysis has allowed economists to recast traditional economic decisions in organizational terms.
Accordingly, organizational economics – a small but growing branch of organization theory – has emerged in recent years with the goal of helping scholars and practitioners understand the organizational consequences of make-or-buy decisions (see Hesterly, Jones, and Zenger 1990). To some economists, the decision to contract out – or outsource as it is more commonly known in the economics and business literatures – is strategic in nature. Managers hope to improve a firm’s efficiency – and ultimately its profits – by outsourcing functions with particular attributes that are well suited for market provision, while keeping other services that are ill-suited for the market inside the hierarchy. But even when managers choose to outsource a given function, they also have the ability to structure the relationship in a way that mimics hierarchy by choosing between different contract types or increasing the length of the contract. Thus, organizational economics examines a broad swath of contracting decisions made by managers. But unlike managers in private firms, public managers possess a different set of values and adhere to a broader set of goals which includes, but is not limited to, economic efficiency (Box, et. al 2001). Therefore, any attempt to make sense of public sector make-or-buy decisions needs to reflect the intricacies of public management, and not simply rely on private sector management models.

Numerous scholars have theorized about the multiple dimensions of public management as it pertains to contracting (see Rainey 2003). Cooper (2003), for example, contends that public managers operate on both vertical and horizontal models of contract management. The vertical model encompasses the authority based and political processes guiding contracting decisions, along with the mechanisms put in place to maintain public sector accountability. The horizontal model, on the other hand, illustrates how public managers increasingly engage in business-like transactions with outside organizations in an effort to economize on costs or take advantage of

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3 Organization economics covers a wide spectrum of research in addition to make-or-buy problems.
relative economies of scale. In recent years, reform advocates have argued for tipping the balance toward the horizontal aspects of public management in an effort to improve the performance of public organizations (Osborne and Gaebler 1992). Some in the public administration community view such reforms as an affront to important public sector values inherent to the vertical model and question the viability of economic analysis and its role in public administration research altogether (Terry 1998; Box et al. 2001). But just as it would be shortsighted to argue that governments make contracting decisions based solely on economic factors such as efficiency, it is equally shortsighted to suggest that public managers, working in jurisdictions facing fiscal stress and financial shortcomings, do not consider economic conditions at all. In fact, there is anecdotal evidence to suggest that public managers and politicians often put economic factors at forefront.

Consider, for example, Stephen Goldsmith’s “yellow pages test.” As mayor of Indianapolis in the late 1980’s and early 1990’s, Goldsmith was – and still is – a champion of contracting out. As mayor, he argued that public managers should distinguish “core” governmental services – which he limits primarily to public safety functions – from non-core services. For all non-core services, Goldsmith suggests that managers conduct a scan of the yellow pages to determine if there is an ample supply of potential service providers. If there are at least two or more providers, then the city should consider contracting out that service. In other words, Goldsmith implies that most services could be, and perhaps should be, contracted out if the rudiments of competition are present in the market. Goldsmith’s test is simplistic and provides little guidance as to what constitutes a core local service; but it does illuminate how economic factors are, rightly or wrongly, integrated into the decision making processes of public

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4 Increased contracting out with nongovernmental organizations is an important plank in the reinventing government and new public management reform movements (see Kettl 2002).
managers. I highlight Goldsmith’s test to illustrate how at least some public managers and politicians approach make-or-buy decisions, not because I believe it is a proper heuristic devise for public managers to follow. Indeed, I believe there is still considerable confusion surrounding these decisions.

My goal in this dissertation is to help clarify why some services tend to gravitate toward hierarchy, while others are more likely to be provided by outside contractors. My main research question focuses on these contracting decisions. Specifically, what factors influence public sector make-or-buy decisions? However, there are really three stages to make-or-buy decisions, and thus three corresponding research questions. First, why do governments choose to contract out certain services and not others? Second, what factors influence to whom the contract is awarded? By “whom,” I am referring to the sector choice, not the choice between individual contractors. And third, what factors influence the type of contract chosen? The choice between a cost-plus contract and a fixed price contract, for example, can have a significant influence on the relationship between the government and the contractor. Together these stages constitute the full range of make-or-buy decisions in the public sector. In addition to answering each of these questions, I believe it is also important to address the performance consequences of service delivery decisions. While the vast majority of this dissertation will not address performance directly, there is reason to believe that when service delivery decisions match the theoretical predictions, performance will improve (see Richman and Macher 2006). If theory predicts that garbage collection will most likely be contracted out, then there may be negative performance consequences associated with providing garbage collection directly by public employees.

To answer each of the research questions, I build theoretical arguments using insights drawn from the public administration, economics, and the business literatures. These theoretical
arguments take into consideration the history of contracting for services in the U.S. and the active role of public managers in the decision-making process. From these theoretical arguments, I develop propositions and test them in turn using a variety of quantitative estimation techniques. I use two data sources for my quantitative analyses. First, I use local data drawn from the International City/County Management Association’s (ICMA) survey on alternative service delivery methods to examine the first and second steps of the make-or-buy decision. Second, I use data from the U.S. Environmental Protection Agency (EPA) to examine the third step of the make-or-buy decision – contract design decisions. Lastly, I review a large body of empirical research to ascertain whether services which are in alignment with the theory predictions developed in this dissertation will exhibit improved performance.

The dissertation is organized in the following manner. In chapter two, I review the historical context for why contracting decisions have become such an important part of contemporary public administration. I explain how the rise of the “contracting state” is a result of both pragmatic and ideological impulses; each impacting decision makers and subsequently the scope and scale of contracting overall. In chapter three, I develop theoretical arguments explaining public sector make-or-buy decisions using new theoretical tools developed in organizational economics and expanded upon by business scholars. I end chapter three by developing a set of testable propositions. In chapter four, I provide empirical tests for the first two research questions. Specifically, I use the ICMA data to ascertain which factors impact whether governments choose to contract out certain services and not others; and to determine which factors influence to whom the contract is awarded. In chapter five, I use the EPA contract data to examine which factors influence the type of contract a government chooses to use in certain situations. In chapter six, I review empirical studies from the public administration and
economics literatures to assess the relative performance of contracting out two very different services – education and garbage collection – to see if there is a connection between the service delivery predictions developed in chapter three and performance. Finally, in chapter seven, I summarize the main findings of the dissertation, postulate about future research directions, and describe the limitations of this study.
CHAPTER 2
THE CONTRACTING STATE

The primary purpose of chapter one was to describe the central rationales for studying contracting decisions and to highlight the research questions addressed in this dissertation. In this chapter, I take a step back and provide some of the background information and historical context leading to governments’ increased reliance on contracting. In particular, I detail two of the primary influences weighing on decisions makers – the historical need to make pragmatic service delivery decisions in response to changing circumstances, and external pressures to cut costs and improve the quality of public services. While pragmatic influences – such as increased reliance on contracting during wartime – have often led to more contracting out, many performance related pressures are attributable to the rising influence of government reform movements on public officials. Together, these factors have led to contracting for services on an unprecedented scale in the U.S. For that reason, I refer to the current system of governance in the U.S. as the contracting state.\(^5\)

While it is true that governments around the world have embraced the “privatization” movement in recent decades, the U.S.’s history coupled with its relative lack of state-owned enterprises, render it somewhat unique when compared to other nations. In the first section of this chapter, I briefly review the rise of privatization throughout the world and discuss how different forms of privatization have been more prominent in different countries. By doing so, I am able to highlight some of the primary differences between “privatization” movements in the

\(^5\) I use the phrase “contracting state” to help describe the increased use of contracting in contemporary American governance. While I am sure it has been used differently in other contexts, I feel that the “contracting state” best evokes the sentiments and ideas discussed in this chapter as well as the dissertation as a whole.
U.S. compared to those in other industrialized democracies. The point of these comparisons is to illustrate how the U.S has followed a fundamentally different path to its current system of governance. In the second section, I document how historical factors have had a tremendous influence on the direction of this path over time. In the third section, I discuss some of the more ideologically motivated influences – often apparent in government reform movements – which have impacted the shape and structure of the current contracting state. I end the chapter with a brief summary that aims to link the two paths in a meaningful way and provide the foundation for the theoretical arguments developed in chapter three.

**The Rise of the Contracting State**

In recent years, privatization of public assets has been a significant development in governments all over the world (Kettl 2002). In Eastern Europe, for example, newly emerging states actively privatized many of their state-owned assets after the collapse of the Soviet state. But even prior to the Soviet collapse, many Western European nations began to actively hive off some public assets to the private sector while maintaining state ownership of others. For instance, British state-owned enterprises such as British Airways, Jaguar, British Steel, and others were sold off by the Thatcher Government during the 1980’s (Donahue 1989). In each of these examples, the government is actually transferring the ownership of assets to the private sector – the definition of privatization. An obvious prerequisite of privatization is having public assets to sell.

In terms of public ownership, the U.S. stands at the far end of the spectrum since it owns relatively few assets. As Donahue (1989) points out: “most of the activities that tend to work badly in the public sector, as both industrialized and third-world countries learned to their sorrow in the post-war decades, America had kept private in the first place” (p. 7). Therefore, the word
privatization is somewhat misplaced in the American lexicon. Contracting out is a more appropriate form of privatizing in the American system, since the government maintains the ultimate responsibility for providing the service via a contractual relationships with outside service providers. Unlike privatization, contracting results in a separation between asset ownership and provision of the service (Jensen and Stonecash 2005).

Similar to the privatization movements in Europe, contracting for services has become a relatively accepted tool of governance in the U.S (Auger 1999; Kelman 2002; Salamon 2002). Indeed, American governments (federal, state, and local) spend over half a trillion dollars on contracted goods and services with outside providers (Harkness 1998). Not only has the scale of contracted services grown to unprecedented levels, but as Jensen and Stonecash (2005) point out, “[contracting] has moved from straightforward tasks such as cleaning and garbage collection to more complex tasks such as providing support services to soldiers in the field” (p. 767). Nevertheless, it would be inaccurate to suggest that contracting out is a recent phenomenon. In fact, early leaders in the U.S. often had no other choice but to rely on private contractors to meet new needs and respond to unpredictable challenges, both at home and abroad. Generally, governments tended to rely on the private sector for certain functions more than others, whereas public sector bureaucracies emerged to govern functions typically remaining under direct public purview. As a result, the contacting state in the U.S. has evolved over time.

As the preceding paragraph indicates, government bureaucracy in the United States developed gradually. Indeed, the first federal government was composed of only five core departments (Stillman 2004). From these humble beginnings, the federal government now consists of hundreds of departments and agencies staffed by 2.7 million non-military employees. What is more, the size of the federal government has remained relatively steady for several

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decades. But the true scope of government activity stretches far beyond the actual boundaries of
government agencies to include thousands of private sector organizations funded by the public
sector (Light 1999). Entire industries, as well as whole segments of the nonprofit sector, are
reliant solely on government contracts for their existence (Rosenthal 2000). This mixture of
organizations and blurring of the sectors exemplifies the modern state of governance in the U.S.
Since the private sector plays such an important role, especially when compared to the other
industrialized democracies, there has been a constant struggle to identify and define which
activities should be reserved for public organizations and which activities should be
competitively contracted to the private sector. In fact, for the past 40 years policy makers and
politicians have worked to identify activities which are “inherently governmental.” The Office of
Management and Budget’s A-76 circular was written for this very purpose, and has been re-
circulated numerous times since by different presidential administrations – most recently in 2003
by the Bush Administration.

Unfortunately nebulous descriptors like “inherently governmental” are entirely too
subjective and can too easily be hijacked for political purposes to be of any real value in
understanding contracting decisions. A better approach may be to uncover the attributes of
services that are typically provided by public organizations and compare them to the attributes of
services that are typically contracted out to the private sector. A first step in this process is to
review the history of contracting decisions. By doing so, I am able to show how government in
the U.S. responded to changes in service delivery and thereby developed certain capabilities
which are linked to certain types of services. In the next section, I explore the historical
developments and pragmatic reasons leading to the increased use of contracting for goods and
services, while at the same time I illustrate how the scale and scope of government activity
overall increased dramatically over time. In addition, I review some of the important historical limitations and innovations in government contracting that have impacted the modern contracting state.

**The Pragmatic Path to the Contracting State**

Contracting for services has been integral to American governance since the Revolutionary war. Facing the world’s greatest superpower of the time, the fledgling Continental Congress had little or no means at its disposal to adequately support the war effort directly. Instead, the Congress often looked to private contractors to provide many of the necessary goods and services. The Continental Army, in particular, was reliant on private contractors for food and other provisions throughout the war (Nagle 1999). But even after the war had been won and America had gained its independence, the newly formed government was hardly in a position to provide many essential services for its citizens. For instance, one of the most important services connecting the country, the U.S. postal system, was composed almost entirely of contracted delivery agents from the private sector (Carpenter 2001). This system was complicated by the fact that the government had no laws in place to govern how contracts were to be awarded or managed, thus the system quickly descended into controversy. In particular, the government had difficulty maintaining reasonable prices as well as promoting reliable quality. As the first Postmaster Samuel Osgood asserted:

> The advertising for proposals for carrying the mail places the Postmaster General in a disagreeable predicament: for many people make proposals at so low a rate that is obvious the business cannot be done as it ought to be, and consequently there cannot be a strict adherence to the lowest proposals. Discretion must be used, and the contract must be given to him who will most probably perform the duty with punctuality (White 1956: p. 183).

This passage exemplifies the difficulties faced by early public officials when entering into contractual agreements with nongovernmental providers; and perhaps more importantly, that
price alone is not a sufficient mechanism for determining a good contract. In this case, the government lacked the ability to spot a “lemon” among potential bidders or to adequately make certain that the contractor followed the stipulations set forth in the contract once it was awarded. Due to these early difficulties, the federal government began to institute no-bid contracts with reliable contractors so that the government could insure adequate and reliable service quality. An unfortunate consequence of no-bid contracts was that the government often had to accept inflated prices for quality assurances – a burden left for the taxpayers to shoulder.

In addition to relying on no-bid contracts, early attempts at contracting were complicated by the fact that federal contracting had not been reconciled with the laws of the land. Nowhere in the Constitution was it stipulated that the government could enter into contractual agreements. Indeed, it was not until 1831 that the Supreme Court ruled in \textit{U.S. v. Tingey, 30 U.S. 115} that the executive, due to its sovereignty, had the legal right to enter into contracts. But the ruling also stipulated that funds withdrawn from the treasury for such activities must be appropriated by Congress (Section 9, Article I). In a similar ruling, the Court specified that contracts were to be read in favor of the government and that the government could not contract out basic governmental functions [see \textit{Charles Bridge v. Warren Bridge, 36 U.S. 420 (1837)}]. Delineating “basic functions” from periphery was not straightforward, however, and has been debated ever since (see Shane and Nixon 2007). With no clear lines delineating which services were appropriate to contract out, the individual decision-maker took on a central role in the process. Decision-makers often became more reliant on contracting when facing extraordinary circumstance or large-scale shifts in public demands.

Military procurement has played a particularly noteworthy role in determining the scale and scope of contracting in the United States. At no time in early American history was this point
more dramatically illustrated than during the Civil War. The North, in particular, turned to private contractors to provide many of its necessary goods and services. Contracts to support the war effort were so numerous and lucrative that “would-be war profiteers converged on Washington for the feeding frenzy” (Cooper 2003: p. 30). The job of awarding the contracts was an arduous undertaking for federal employees. The task induced government offices to alter their standard hours of operation to ensure completion of their ordinary work over and above awarding and managing contracts. To make matters worse, the goods procured during war were often of inferior quality. In response to quality problems and the copious accounts of corruption surrounding government contracts, President Lincoln is said to have exclaimed that the contractors “ought to have their devilish heads shot off” (Nagle 1999: p. 192). The well-documented procurement failures during the Civil War led to three important control measures in federal contracting: (1) procurements were to be open and advertised, (2) purchase, accounting, and financial disbursement functions were to be separated to ensure accountability, and (3) conflict of interest between government officials and potential contractors was outlawed and monitored (Cooper 2003). These control mechanisms are considered standard operating procedures in contemporary public sector contracting.

During World War I, the U.S. government began to experiment with two important contract innovations – cost-plus contracts and negotiated contracts. Its use of cost-plus contracts was a direct result of the rapid technological advances made by both sides during the conflict. In order to keep pace, the U.S. expanded the nature of goods and services contracted to include advanced weaponry and other technologically sophisticated goods. Consequently, government contractors were forced to enter into increasingly uncertain contractual relationships due to

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7 In fact, the term “shoddy” refers to a type of material passed off as cloth by government contractors during the Civil War. The material was composed of cloth scraps, threads, and other pieces of material pressed together to resemble cloth. Not surprisingly, shoddy material often fell apart in short order (Cooper 2003).
technological complexity surrounding the goods and services that they were promising. Prior to
the war, the conventional contract design had been the fixed price contract. In these contracts, the
contractor assumes a substantial amount of risk; especially when the nature of the good or
service may require large-scale capital investments. In cost-plus contracts, on the other hand, the
contractor receives a fixed fee along with reimbursements for capital expenditures. By permitting
the contractor to be repaid for its capital expenditures, the government began to share the risk.
Suffice it to say that by the government assuming risk along with the contractor, the very nature
of contracting relationships in the public sector changed. The second important innovation
during the wartime era was the increased use of negotiated contracts. Due to time pressures
associated with war, governments would often suspend the bidding process in favor of
identifying one or more contractors and negotiate an acceptable agreement (vom Bauer 1970).
This development, along with the increased use of cost-plus contracting, paved the way for what
we see today in large federal procurements -- especially in defense procurement, where the
federal government is virtually the only buyer of technologically sophisticated and extremely
expensive weaponry systems.

In the years following World War I, three major events shaped the U.S. government as a
whole, and subsequently the development of the contracting state: the Great Depression, World
War II, and the Great Society Programs of the 1960’s. Each not only expanded the scope and
size of the government, but also altered how, when, and where contracting was used as a
governance mechanism.

At the dawn of the 20th century, Progressive era reformers were successful in awakening
the American public to the plight of the poor and other social issues. But it was not until
Roosevelt’s New Deal that the federal government actively engaged in the provision of social
services (Kahn 1998). The first seeds of an American welfare state were planted during this time and continued largely unabated until the Reagan administration five decades later. Roosevelt actively used contracts to stimulate sagging industry as well as to initiate public works programs aimed at putting unemployed citizens back to work. The federal government was now contracting for both economic and social purposes, a pattern which led to new public-private relationships between governmental and nonprofit organizations committed to social welfare. Subsequent legislation, such as the Social Security Act, institutionalized and provided financial standing for these relationships (Rosenthal 2000). But beyond increasing its reliance on contractors, the federal government had to expand into areas previously outside of its purview (Stillman 2004). In doing so, the overall size of the government increased dramatically to maintain sufficient capacity to administer the increased range of services provided.

As with previous armed conflicts in American history, World War II served as yet another catalyst for more government contracting. The sheer magnitude of wartime contracts, coupled with historical problems associated with wartime procurement, led the War Department to institute a Board of Contract Appeals to ensure due process in contracting (vom Bauer 1970). In addition, the Truman Committee, led by then-Senator Harry Truman, was charged with increasing access to federal contracts for small businesses. Up to that point, federal contracts had been dominated by large corporations (Cooper 2003). But perhaps the most important development of the early post-war years was the shift in contracts from procurement of goods to solicitation of services. The post-war prosperity led to large-scale migrations from inner cities to newly developed suburbs, a shift which required vast expansions in public infrastructure. The financial wherewithal for states and local governments to provide labor-intensive services such

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8 My focus throughout this dissertation is the contracting for services.
as road construction and education often came from federal grants. Fiscal federalism, therefore, rendered states and local governments more prominent players in the contracting state.

Finally, the Great Society programs of the Johnson Administration expanded the welfare state and consequently the federal government’s commitment to social service programs. Faced with unprecedented civil unrest and increasing demands for social change, President Johnson expanded the scope of the federal government to include arbiter of social change. As with the New Deal, Great Society partnerships between the federal government and nonprofits were integral to maintaining stable social services (Stillman 2004). Beyond the social agenda and the expansion of the welfare state, the federal government was also expanding into technologically sophisticated and costly arenas such as space exploration. As with wartime contracts, the space program initiated unique contractual relationships between the federal government and a limited set of firms capable of providing such highly technical and complex goods and services. As such, many contracts were written and developed in a way to build long-term relationships instead of short term market-like exchanges. By doing so, the government added stability and some protection to the fledgling high-tech industry.

The purpose of this section is not to provide a comprehensive history of government contracting in the U.S. Instead, I have highlighted several significant episodes that have led to increases in contracting, contracting innovations, or both. An important theme inherent to service delivery in the U.S. is that historically, government agencies often lacked the capacity to meet service delivery demands through direct service provision. To compensate for its limited capacity, government consistently turned to private contractors to fill the gap; especially in transitional times or in periods of national crisis. Armed conflicts, increased demand for social services, and the expanding role of state and local governments all increased the scale and scope
of contracting for goods and services. The primary consequence of this historical pattern has been that certain public sector capabilities have evolved over time, while other capabilities have been left to the nonprofit and for-profit sectors.

In addition to using contracting as a pragmatic response to its limited service delivery capacity, governments in the U.S. developed different ways to contract with outside organizations, which in turn impacted the evolution of government-contractor relationships. Cost plus contracting, for instance, allowed governments and contractors to share risk more equally in situations where it was difficult to foresee costly contingencies. Once again, implementation of these new contractual mechanisms amounted to a set of pragmatic responses to changing circumstances.

In recent decades, however, a perception that direct public service delivery is inherently inferior to private sector provision has gained traction with practitioners and academics alike (see Osborne and Gaebler 1992). The impetus for these perceptions is often tied to ideologically driven government reform movements, which have been particularly prominent since at least the 1980’s (Kettl 2002). In the next section, I review how these ideas have triggered support for more contracting, in general, as a response to the popular idea that government programs are increasingly “oversized” and “inefficient.”

The Ideological Path to the Contracting State

The preceding section documents how government in the U.S. has relied on contracting for goods and services in response to changing demands and circumstances. A different, although not mutually exclusive, explanation for the rise of the contracting state is rooted in the
ideologically driven reform movements of recent decades.\textsuperscript{9} Throughout American history, the notion of limited government has been appealing to many citizens. But since the 1980’s, one could argue that ideologically based reform movements have played a significant role in altering how governments view and ultimately go about service delivery. In this section, I examine some of the major reform movements of the past three decades and briefly discuss the theoretical rationales underpinning them.\textsuperscript{10}

Compared to those in other Western democracies, American citizens have historically placed little trust in government and have exhibited the highest levels of anti-government rhetoric (Pollitt and Bouckaert 2000). These attitudes have been more notable in recent years. For example, in 1936 only 36 percent of Americans believed that government officials did not care what people think; by 1966 that proportion of adult Americans had climbed to 66 percent (Orren 1997). Yet this perception is often grounded in erroneous notions. As Bok (1997) notes, the majority of Americans believe that administrative costs eat up over half of the social security program, when the actual amount is less than 2 percent. Even more interesting, while many Americans have an anti-government bias in general, they often give government programs high marks relative to comparable private sector organizations ( Goodsell 2004; Rainey 2003). Despite the apparent inconsistencies in public opinion, the pervasive appeal of the private sector continues. Instilling a more “businesslike” culture into government organizations is a common and important theme among many Americans. Hoping to tap into these sentiments, it is not surprising that every president since Jimmy Carter has championed government reform in one way or another as an important plank in their election strategy.

\textsuperscript{9} I use the term ideology to convey a broad idea, not a narrowly construed belief that is tied to specific differences between political parties. I mean the notion as a broadly rooted idea that has risen to the surface at different times throughout American history in the form of administrative reform movements.

\textsuperscript{10} There have been reform movements throughout American history, but those specifically advocating more contracting for services have occurred primarily in the last three decades.
Ronald Reagan, in particular, embraced contracting out services to the private sector. As Savoie (1994) asserts, “Although not nearly as successful as he would have liked, Reagan promoted privatization, contracting out, and user fees at every opportunity” (p. 215). The Presidential-appointed Grace Commission of 1982-1984 exemplified his zeal. The Commission brought together thousands of business people from the private sector to identify bureaucratic waste in public agencies (Pollitt and Bouckaert 2000). The mood of the commission is easily extrapolated from the language found its documents. For example, in the opening paragraph of the 1984 Commission Report, the chairman of the commission, Peter Grace, reemphasizes the mission in this succinct yet ideologically loaded statement directed at President Reagan, “You asked the American people to help you get the Government ‘off their backs’” (Grace 1984: p. 1). The unmistakable message was that government is the problem, not the answer. This theme was reiterated frequently by Reagan and members of his administration.

The fact that Bill Clinton, a Democrat, embraced a smaller, more efficient federal government exemplifies the uniqueness of politics in the U.S. The two parties in the American system are more “broad churches” of ideology when compared to European counterparts (Pollitt and Bouckaert 2000). In other words, the policy differences between Republicans and Democrats are often small and nearly imperceptible when compared to the political parties in other systems, particularly parliamentary systems. When compared to Republicans, Democrats are, however, more likely to support a larger and more active role for the federal government. But this does not mean that Democrats, in general, disavow the pervasive belief in limited government altogether. On the contrary, one could argue that over the past three decades limited government has had bipartisan appeal. Therefore, it is not surprising that one of the most comprehensive reform
movements in American history, the National Performance Review (hereafter NPR), was initiated by a Democrat.

The NPR was grounded in a broad, global movement known as new public management (NPM). As Kettl (2002) suggests, NPM marked a departure from public administration in that:

- It focused on management rather than social values; on efficiency rather than equity; on mid-level managers instead of elites; on generic approaches rather than tactics tailored to specifically public issues; on organizations rather than processes and institutions; and on management rather than political science or sociology (p.93).

Despite these generally concrete goals, NPM has often been characterized by a “babble of slogans and panaceas: ‘steering not rowing,’ ‘results not process,’ … ‘collaboration, not conflict’” (Bertelli and Lynn 2006: p. 156). Even though such platitudes are vague and misleading, NPM advocates have been clear in asserting that government would improve if more public services were contracted out to the private sector—through which performance would be stipulated ex ante. The presumption is that if good performance were to be agreed upon in advance, it would be easier to maintain proper accountability and overall effectiveness.

Not surprisingly, the overarching goal of the NPR was “a government that works better and costs less” (Gore 1994). The reforms associated with the NPR sought to free managers from burdensome red tape and regulation so that they could presumably make better decisions—“let managers manage” became the mantra of the day. Unlike the Reagan Administration’s Grace Commission, which attacked government bureaucracy directly, the Clinton administration, under the leadership of Vice President Al Gore, attacked the intractability of the system. The premise was that the system impeded the abilities of government workers to do their work with efficiency and effectiveness. Gore’s approach—as he states clearly in a speech from 1996—was to free

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11 Many aspects of the NPR differed from some NPM themes due to the U.S.’s decentralized system, institutional structure, and lack of state-owned enterprises. However, the general idea of improving efficiency by infusing public agencies with market discipline and business principles was in harmony with the broader NPM themes (Moon and deLeon 2001).
“good people trapped in a bad system.” Like NPM, the NPR covered a wide variety of reforms (see Kettl 1996 for review), but one of its key objectives was to reduce the size of government, often through contracting out. Indeed, the Clinton Administration was successful in reducing the size of the federal government by approximately 300,000 employees. But as Paul Light (1999) has noted, a “shadow workforce” consisting of contractors and state/local employees has expanded rapidly to replace the federal employees cut from the payrolls. According to Light, it is a mistake to conclude that the overall size of government has diminished (at least at the federal level) due to the NPR reforms.

Much of the logic underpinning modern reform movements has been influenced at least indirectly by public choice economics. Early public choice scholars such as Tullock (1965), Downs (1967), and Niskanen (1971) argued that public managers, like their private sector counterparts, are rational, self-interested bureaucrats operating in what amount to public sector monopolies shielded from competition. In the private sector, managers motivated by profits are induced to control costs since revenues are directly related to expenditures – a situation that does not typically hold in the public sector. So instead of maximizing profits, public managers protect their agency’s budget from legislative overseers; possibly distorting information and behaving rigidly in the process. Those adopting the public choice perspective view contracting for services as a way to improve the performance of public organizations by infusing them with market-like characteristics, such as competition. Presumably, public sector contracting introduces the profit motive and shifts the government’s role from that of direct service provider to that of “watchdog” – a position viewed by many as more suited to the mission of the public sector
As one of the aforementioned platitudes suggests, contracting out puts the government in a position to “steer” and not “row.”

One consequence of widespread reform initiatives is that public managers are more likely to look for opportunities to improve the performance of public services and programs. In the domain of public sector values, efficiency takes on greater importance as is evident in the NPR’s slogan, “a government that works better and costs less.” The pressure to save money, while at the same time improve quality, puts public managers in the delicate position of having to operate more like business managers. Unlike business managers, however, public managers also face an increasingly complex and multidimensional public sector which is characterized by blurred sectoral boundaries and intense political oversight. It is not surprising that contracting initiatives attempting to improve efficiency often fail and have to be brought back under direct governmental provision (see Hefetz and Warner 2004). Despite the potential pitfalls and failed contracting initiatives, it is reasonable to assume that public managers will continue to explore the potential cost savings attributed to contracting out. It is also likely that additional government reform movements will emerge in the years to come; and that increased reliance on contracting for services will be an important tenet of such movements.

Summary

The purpose of this chapter has been to provide the historical context that propelled American governance toward the contemporary contracting state and to highlight two important factors leading to its development. The first factor, pragmatic decision making, resulted from governments’ inability to meet many citizen demands for goods and services directly. Periods of great tumult, like armed conflicts and changes in the social consciousness, had a considerable impact service delivery decisions. The consequence of these historical episodes was to expand

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12 See also Kettl’s (1993) description of the “competition prescription.”
public service delivery either through direct provision by public organizations or indirect provision via contracts with the private sector. As a result, public managers had to make pragmatic decisions about which services to keep inside public organizations and which services to contract out to the private sector. One significant consequence of pragmatic decision-making is that governments developed certain capabilities and institutional knowledge over time.

While seemingly quite different, the second factor leading to the contracting state – ideologically driven reform movements – is not mutually exclusive from the first factor. As the government in the U.S. expanded into different service delivery areas, such as the social services, it not only increased its reliance on contracting out, it increased its overall size and sphere of influence. Consequently, the magnitude of government expansion in the early- to mid-twentieth century acted as the catalyst for an old idea, limited government, to re-emerge in the American consciousness in the late 1970’s and early 1980’s in the form of government reform movements. Due to these reform movements, public managers have been increasingly charged with finding new ways to improve the efficiency and effectiveness of government services and programs.

These two factors, taken together, play an important role in understanding public sector make-or-buy decisions. In the theoretical arguments developed in the next chapter, I argue that public managers balance the perceived importance of public sector capabilities with the need to improve efficiency. In other words, managers recognize the need to protect the government’s most essential services. As such, managers will be less likely to contract out services with specific capabilities which have developed inside government over time. For those services lacking these capabilities, public managers have experimented with contracting them to the private sector. Since the nature of the goods and services contracted are very different, public managers have also experimented with different types of contracts and relationships. In chapter
three, I expand on these ideas and attempt to explain how these pragmatic and ideological forces, when viewed through theoretical lenses developed in economics and business, can add clarity to public sector make-or-buy decisions.
CHAPTER 3
THE MAKE-OR-BUY DECISION

As chapter two illustrates, the contracting state in the U.S. developed over time as a result of pragmatic and ideological decision-making by public managers and political leaders. In this chapter, I examine how these historical forces – when examined through theoretical lenses developed in the social sciences – add clarity and predictability to understanding make-or-buy decisions. I argue that public managers pay particular attention to service- and market-level attributes when deciding whether to contract out a service or not. For instance, some services have particular characteristics which make contracting inherently difficult, while other services exhibit characteristics more suited for provision by outside organizations. Moreover, some markets are not sufficiently developed and lack an adequate supply of contractors, a situation which makes contracting more complicated and potentially more problematic. To help make sense of why these different attributes can be expected to lead to more or less contracting, I utilize a set of tools from organizational economics which focus on how organizational boundaries are determined. Since the boundaries of public organizations are determined by service-delivery decisions (at least in part), these tools help highlight the specific attributes affecting make-or-buy decisions. Accordingly, the purpose of this chapter is to build theoretical arguments for understanding make-or-buy decisions and to develop a set of propositions to be tested in the subsequent empirical chapters.

In the next section, I provide an overview of “boundaries research” in organizational economics. In particular, I focus on two broad approaches within this more general research
domain – one based on aligning incentives, the other based on building capabilities. The incentives approach centers on how boundary decisions are made to more effectively match service-level attributes with the distinctive characteristics of a given governance structure (market, hierarchy, long-term contracting, etc.) in an effort to improve performance. Contrarily, the capabilities approach focuses on how managers protect important organizational capabilities which have accrued over time and would be lost if the service were contracted out to a nonpublic organization. From these theoretical discussions, I highlight the important variables described in the literature and develop testable propositions. In the chapter’s final section, I argue that these two theoretical points of view can be combined in a meaningful way to shed light on public sector make-or-buy decisions.

**Overview of Boundaries Research**

In the public sector, make-or-buy decisions are equivalent to contracting decisions; and contracting decisions effectively determine the boundaries of the organization. So to understand the factors affecting make-or-buy decisions, it is important to understand contracting theory. Contracting as a field of study has gained considerable traction in the social sciences. Different theoretical perspectives from economics and sociology, for example, have led to a rich set of empirical findings and predictions. Since the boundaries between an organization and its environment are organizational concepts, boundary research can be thought in terms of organization theory.

In recent years, economists have taken a more substantive interest in organization theory, a development which is evident by the fact that organizational economics is a small but growing subset within the field (see Hesterly, Liebeskind, and Zenger 1990). Organizational economists view the boundaries of an organization as more fluid and less pronounced than organization
theorists trained in sociology or psychology. Indeed, they tend to view boundaries as either non-existent (Jensen and Meckling 1976) or determined by a locus of transactions (Williamson 1975, 1985, 1991). In either case, contractual relationships – both formal and informal – move to the forefront of the analysis because they define the “boundaries” of the firm or a “nexus of contracts.”

By viewing organizational boundaries as fluid entities, organizational economists tend to extend their analyses to encompass a full range of governance structures an approach that allows them to consider the relative advantages of one governance structure over another.

Contrarily, public administration scholars are more likely to view boundaries from the inside of a public organization looking out. Despite the possible advantages of the broad perspective taken by organizational economists, these lines of inquiry tend to downplay the role of management and strategy which I consider integral to understanding public sector make-or-buy decisions (Foss 1998). One way around this problem is to supplement economic theory with research contributions from the business literature.

The business literature on boundary decisions is helpful for three primary reasons. First, as in public administration, the research literature on business borrows heavily from the social science disciplines. Economics plays a particularly important role in business research and business scholars are particularly adept at distilling economic theory into more practical and useful applications. Second, the make-or-buy decision is a principal research topic in the business literature and has led to a considerable amount of theoretical and empirical research from which to draw. And thirdly, unlike economists, business scholars tend to put management and strategy at the forefront of their theoretical analyses. As these points illustrate, the approach to make-or-buy decisions found in the business literature can be a useful template in guiding

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13 Some economists argue that formal contracts are simply one part of the overall implicit or relational contract governing all relationships (see Goldberg 1980).
research on public sector make-or-buy decisions – as long as the research is modified to address
the unique characteristics of the public sector.

As noted in the introduction to this chapter, there are two approaches to boundaries
research in the business literature. The first – and arguably more prominent – approach views
formal and informal incentives as the most important factors shaping organizational boundaries.
Contrarily, theorists from the second tradition focus on the capabilities of the firm and how
hierarchy and managerial skill come to bear on protecting firm capabilities. Instead of aligning
incentives, the ability to retain and transfer knowledge via effective coordination is the most
important determinant of organizational boundaries.

Despite the seemingly contradictory propositions between the incentive- and capabilities-
based traditions, some suggest that the two are complementary (Langlois and Robertson 1995;
Santos and Eisenhardt 2005; Foss 2003). Indeed, in response to the challenge posed by the
capabilities scholars, Williamson (1999) – a founder of the incentives tradition – concedes that
the notion “What is the best generic mode to organize X” should be replaced with “How should
firm A – which has preexisting strengths and weaknesses – organize X.” In this dissertation, I
extend this proposition by suggesting that public organizations, in general, have preexisting
strengths and capabilities that have developed over time through pragmatic decision making
about which services should remain under direct government control. A public manager’s job is
to recognize and protect these capabilities when facing the impulse to improve efficiency by way
of contracting out more. Make-or-buy decisions in the public sector, therefore, depend on both
capabilities and incentive alignment. The core of my argument is to develop this logic, sketch its
implications, and test it against an actual set of make-or-buy decisions to see if it helps to explain
the choices made.

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In the following two sections, I provide an overview of the two main approaches to boundaries research – incentives and capabilities – and review the main theoretical variables derived from each. The overviews are meant to provide a reasonable foundation for my theoretical framework, not to be comprehensive. As such, my discussion is limited to broad sketches of the important ideas and prominent variables. In the chapters to follow, I will expand on the theoretical mechanisms in greater detail.

The Incentives Tradition

The original theories of the firm were developed to counter the prevailing notion in economics that a firm is essentially nothing more than a production function – a black box. The neoclassical view of the firm ignored the impact of organization on economic exchanges and instead centered analysis on the price mechanism and its subsequent impact on supply and demand. A group of scholars led by Ronald Coase and John Commons questioned the appropriateness of the neoclassical approach. Coase, in particular, sought to provide theoretical leverage for why firms exist in the first place – to economize on certain types of transactions. Prior to Coase, economists tended to focus primarily on the costs associated with production and ignore the time, money, and manpower required to govern the transaction itself. As Santos and Eisenhardt (2005) note, “for particular transaction attributes, the costs of governing activities through markets are different from the costs of governing these activities in organizations. [Coase’s] central argument is that boundaries should be set at the point that minimizes the cost of governing activities” (p. 492). An important albeit general precept of this line of inquiry is that the “incentives” inherent to a particular governing structure (hierarchy or market) will play an important role in determining the relative ease or difficulty of governing a particular transaction.
characterized by a distinct set of attributes. Before delving into a discussion of how incentives affect boundary decisions, it is important to provide a brief background of incentives.

Generally speaking, incentives are devices designed to induce action or motivate behavior. Barnard (1938) was one of the first to understand the power of incentives within organizations, and more importantly the limitations of material incentives. According to Barnard, “Even in purely commercial organizations, material incentives are so weak as to be almost negligible except when reinforced by other incentives” (1938: p. 144). He recognized that formal, explicit incentives do not frame the activities within an organization alone; rather, the informal organization is of equal or more importance. Barnard understood that the power of incentives is purposefully lower inside large organizations.

In economics, the study of incentives is integral to the discipline. As Laffont and Martimort (2002) suggest, “How to design institutions that provide good incentives for economic agents has become a central question of economics” (p. 1). Generally speaking, there are two types of incentives – generally termed high-powered and low-powered. High-powered incentives motivate an individual to a course of action because the individual believes that he or she will benefit directly from it. The benefit often takes the form of a monetary reward such as a stock option or a bonus. For example, a chief executive officer of a corporation may receive a stock bonus if he or she increases the current year’s profits by a pre-specified percentage over the previous year. High powered incentives like these are tied to measurable performance. Thus in markets – where performance is easily measured due to price and competition – high-powered incentives are often effective. As Frant (1996) asserts, “Someone who stands to benefit personally from every dollar of, say, cost savings has far more incentive to find such savings than does someone who stands merely to increase her chance of promotion” (p. 367).
Public sector organizations, on the other hand, are more often characterized by low-powered incentive structures (see Dixit 2002). In economic jargon a low-powered incentive means that the worker receives a small fraction of her marginal product. In other words, these incentives are not directly tied to meeting a specific performance target or following a specific course of action, but instead are tied to a broad set of actions taken over time – a body of work. The most prominent low-powered incentives discussed in the literature are career concerns and missions (Tirole 1994). Instead of being driven primarily by monetary incentives, civil servants are said to be driven by reputation, promotions, and future job prospects. Coase was one of the first to recognize the relationship between the power of incentives as it relates to individual transactions; and more importantly how different governance structures, like firms, exist for the primary purpose of alleviating incentive misalignment in a given transaction. As such, Coase’s ideas have been principally important to business scholars because they provide a basic rationale for the existence of firms.

Coase may have been the first to focus on the transaction as a unit of analysis, but it was Oliver Williamson (1975, 1985 & 1991) who provided the early theoretical development that legitimized transaction-cost economics (hereafter TCE) as a subfield in economics. By shifting the unit of analysis away from the price mechanism to that of the transaction, researchers on the firm recast its grounding in organizational terms. Viewed on a continuum, the firm is simply one mechanism (along with markets, hybrids, and the public bureau) for governing the economic exchange between parties. The most important insight stemming from TCE is that each governance structure is relatively efficient given the nature of the costs associated with the transaction. In other words, efficiency in the TCE framework is always assessed comparatively. Williamson (2002) refers to this as the discriminating alignment hypotheses: “transactions,
which differ in their attributes, are aligned with governance structures, which vary in their costs
and competencies, so as to effect a (mainly) transaction cost economizing result” (p. 12).
Consequently, the key to TCE is understanding which attributes will likely result in more costly
contracting and how different organizational and institutional structures (markets, private firms,
public organizations, etc.) are equipped to mitigate the potential contractual hazards associated
with the costs. Williamson’s framework, therefore, is fundamentally grounded in the notion of
governance – certain structures are more adept at governing certain transactions.

In TCE all contracts are viewed as actually and necessarily incomplete – it is not possible
for contracting parties to foresee all of the future contingencies and potential problems arising in
the relationship and account for them in a written contract. Even if the parties could plan for all
contingencies, communication between the parties is limited, thus rendering negotiation more
difficult and opening the door to potential opportunism – defined as "self-interest seeking with
guile" (Williamson, 1975: 26). Williamson is not suggesting that all actors act opportunistically,
only that some do and it is difficult to detect and monitor.

In addition to its obvious application in the private sector, Williamson has argued that
TCE is a useful theoretical framework for studying public organizations (1997 and 1999). In his
reasoning, the public bureau acts as a contractual safeguard for transactions requiring strong
bureaucratic and administrative attributes. Therefore compared to other “governance
mechanisms” (private hierarchies, markets, hybrids), public bureaus are no less efficient in and
of themselves; rather they are comparatively inefficient for certain transactions. As Williamson
suggests:

To denounce public agencies because they have lower-powered incentives, more rules
and regulations, and greater job security than are associated with counterpart private
bureau completely misses the point if those features have been deliberately crafted into
the public bureau, thereby mitigating contractual hazards, albeit at a cost (1999: p. 318).
Williamson’s argument here contrasts some of the more simplistic claims of public sector reformers. An important tenet of the NPM and similar reform movements is that public institutions lack the proper incentive structures for efficient service delivery (Kettl 1996). The assumption is predicated on the belief that moving services from a low-powered incentive environment (public organization) to one dominated by high powered incentives (private organization) will likely result in efficiency improvements.\textsuperscript{14} This argument fails to account for the fact that incentives operate differently in different institutional environments (Jensen and Stonecash 2005).

TCE has had a large and well documented impact on economics and the social sciences in general (Richman and Macher 2006). But the incentives tradition in boundary research stretches beyond transaction costs to include other theoretical paradigms, including agency theory. Unlike the TCE framework which focuses on ex post adjustment of firm boundaries to reduce the costs associated with governing a particular transaction, agency theorists focus on how contracts can be structured \textit{ex ante} to minimize potential opportunism resulting from an agent (the contractor) having important informational advantages over a principal (the public organization).

Unlike TCE, which operates under a bounded rationality assumption, agency theorists typically assume full rationality which allows them to develop elegant and parsimonious models. In addition, agency theorists are much less concerned with explicit contracts; indeed, in agency theory every relationship is contractual. Thus the question of \textit{when} to use a contract is largely irrelevant – the more important question is \textit{what form} of contract should be used. Different types of contracts are hypothesized to be superior in reducing opportunistic behavior for a given

\textsuperscript{14} Not all reformers follow this simplistic logic. See Pollitt and Bouckaert (2000) for a more elaborate treatment of the NPM reform movement.
situation. Take for example a contract used to govern a highly technical service requiring a large up-front capital investment from the contractor. Contracts such as these are difficult to monitor and often require considerable and costly renegotiation. By offering a cost-plus contract – where the government assumes risk alongside the contractor – as opposed to a standard fixed price contract, the government may be able to influence the contractor to reveal information about its true costs and thus the government averts potential opportunistic behavior resulting from information asymmetry.

Together, TCE and agency theory provide a foundation for understanding the potential costs facing organizations subsequent to specific governance decisions. Generally speaking, *governance costs* constitute those costs, in addition to production costs, needed to offset and protect against contracting hazards resulting from opportunism. In the next section I review service level and market attributes which have been hypothesized to increase governance costs.

**Governance Costs**

The incentives approach to boundary research has produced a large quantity of empirical research, a great deal of which centers on testing Williamson’s transaction costs framework – specifically, the proposition that positive transaction costs impact the boundaries of the firm. In general, Williamson argues that as transaction costs increase, transactions are more likely to remain inside a firm’s hierarchy to protect against potential opportunism. Williamson focuses on two primary attributes which may lead to increased transaction costs: asset specificity and uncertainty.15

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15 Contract frequency has received little attention in the empirical literature due to measurement difficulties, so I will limit the discussion to asset specificity and uncertainty.


Asset Specificity

The most frequently studied variable in the TCE literature is asset specificity. Asset specificity refers to the re-deployability of an asset currently supporting one type of transaction and transferring it to a different use. According to Williamson (1996), asset specificity can take no less than six different forms: site, physical asset, human asset, dedicated asset, brand name capital, and temporal. Given this broad set of definitions, there have been hundreds of articles examining the relationship between asset specificity and governance structure (Macher and Richman 2006), some of which have been quite unique. For example, Hamilton (1999) examined prenuptial agreements between spouses and found that joint ownership was preferable when the wife’s contribution to the “household enterprise” was particularly important.

The consensus in the empirical literature suggests that more asset specific investments are more likely to be vertically integrated into the hierarchy. The mechanism driving these empirical findings is best illustrated by the hold-up problem. Hold-ups arise when one party makes a specific investment which is not contractible and therefore puts the party’s initial investment at risk. A movement from the market to hierarchy adds safeguards and internal coordinating mechanisms to the exchange that are not possible or desirable in market settings (Levin 2003).

Other researchers have found that asset specificity has an impact on the length of contracts. In his seminal paper on coal contracts, Joskow (1987) found that the more specific the investment, the longer the duration of the contract (see also Allen and Lueck 1992; Purcell and Hudson 2004). Long-term bilateral relationships or contracts are similar to hierarchy and used by organizations to protect against opportunism resulting from asset specificity and other transaction costs (see Klein, Crawford and Alchian 1978).
Uncertainty also receives a great deal of attention in the TCE literature. But unlike asset specificity, the empirical evidence supporting the general proposition that uncertainty leads to more hierarchical governance is mixed, perhaps suggesting that uncertainty consists of multiple dimensions (Klein 1989; Harrigan 1986). Different studies relating uncertainty to supply, demand, and measurement have been addressed in the literature. The first two forms address uncertainty in the environment surrounding the transaction, whereas measurement refers to the uncertainty inherent to the transaction itself. For example, as it becomes more difficult to measure performance – or as measurement becomes more ambiguous – the uncertainty surrounding the transaction increases. To account for the different types of uncertainty, and to incorporate agency costs into my theoretical framework, I discuss two different types of uncertainty, volatility and ambiguity.

**Volatility**

Volatility refers to the unpredictability in the environment over time creating uncertainty about future contracting conditions. Since it is difficult to account for all future contingencies in a contract, ex post adjustments are likely in highly volatile environments (Walker and Weber 1987; Anderson 1985; Maltz 1994). Referring back to Goldsmith’s yellow pages test, it is easy to see the importance of supply volatility. An inadequate supply of viable contractors jeopardizes the potential gains derived from competition and increases the likelihood of opportunism from the contractor over time. Moreover, the long-term viability of the contractor may be uncertain which makes it difficult to plan for future production. Therefore, a stable and sufficient supply of providers reduces the uncertainty in subsequent contracts. Similarly, if the supply of contractors is limited, but the government has no expertise or production capacity to produce the service in-house, the government may opt to utilize a long-term contract.
Ambiguity

Unlike volatility which focuses on the environment surrounding the exchange, ambiguity is a result of the relative lack of information about the contractual exchange itself. Ambiguity makes it difficult to measure attributes of a particular service, rendering market exchange problematic due to the difficulties arising in monitoring performance (Alchian and Demsetz 1972; Barzel 1982; Heide and John 1990; Stump and Heide 1996). The more information the government has about performance and how to measure and evaluate it, the less uncertainty surrounding the transaction. Thus, ambiguity is essentially an agency cost. While performance measurability may be important in the decision-making calculus on whether to contract out a service, it may be even more important in determining with whom to contract.

As illustrated in chapter two, nonprofit organizations have historically provided many services – such as health and human services. Ambiguity is often the primary governance cost inherent to these types of services. However, the potential of opportunistic behavior on the part of nonprofits may be mitigated by their missions and goals which are often more compatible with public organizations than for-profit firms (Besley and Ghatak 2005). As a result, governments may feel more mission-alignment in contractual relationships with nonprofit organizations which may in turn affect the terms and structure of the contract.

Governances Costs in Public Sector Contracting

When governance costs are high, it is difficult to protect against opportunistic behavior. According to theory, increases in asset specificity, volatility, and ambiguity will likely lead to increased governance costs. Uncertainty about the future of a contractual relationship, for example, makes it difficult to write a contract which adequately protects the government against risky behavior on the part of the contractor. Perhaps even more problematic, if the service is
highly ambiguous and not easily measured, the government may have a difficult time knowing whether the contractor is behaving opportunistically at all. Consequently, the service may require a great deal of monitoring or frequent renegotiation to ensure adequate and cost effective service delivery. For a public manager seeking cost savings by contracting out a service to the private sector, these difficulties, along with the costs associated with protecting against them, may outweigh any potential “production” savings promised by the contractor. As such, governance costs are similar to friction in physical systems.

The important point is that some services – especially those characterized by substantial governance costs – are often more effectively governed inside hierarchies since the incentive structure is more suited for protecting against opportunism from the outset. Specifically, the administrative controls inherent to hierarchies make it easier to protect against self-interested behavior. Additionally, managers in hierarchies have more power due to the nature of the employee-employer relationship. In effect, the governance costs are established *ex ante* in the employee’s employment contract and governance takes place through managerial inducement and persuasion (Barnard 1938; Simon 1951; see Alchian and Demsetz 1972 for an alternative perspective). The employee has agreed to provide the organization with a set number of working hours per day and in return the government bypasses negotiation, bargaining, and other transaction costs since they are already built into this relationship. Moreover, it is unlikely that the employee is being offered a high-powered incentive in the form of a direct monetary benefit for meeting a particular deadline or saving a pre-specified amount of money in production – this is especially true in public organizations. Instead, the employee is paid a salary for the entire bundle of tasks detailed in the job description. Beyond the money received as direct
compensation, the employee may also be motivated by future career opportunities and more intrinsic factors such as working toward the greater public good.

Based on the aforementioned arguments, I offer the following propositions:

*Proposition 1:* Services characterized by high governance costs will likely remain inside public hierarchies.

*Proposition 2:* Contracts characterized by high governance costs will likely be longer in duration.

*Proposition 3:* Contracts characterized by high governance costs will more likely be awarded to a nonprofit organization.

In summary, the incentives tradition in boundary research offers insights into the true cost of contracting and provides a reasonable theoretical argument about when a manager is likely to contract out a particular service. Building on the themes developed in chapter two, I contend that in recent decades public managers are facing mounting pressure from politicians and government reform advocates to explore the potential cost savings associated with contracting out services— even those that have been traditionally produced directly by public organizations. Instead of blindly contracting any service, however, public managers make decisions based on which services will be *easier* to govern via contract. As a substitute for measuring the governance costs directly, the incentives tradition offers an approach guided by measuring service level and market attributes which will likely lead to more or less governance costs. While the incentives approach is an important component to understanding public sector make-or-buy decisions, it does not take into account the unique institutional environment of public management. To truly understand contracting decisions, it is important to integrate the vertical pressures related to political oversight and citizen demands, as well as including the different rules and norms.
prevalent in the public sector. I believe that insights garnered from the capabilities tradition of boundary research can be helpful in this regard.

**The Capabilities Tradition**

Management theorists have often felt isolated from the economics literature and the incentives based approach espoused by many in the business academy. While organizational economists have not ignored the management component altogether, it is often a secondary or implicit topic of discussion (Foss 1998). In addition, theorists from the incentives tradition have often downplayed learning and a firm’s production capabilities when making predictions about make-or-buy decisions. A recent surge of research aimed to correct these perceived oversights can be generally referred to as the capabilities theory of the firm.  

Capabilities-based theories focus on the fundamental observation that the firm is not a collection of tangible assets, but rather a collection of intangible resources, knowledge, experiences, and skills. Much of the modern capabilities research is an outgrowth of the seminal work by Edith Penrose (1959) who conceptualized the firm as a “pool of resources” rather than a locus of transactions. To Penrose, core activities or capabilities are embedded in an organization’s values, structures, and managerial systems, not in a few talented individuals. Penrose put strategic management at the forefront as a way to develop and utilize preexisting firm strengths or resources. Implicit to this argument is that effective strategizing requires strong coordination. One of the key components of the capabilities approach, therefore, is that the heterogeneous mix of resources found in firms result in competitive advantages when they mesh in a team-like manner through effective coordination. In the public sector, however, it is not so

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16 For my purposes, I treat a collection of theories as the “capabilities” theories of the firm. Specifically, I am including three varieties of theoretical arguments under the general heading of capabilities: knowledge-based theories (Conner 1991), resource-based theories (Barney 1991), and evolutionary theories of the firm (Nelson and Winter 1982).
much the heterogeneous mix of resources, per se, which renders public organizations more
effective, but rather the internal ability to interpret, coordinate, and respond to unique
institutional environments. As Williamson (1999) and others from the incentives tradition have
noted, public sector hierarchies possess unique coordinating capabilities when compared to
hierarchies from the private sector. I aim to show that public sector capabilities, when combined
with insights from the incentives tradition, form a useful theoretical framework for analyzing
make-or-buy decisions.

An important argument put forth by capabilities researchers is that internal organization
is best understood by focusing on how hierarchy helps build a shared context between
through the formation of firm-specific language and routines that both enhance the performance
of an activity itself and aid in ensuring its efficient governance” (p. 857). While seemingly at
odds with organizational economics, an argument can be made that shared context actually
provides employees with similar perceptions of reality and convergent expectations which in turn
facilitates firm monitoring (Alchian and Demsetz 1972) and information recognition that “is
costly to communicate across markets” (Williamson, Watcher and Harris 1975).

Shared contexts are bundles of routines and tacit knowledge that emerge over time as
responses to coordination problems. They materialize as responses to historical circumstances
and organizational learning and their emergence is akin to an investment that is hard to imitate or
replicate outside the organization. Moreover, an argument can be made that there is no market
for these types of assets, thus rendering them similar to public goods (Mayer and Solomon 2005;
Foss and Foss 1998). Kogut and Zander (1996), for example, suggest that hierarchy often has
higher-order coordination abilities over the market; so coordination can actually improve the flow of different types of knowledge – including shared contexts and routines.

For coordination to be effective, each employee develops over time what Eliasson (1990) refers to as “receiver competence,” defined as the ability to process information communicated by routinized organizational structure and codes. Receiver competence is not free, however. An illustrative example is how a person learning a second language facilitates communication between two parties of different nationalities. Without the common language, knowledge transfer – while not impossible – would be extremely difficult. But as anyone who has attempted a second language knows, it requires copious amounts of time and effort. Unlike transaction costs and incentive approaches that focus primarily on static comparisons, the capabilities approach, therefore, places learning at the forefront (Nelson and Winter 1982).

Taken one step further, some argue that all transaction costs are inherently information costs (Dahlman 1979). Consequently, time and learning become exceedingly important since “transacting parties will with time develop or hit upon institutional arrangements that mitigate the sources of transaction costs” (Langlois and Robertson 1995: p. 29). Take for example driving on the right side of the road. This simple and relatively straightforward rule developed over time to enable individuals to effortlessly negotiate passage on a road each time he or she encounters another vehicle. Instead of a facing a perpetual game of chicken and wasting time and energy, society coordinates automobile travel with relative ease. The overarching point – according to theory – is that learning and developing institutions to coordinate knowledge over time is paramount to understanding capabilities of organizations.
Core Capabilities in the Public Sector

In the incentives approach, the mark of an effective governance structure is in its ability to align incentives and overcome opportunism. The firm is viewed as a second-best alternative when markets fail and its role is to coordinate resources when incentives are misaligned. But incentive theorists pay less attention to why coordination is necessary because they pay less attention to production (Foss 1998; Conner 1991). The capabilities approach emphasizes the evolution of capabilities in production and coordination by way of routines and learning. In public organizations, the ability to understand, communicate, and respond to public sector institutions is the primary capability differentiating it from a private firm. Furthermore, there is no reason to believe that employees in for-profit firms, given their incentive structures, would be motivated to develop such skill sets. As a result, the key to understanding public sector make-or-buy decisions is delineating which services require this type of capability and which do not.

Using the logic described above, one could argue that there are two parts of a firm – or in this case a public organization – the intrinsic core and ancillary capabilities (Langlois and Robertson 1995). In the public sector, I contend that the intrinsic core is composed of services that are high in accountability or services providing the organization with coordinating capabilities. Services high in accountability require significant oversight and are often accompanied by numerous rules and procedures. Take for example provision of public safety; most people would not suggest that the private sector be the primary provider of police departments since the profit motive may interfere with lines of accountability between citizens and political overseers. Citizens want to know that there is a direct link between high accountability services – like public safety – and elected officials. We see evidence of this in the Iraq War. Procurement corruption in the war effort has been well documented and is an
important factor (among other factors) leading to organized resistance to the war from interest
groups and grass-roots citizen campaigns (Krugman 2006). High accountability services actually
align nicely with the incentives approach since many of these services, while comprising part of
the intrinsic core, are high in governance costs. For instance, performance measurement in public
safety functions is likely to be highly ambiguous.

Other services comprise the intrinsic core due to their ability to coordinate knowledge
and information. In the public sector, governments engage in a wide variety of activities in
comparison to for-profits firm focused on a specific industry. The government has to be able to
coordinate interdependent actions from multiple departments. An important coordinating
mechanism in the public sector is the institutionalization of rules and norms. For the coordinating
mechanisms to be effective, however, the government must retain departments and employees
who are able to understand and interpret these norms and rules – such as a human resources
department. In the private sector, it may be relatively easy to outsource human resource
functions, especially in “at will” employment states where the rules governing hiring, firing, and
sanctioning employees are relatively straightforward and determined primarily by the company
itself. Contrarily, public sector human resource departments are repositories for the coordination
and knowledge encapsulated in highly institutional civil service systems. One way to
conceptualize this web of formal and informal rules and norms is that it constitutes a
communication network which facilitates more effective coordination (see Dewatripont and
Bolton 1994). What is required for the network to function properly is a department where the
employees are trained to receive the information—like a human resources department. Perhaps
more importantly, these capabilities develop over time. Therefore, as coordination capabilities
accrue, there is a potential “cost” associated with transferring these capabilities across governance structures.

A contrary argument could be made that private firms specializing in human resources could learn the intricacies of the public sector; but would the employees in private firms be motivated to do so? There is considerable research – from both public administration and economics – suggesting that public sector employees possess unique motivations (see Rainey 2003; Brewer 1998; Acemoglu et al 2003; Francois 2000). Specifically, public employees may possess intrinsic qualities which respond better to lower-powered, mission driven incentives. Employees in for-profit firms, on the other hand, may be more likely to respond to higher-powered monetary incentives which are tied to measurable performance. And since the time and effort needed to learn the intricacies of the public sector may have no bearing on overall performance or profits – and more importantly, may be difficult to measure – employees in private firms may have no incentive to develop these types of capabilities (Holmstrom and Milgrom 1991). In addition, informal norms and routines are just that, informal, and are often uniquely public in nature; the knowledge encapsulated in them would likely be lost if certain services are contracted out.

Taken together, the coordination and accountability mechanisms allow public organizations to account for the important political processes and vertical pressures from citizens and politicians which are somewhat unique to the public sector. By contracting out such functions, public managers’ risk loosing the ability to meet public goals and maintain public sector values. The primary role of public managers, therefore, is to identify and protect the core capabilities of the government.

*Proposition 4: Core capabilities are less likely to be contracted out.*
Ancillary Capabilities

Ancillary capabilities comprise services which may or may not be successfully purchased from the market. For these services, the incentive alignment argument moves to the forefront. I contend that capability characteristics are the primary determinant of whether a service will be contracted out or not. For ancillary services, if the governance costs associated with a contract are less than providing the service in the hierarchy, then the service is a reasonable candidate to be contracted out – according to theory. Since some governance costs reflect supply characteristics in a given market, the costs may vary from government to government. Hence the boundaries of public organizations are determined primarily by how ancillary capabilities are delivered. By combining the relative efficiency characteristics of the incentives tradition with an organization’s ability to develop capabilities over time, I am able to put forth the foundation for a public sector theory of make-or-buy decisions.

A Combined Theoretical Approach

The incentives and capabilities based approaches offer unique insights into public sector make-or-buy decisions when combined into a single framework. It is important to understand how different governance structures possess unique qualities making them more or less effective at governing different types of transactions or services. For simplification and clarity, I will focus on three different governance structures prominent in the public sector: public hierarchy, bilateral governance, and arms-length contracting. The first, public hierarchy refers to when a manager or politician decides to keep a service inside the hierarchy – or to make the service. The second, bilateral governance refers to governance arrangements typically exemplified by long-term contracts used to mitigate governance costs. In these contractual relationships, governments often rely on establishing long-term relationships with a small group of contractors, where trust
acts as a substitute for contract stipulations in guarding against opportunism. According to Williamson (1996), long-term contracts are a form of hybrid governance falling somewhere between market and hierarchy. Long-term contracts often mimic elements of hierarchy due to the stipulations in the contract. For example, the cost reimbursement stipulations found in cost-plus contracts act to spread the risk more evenly across the relationship – similar to the way risk is evenly shared within hierarchies. Another way of saying this is that governments can choose to “make” even when they are “buying” from the market. The third governance structure, arms-length contracting, refers to relatively simple contracts between the government and a contractor where the stipulations are straightforward (relative to bilateral governance) and easily written into the contract. Of the three governance structures, arms-length contracts most closely resemble the market characteristics described in the TCE literature.

Governance structures, like services, possess a unique set of attributes for governing transactions. As table 3.1 illustrates, public hierarchies are not characterized by strong incentives, but are likely to have strong coordination capabilities and considerable tacit knowledge which has accrued over time. At the other end of the spectrum, arms-length contracting is less likely to involve any accrual of tacit knowledge since the contracts are relatively short in duration and what few administrative controls present will be written into the contract. Finally, bilateral governance falls somewhere in-between hierarchy and arms-length contracting. Since many of these contracts are longer in duration and often involve a smaller group of contractors, tacit knowledge may build up as the government decides to relinquish this service to a reliable contractor. It is important to note that the extent of potential governance costs is what separate arms-length contracting and bilateral governance. According to Williamson’s discriminating alignment hypothesis, each governance structure will align more effectively with transactions
characterized by a particular set of attributes. My argument is that managers observe the
dynamics of the matching process and make contracting decisions in accordance with it.
Specifically, managers protect public sector capabilities and look for potential cost savings and
service quality improvements by contracting out ancillary capabilities.

Table 3.1      Attributes of Governance Structures

<table>
<thead>
<tr>
<th>Governance Structure</th>
<th>Arm's Length Contracting</th>
<th>Bilateral Governance</th>
<th>Public Hierarchy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incentive Intensity</td>
<td>++</td>
<td>+</td>
<td>0</td>
</tr>
<tr>
<td>Tacit Knowledge</td>
<td>0</td>
<td>+</td>
<td>++</td>
</tr>
<tr>
<td>Coordination</td>
<td>0</td>
<td>+</td>
<td>++</td>
</tr>
</tbody>
</table>

++ = strong
+ = semi-strong
0 = weak

Figure 3.1 illustrates the general pattern of make-or-buy decisions in the public sector.
Each quadrant exemplifies a match between a particular governance structure and given set of
service and market level attributes. I include this two-by-two to help illustrate the propositions
developed earlier in this chapter and to further clarify the general proposition that managers
protect core capabilities, while at the same time looking for ways to improve efficiency. Clearly
there are cases that do not fit neatly into the quadrants of this two-by-two framework.
Consequently, it is closer to a heuristic devise than a true theoretical model. In the following
sections, I discuss the quadrants in turn.
Quadrant III: Bilateral Governance  
Long-term Contracts/Partnerships

Quadrant I: Accountability-Based Governance  
Public Hierarchy

Quadrant IV: Arms-length Contracting  
Competitive Contracting

Quadrant II: Coordination-Based Governance  
Public Hierarchy

**Governance Costs**
- **High**
- **Low**

**Capabilities**
- **Low**
- **High**

**Quadrant I – Accountability-Based Governance**

Services in Quadrant I are characterized as accountability capabilities. Given the sensitive nature and mission of public safety functions, for example, political overseers and citizens may demand that these functions remain inside the public sector since accountability channels are already established. Services in this quadrant are also beset by significant governance costs. Therefore, even if the capability component was absent, it would be difficult to contract out these services. Examples of services in this quadrant: national security, police safety services, and regulatory functions.
Quadrant II – Coordination-Based Governance

In this quadrant we find services that add coordinating capabilities and provide the government with the ability to operate effectively in its institutional environment. By contracting out these services, the government would be risking its ability to process tacit knowledge and adhere to norms – both formal and informal – that are unique to public organizations. Like accountability-based governance, services characterized by significant coordinating capabilities – such as human resources functions – will likely remain inside the hierarchy. Unlike accountability based governance, however, the actual governance costs of contracting out a service in this quadrant may actually be quite small. Thus, the capability characteristics override the ease of contracting, placing this quadrant at odds with incentive based approaches from organizational economics. It is the uniqueness of the public sector which influences the public manager to keep these services inside the hierarchy. Examples of services in this quadrant: human resources, tax assessment, legal services, and public relations.

Quadrant III – Bilateral Governance

Transactions in this quadrant are not considered core capabilities, but are characterized by high governance costs. These types of services are often integral to the public sector but traditionally have been provided by organizations outside of the public sector, such as the health and human services. In other words, the government has not developed any special capabilities in these service delivery areas. It is also likely that the characteristics of the market are insufficient for arms-length transactions. Consequently, these services require substantial protections to be built into the contract to guard against potential opportunism. Often these relationships are characterized by long-term contracts with organizations sharing similar missions to the public sector (see and Ghatak 2005). Many of the service delivery networks described in the public
administration literature fall into this quadrant (see Provan and Milward 1995). In addition, local governments also contract with other governments in surrounding or overlapping jurisdictions when asset specificity is high. Cities often contract out with the county for services to achieve economies of scale. For services requiring large capital investments, it may not be prudent or efficient for both governments to invest in such infrastructure. Moreover, the likelihood of a private contractor making such an investment is quite low.\textsuperscript{17} Examples of services in this quadrant: mental health services, welfare services, and mass transit systems.

**Quadrant IV – Arms-Length Governance**

Services in this quadrant are characterized by low capabilities and low governance costs. According to theory, services falling into this quadrant will be the easiest to contract out. The types of services in this quadrant are likely to have a sufficient and stable supply of contractors; performance will be relatively easy to measure; and not likely to be characterized by asset-specific relationships. One of the most commonly studied services falling into this quadrant is refuse collection (see chapter 6). Other examples include: maintenance and custodial services, vehicle towing and storage, and operation of cultural programs.

**Summary**

The purpose of this chapter has been to present my theoretical arguments for why managers decide to contract for some services with outside providers, while keeping others inside public hierarchies. To accomplish this goal, I rely on tools developed in economics and business. Specifically, the incentives- and capabilities- based approaches to boundaries research provide a foundation upon which to assess make-or-buy decisions. By combining these two approaches, I am able to incorporate the key insights and findings from research focused on the private sector into a public sector approach without compromising the uniqueness of the public sector.\textsuperscript{17} See Globerman and Vining’s (1996) discussion on contestability.
sector. As Frant (1996) suggests public administration scholars “cannot make full use of these ideas [from economics] by trying to squeeze the public sector into a framework designed for the private sector” (p. 365). By modifying the capabilities approach, I am able to include unique aspects of the public sector into a wide-ranging theoretical framework. In chapter four, I test the propositions developed here using a large data set of local government service delivery decisions.
CHAPTER 4
LOCAL GOVERNMENT MAKE-OR-BUY DECISIONS: AN EMPIRICAL ANALYSIS

In chapter one, I described the need for research examining public sector make-or-buy decisions and presented the research questions guiding this dissertation. In chapter two, I retraced the historical origins of contracting in the U.S. and described the ideological forces driving the increased reliance on contracting in recent decades. In chapter three, I developed a theoretical framework for analyzing these contracting decisions which relies on integrating theoretical tools from economics and business. Generally, I argue that public managers protect core capabilities while searching for ways to cut costs and improve the quality of ancillary capabilities – often by contracting out these services. The aim of this chapter is to empirically test the propositions developed in chapter three using quantitative data on actual make-or-buy decisions. In this chapter, I focus on the propositions relating to the first two research questions described in chapter one: what factors influence whether a service is contracted out; and what factors influence to whom the service is contracted? To accomplish these research goals, I use the most comprehensive set of local government service delivery data collected by the International City/County Management Association (hereafter ICMA) in 2002.

This chapter is organized into six sections. First, I provide a brief overview of local government service delivery decisions. In particular, I highlight the unique set of challenges facing local government officials when making these decisions. Second, I transform the propositions developed in chapter three into specific hypotheses to be tested using the ICMA
data. Third, I describe the data and empirical measures to be used in the analysis. Fourth, I provide an overview of the statistical techniques used in the analysis – specifically, the logit and multi-nominal logit (hereafter MNL) models. Fifth, I provide the results of the analysis. Finally, I end the chapter with a brief summary of the important findings, implications, and limitations of the study.

**Local Government Service Delivery**

Local governments have relied on contracting for goods and services with nongovernmental organizations for many years. As discussed in chapter two, local government contracting emerged in the post World War II years as cities expanded their infrastructures to accommodate citizens migrating to suburban communities. This trend continued well into the 1970’s and accelerated in the last three decades as contracting out became a particularly attractive option due to ideological shifts associated with government reform movements. In addition, local government in the U.S. faced substantial and unique fiscal pressures due to its position at the “bottom” of the federal system. Often hamstrung by rules governing tax collection and revenue generation, local managers and politicians are in the difficult position of trying to maximize service delivery potential while at the same time achieving cost reductions (Savas 2000; Sclar 2000; Greene 2002).

**Expansion of Local Government**

The prosperity of the late 1940’s and early 1950’s led to considerable changes in local governance patterns. The migration of citizens from central cities to suburban communities resulted in expanding demand for essential services in communities previously unequipped to meet such demands. It is not a coincidence that the growth in the number of local government employees far outpaced that of state and federal governments (Cooper 2003). To help local
governments build the requisite infrastructure, funding was made available through state and federal grants. The sheer scale of the expansions required large quantities of manpower and technical expertise. As a result, local governments – often lacking the necessary skills and manpower – turned to contractors from the private sector.

**Fiscal Crisis**

Prior to the 1970’s, most cities had a relatively stable or growing tax base upon which to project future revenues. A consequence of suburban migration was that large, older cities began to see considerable deterioration of their tax bases which left managers and politicians scrambling to find ways to pay for services. To make matters worse, the energy crisis of the 1970’s led to a major economic recession “that significantly reduced municipal revenues while boosting welfare related spending” (Greene 2002: p. 4). On top of everything else, the federal government, along with the states, expanded the number of mandates required of local governments. These new programs and regulations put additional pressures on already struggling local governments, leaving them with fewer revenues and additional mandated programs to administer. Finally, as if the local governments were not in a difficult position already, the federal government began to limit outgoing grants earmarked for local governments during the era known as the “new federalism.” As Greene (2002) notes, “the main factor that fueled privatization efforts was the massive reduction in federal aid” associated with Ronald Reagan’s “new federalism” (p. 4). Reagan believed that many public services could be “devolved” back to the private sector – or the market. He reasoned that instead of relying on the federal coffers, local governments needed to shift their dependence back to state and local revenue sources. The combined effect of deteriorating tax bases, increased mandates from the federal and state
governments, and the debilitating effect of the new federalism led many local managers and politicians to seek cost savings by way of contracting out services.

Since local governments were not in a position to meet the increasing demands for local services in the post war-years, public managers and politicians made pragmatic decisions to increase their reliance on outside organizations. Indeed, some argue that the rise in local government contracting has been driven entirely by pragmatic decisions to save money (Greene 2002). I argue that focusing entirely on pragmatic decision making misses half of the equation. As chapter two illustrates, ideological influences are also important factors leading to more contracting out. Indeed, Reagan’s new federalism was clearly an ideological shift aimed at altering the scope of government activity and who should pay for it in our federal system. The events and circumstances leading to more contracting out during the 1970’s and 1980’s reached its pinnacle during the 1990’s and the NPM movement. Osborne and Gaebler’s (1992) call for governments to “steer” instead of “row” captures this ideological and philosophical shift. In the following section I describe the local government contracting decision in more detail, and also the factors that are hypothesized to impact such decisions.

**Overview of the Local Make-or-Buy Decision**

In chapter three, I described two theoretical perspectives which potentially add clarity to understanding public sector make-or-buy decision. Both the capabilities and incentives approaches to boundary research provide theoretical leverage to understanding why certain services may be contracted out or remain inside the hierarchy. In this chapter, I put these theoretical perspectives to the test using data drawn from local governments across the country. Figure 4.1 illustrates the anatomy of the local make-or-buy decision. Essentially, this schematic describes two important decision points, or steps, for public managers in the decision-making
process. First, managers have to decide whether or not to contract out a particular service. Second, if the service is contracted out, the managers must decide with whom to contract.\textsuperscript{18}

Figure 4.1 The Local Make-or-Buy Decision

I argue that theory can help us understand each step in this process. For example, proponents of the capabilities approach suggest that managers will protect an organization’s core capabilities by keeping these types of services inside the hierarchy. At the same time, those advocating the incentives approach argue that governance costs are an important determinant of whether a service is contracted out or not. My argument is that both capabilities and governance costs will influence this first step in the decision, but that protecting core capabilities will be the primary factor. However, once a capability is contracted out, the benefits of hierarchy – coordination capabilities, encapsulated tacit knowledge, learning, etc. – will have been reduced.

\textsuperscript{18} By whom, I am referring to a sector (for-profit, nonprofit, other government), not a specific organization.
Therefore, the capability attribute will have less bearing on the second step in the decision process. Instead, governance costs become increasingly important. In particular, the ability to measure performance, or *ambiguity*, will be a primary influence impacting to whom the local government awards the contract. In the following sections, I provide a more detailed description of the influences impacting make-or-buy decisions and develop testable hypotheses.

**Factors Influencing Local Make-or-Buy Decisions**

A good deal of the local contracting literature focuses on the concept of contract management capacity (Brown and Potoski 2003b). From this perspective, public managers can increase the likelihood of successful contracting by increasing their understanding of which service-level characteristics, market conditions, and city-level characteristics will likely lead to more successful contracting. Implicit to this argument is that understanding the true cost of contracting – including the governance costs – is an important skill for public managers. But perhaps even more important, managers must understand which services are core to the local government. In the following sections, I outline the potential factors I expect to influence local make-or-buy decisions.

**Service-Level Characteristics**

As detailed in chapter three, there are two primary types of variables impacting service delivery decisions: governance costs and core capabilities – both of which are hypothesized to impact the decision about whether to contract out. Asset specificity and ambiguity are governance costs which are also service-level characteristics. Asset-specific relationships are those where an investment is required for provision of the service and this investment is not easily transferred from its current use to a different use.¹⁹ In local governments, asset specificity often is tied to the magnitude of the start-up costs and the ongoing fixed costs (Brown and

¹⁹ Williamson (1996) describes this phenomenon as the redeployability.
Potoski 2003). For example, a gas utility system or a mass transit system may require substantial investments which are not easily moved to a different use. If the government were to contract out such services, it risks being “held up” by the winner of the original contract since other service providers are unlikely to enter the market (see Williamson 1996). To ensure that it is protected by the contract, the government will likely incur considerable transaction costs associated with bargaining and negotiation. To avoid such costs at the outset, local governments are more likely to keep asset specific services inside the government.

\[ H_1: \text{As asset specificity increases, public managers are more likely to keep the service inside the public hierarchy.} \]

A second governance cost, ambiguity, refers to the ease of performance measurement inherent to the service. When outcomes are difficult to measure – or high in ambiguity – performance monitoring becomes exceedingly difficult for the government. Consequently, the government is vulnerable to potentially costly opportunistic behavior or ineffective performance on the part of the contractor. For example, it is often difficult to measure the success or failure of welfare programs or other social services since performance is ambiguous and multi-dimensional. The additional costs associated with ensuring that the government is able to monitor contractor performance adequately will likely lead public managers to rely more on direct provision by the public organization instead.

\[ H_2: \text{As ambiguity increases, public managers are more likely to keep the service inside public hierarchies.} \]

Despite the theoretical reasons for not contracting out services high in ambiguity, many of these types of services are indeed contracted out. One reason for this is that historically local governments passed these services off to other sectors. For example, many of the health and human services are typically provided by nonprofit organizations. As discussed in chapter two,
local government officials made pragmatic decisions about which capabilities to develop. However, by not providing these types of services directly, the government risks exposure to opportunistic behavior on the part of the contractor. The government can minimize this risk by contracting with nonprofit organizations since nonprofits have more goal and mission alignment with local governments, as well as low-powered incentives (Besley and Ghatak 2003). For-profit firms, on the other hand, may be motivated to stray from contractual stipulations in an effort to improve the bottom line. Therefore, when contacting services characterized by ambiguity, public managers will likely contract with a nonprofit organization.

\[ H_{2a}: \text{When contracting out is chosen by governments, increases in ambiguity will increase the likelihood of contracting with a nonprofit organization.} \]

Finally, some services are considered a core capability to local governments. As discussed in chapter three, core capabilities are defined as those services which are high in accountability or services which improve governments’ ability to coordinate knowledge. These services are likely to remain inside the hierarchy because outside organizations are not in a position to replicate the tacit knowledge and shared contexts inherent to these services; and perhaps even more importantly, they may not be motivated to do so. I argue that public managers recognize the importance of these types of services to the overall mission and individual objectives of the government.

\[ H_3: \text{Local managers are more likely to keep core capabilities inside public hierarchies.} \]

**Market-Level Characteristics**

In addition to service-level characteristics, market characteristics impact the decision whether to contract out a service. One form of uncertainty, volatility, refers to environmental uncertainty surrounding the contract. If, for example, there are very few suppliers of a given
service in a market, the market is said to be volatile. Contrarily, supply certainty refers to a market where there is a relatively stable supply of providers for a given service. Supply certainty makes it easier for the local government to protect against opportunism since the contractor is competing with other providers to win and maintain the contract (Kettl 1993; Boyne 1998; Goldsmith 1999). The government is in a position to easily replace poor performing contractors – and presumably the contractor knows this. It stands to reason, therefore, that the supply certainty for a given service will increase the likelihood of contracting out.

\[ H_4: \text{As supply certainty increases, public managers are more likely to contract out the service.} \]

**Form of government**

An important part of the general theoretical framework discussed in chapter three is that public managers recognize capabilities and potential governance costs. Unlike the federal governments and state government, the administrative functions of many local governments are actually overseen by politically elected officials. In other local governments, the administrative functions are overseen by an appointed city or county manager. There is evidence to suggest that these city and county managers have more professional training and may be more willing to experiment with new management strategies in an effort to improve efficiency than administrators in mayoral systems (Hefetz and Warner 2004; Benton 2005). Consequently, it is reasonable to assume that city and county managers will be more likely to look for cost savings from contracting out (Hefetz and Warner 2004).

\[ H_4: \text{Local governments with the city or county manager form of government will be more likely to contract out, in general.} \]

It is also reasonable that due their professional training and affiliations with professional organizations, city and county managers will be more likely to identify potential governance
costs, as well as isolate and protect core capabilities. Table 4.1 provides a summary of the hypotheses to be tested.

Table 4.1 Summary of Hypotheses

*Contracting Out:*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Predicted Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset Specificity</td>
<td>-</td>
</tr>
<tr>
<td>Ambiguity</td>
<td>-</td>
</tr>
<tr>
<td>Supply Certainty</td>
<td>+</td>
</tr>
<tr>
<td>Core Capability</td>
<td>-</td>
</tr>
<tr>
<td>Manager</td>
<td>+</td>
</tr>
</tbody>
</table>

*To Whom (NP base case):* For Profit Other Gov.

<table>
<thead>
<tr>
<th>Ambiguity</th>
<th>For Profit</th>
<th>Other Gov.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Data and Measures**

The data for this study are drawn from two primary sources: the International City Management Association’s (ICMA) Alternative Service Delivery Survey (ASD) collected in 2002; and the U.S. Census of Governments from the same year. The ASD is a stratified sample of city and county governments with residential populations of at least 10,000 and 25,000, respectively. Most importantly, the survey contains information about the service delivery method a government chooses for an array of up to 64 different services. As figure 4.2 illustrates, the majority of services (65 percent) in the sample are provided directly by public hierarchies.
Contracting for services with for-profit firms represents the second most common decision category (18 percent); comprising 52 percent of all service delivery using outside organizations.

Figure 4.2  Distribution of Service Delivery (ICMA-ASD 2002)

The ICMA surveys are a stratified sample of city and county governments with residential populations of at least 10,000 and 25,000, respectively. The sampling frame also includes both:

- one in eight cities for populations between 2,500 to 9,999 and
- one in eight counties between 2,500 and 24,999.

There are 1259 city and county governments who responded to the 2002 version of the survey – a response rate of just under 24 percent. The respondents are generally representative of the population with regard to geographic region; although cities and counties from the Northeast are underrepresented (15 percent). Since I will be looking at specific transactions (i.e. how each
government provides each service), the unit of analysis is a city-service pair.²⁰ Each service represents a discrete service delivery decision. To control for the fact that the choices made by individual local governments are not likely to be independent, I will use robust standard errors, and cluster by local government ID (see Brown and Potoski 2003b).

The cities and counties in the sample range in size of population from 2,565 to 3,694,820. The median population of the sample is 28,587 and includes fifteen localities with populations over one million and approximately one in five localities with populations over 100,000.²¹ In addition to the ICMA data, I include fiscal measures from the United States Census of Governments from 2002. Specifically, I draw data on the per capita tax revenues of each city and county in the sample.

**Dependent Variables**

I use two dependent variables in this study. The first is a simple dichotomous measure representing whether the transaction was contracted out to any outside organization (contracted out=1). The second, governance structure, is a nominal variable drawn from the ICMA-ASD. The four possible alternatives include: public hierarchy; other government; nonprofit organization; and private for-profit firm.²²

**Governance Costs**

I include three governance cost variables in the analysis: *asset specificity*, *supply certainty*, and *ambiguity*. To measure asset specificity, I use Brown and Potoski’s (2003) *asset specificity* variable which is based on a survey of 75 elites (see appendix table A.1 for a more detailed explanation). It assesses the asset specificity (on a scale of 1 to 5) of the same 64 services.

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²⁰ If every government in the sample provided all 64 services, the number of observations would be 82,112. However, some governments only provide a small fraction of the 64 services reducing the number of observations considerably. The total number of city-service pairs is 34,529 (see table 4.2).
²¹ Population data are included in the ICMA survey, but they are from drawn from Census 2000.
²² A detailed explanation of how each measure is constructed is available in the Appendix (table A.1)
services included in the ICMA – ASD. For comparability, I standardize the variable with a zero mean and a standard deviation of one. The supply certainty variable is measured taking the average population of the cities providing each of the 64 services; thus, services primarily provided by large cities will likely have a more stable collection of suppliers. Again, I standardize the variable with a zero mean and a standard deviation of one. To measure ambiguity, I use Brown and Potoski’s (2003) service measurability variable. As with the asset specificity variable, the authors used an elite survey to develop this measure on a scale from 1 to 5. Once again for comparability, I standardize the variable with a zero mean and a standard deviation of one.

**Capability**

Unlike the asset specificity and ambiguity measures, I do not possess a direct measure of a local government’s core capabilities and thus I have to develop a proxy measure instead. As described in the business literature, one of the key aspects to the capabilities approach is that core capabilities develop over time (Richardson and Langlois 1995). Specifically, shared contexts and tacit knowledge accrue within hierarchies, along with learning and organizational routines. Accordingly, one way to measure a core capability is to isolate those services which most local governments historically provide. To capture the requisite time component, I utilize the 1992 and 1997 versions of the ICMA-ASD to determine which services are more likely to be provided by all local governments in each of the preceding iterations of the survey. I measure the core capability variable, therefore, as the proportion of all local governments providing a particular service in both 1992 and 1997 (see Levin and Tadelis 2005). 23 If a local government provided the service in 1992 but not in 1997, that government would be excluded from the count. The logic behind this measure is that local governments provide a wide range of services and

---

23 There are 586 cities and counties in both the 1992 and 1997 versions of the ICMA-ASD.
there is considerable variance when comparing the full array of services provided by one
government to that of another. Arguably, services that are provided by a larger proportion of the
local governments in the 1992 and 1997 ICMA samples (regardless of service delivery method)
is a reasonable proxy for what is core to local government in general. For example, if 90 percent
of all local governments provided a service in both 1992 and 1997, it is relatively safe to assume
that it is a core function of local governments; whereas, if only 10 percent of the local
governments provide the service, it is more likely an ancillary capability. As with the governance
cost variables, I standardize core capability with a zero mean and a standard deviation of one.

One way to add validity to the core capability measure is to discern whether the variable
corresponds to services which are high in accountability or have coordinating capabilities. To
accomplish this, I compare the mean core capability values of the different services used in the
analysis to determine whether those services which are high in accountability and coordination
also have high mean values for the core capability variable. Instead of examining all 64 services
from the ICMA data, however, I use a taxonomy developed by Robert Stein (1990). Using
ICMA data from 1982, Stein collapsed the ICMA services into 17 different service delivery
categories for ease of interpretation. He based his taxonomy on the functional categories devised
by the U.S. Census Bureau for the U.S. Census of Governments conducted every five years. The
Census Bureau’s categories encompass the entire range of government activity in the U.S. –
including federal, state, and local governments. Stein uses only those categories which are
relevant for local service delivery, as well as those that match the services included in the ICMA
survey data. For example, education services are not included in Stein’s taxonomy, since
education is not included in the ICMA data.
Table 4.2 Mean Core Capabilities by Stein’s Service Categories

<table>
<thead>
<tr>
<th>Service Delivery Category</th>
<th>Mean Core Capability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing</td>
<td>1.071</td>
</tr>
<tr>
<td>Parks and Recreation</td>
<td>0.861</td>
</tr>
<tr>
<td>Police</td>
<td>0.589</td>
</tr>
<tr>
<td>General Government</td>
<td>0.486</td>
</tr>
<tr>
<td>Fire</td>
<td>0.261</td>
</tr>
<tr>
<td>Highway</td>
<td>-0.300</td>
</tr>
<tr>
<td>Water</td>
<td>-0.301</td>
</tr>
<tr>
<td>Sewerage</td>
<td>-0.320</td>
</tr>
<tr>
<td>Health</td>
<td>-0.814</td>
</tr>
<tr>
<td>Sanitation</td>
<td>-0.911</td>
</tr>
<tr>
<td>Cultural Programs</td>
<td>-1.202</td>
</tr>
<tr>
<td>Welfare</td>
<td>-1.403</td>
</tr>
<tr>
<td>Airports</td>
<td>-1.798</td>
</tr>
<tr>
<td>Transit</td>
<td>-2.049</td>
</tr>
<tr>
<td>Electric</td>
<td>-2.406</td>
</tr>
<tr>
<td>Gas</td>
<td>-2.668</td>
</tr>
<tr>
<td>Hospitals</td>
<td>-2.825</td>
</tr>
</tbody>
</table>

Note: Core capability is standardized

As table 4.2 illustrates, the five services with positive mean values for the core capability variable are housing, parks and recreation, police, general government, and fire. I can make the case that four of these categories match my theoretical arguments about core capabilities. For instance, housing is a regulatory function at the local level thus requiring considerable accountability to the public. Similarly, police and fire departments provide services which often remain under direct public provision in order to ensure that strong lines of accountability between citizens and public officials are maintained. Finally, general government functions improve the government’s ability to coordinate and process information which is often unique to the public sector. Parks and recreation services, on the other hand, do not help coordinate information, but may be grouped as a high accountability service due to the importance of maintaining the integrity and viability of publicly owned lands. However, the accountability
connection for parks and recreation is less clear than with housing, police, and fire. Overall, I believe the core capability measure is a decent proxy for the core activities of local governments.

**Form of Government**

I include the manager variable (city or county manager=1) to control for the form of government. City and county managers are more likely to be insulated from the political process and are potentially more entrepreneurial than mayors or elected executives. In addition, they may be more institutionalized via academic training and membership in professional associations (Brown and Potoski 2003; Hefetz and Warner 2004).

**Control Variables**

I also include a group of control variables to help account for the variance in the data. To control for the size of the government, I include the population of the local government’s jurisdiction. To control for the different financial condition of each government, I include a per capita revenues variable which is measured by dividing total tax revenues by the population. To control for the service delivery capacity of the government, I add total services which measures the total count of services provided by the local government (1 to 64) regardless of service delivery method. As an additional control for the market of suppliers I include a variable identifying whether the municipality is a central city (as opposed to suburban or independent). The logic for including the central (central=1) variable is that central cities are likely to have a larger market of suppliers resulting in the potential for more efficient contracting via competition (see Boyne 1998 for discussion).
### Table 4.3  Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Governance Structure (by transaction)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public hierarchy</td>
<td>34529</td>
<td>0.654</td>
<td>0.476</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Other government</td>
<td>34529</td>
<td>0.118</td>
<td>0.323</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Nonprofit organization</td>
<td>34529</td>
<td>0.049</td>
<td>0.215</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>For-profit firm</td>
<td>34529</td>
<td>0.179</td>
<td>0.383</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Contracted out</td>
<td>34529</td>
<td>0.346</td>
<td>0.476</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Governance Costs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asset specificity</td>
<td>34529</td>
<td>2.979</td>
<td>0.629</td>
<td>1.70</td>
<td>4.220</td>
</tr>
<tr>
<td>Supply certainty</td>
<td>34529</td>
<td>9.070</td>
<td>1.947</td>
<td>4.985</td>
<td>18.296</td>
</tr>
<tr>
<td>Ambiguity</td>
<td>34529</td>
<td>2.591</td>
<td>0.530</td>
<td>1.53</td>
<td>4.29</td>
</tr>
<tr>
<td><strong>Capability</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Core capability</td>
<td>34529</td>
<td>0.621</td>
<td>0.198</td>
<td>0.059</td>
<td>0.867</td>
</tr>
<tr>
<td><strong>Form of Government</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manager</td>
<td>1259</td>
<td>0.657</td>
<td>0.474</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Control Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per capita revenues ($1000)*</td>
<td>1259</td>
<td>0.245</td>
<td>0.334</td>
<td>0</td>
<td>3.645</td>
</tr>
<tr>
<td>Population (10,000)</td>
<td>1259</td>
<td>8.136</td>
<td>20.139</td>
<td>0.252</td>
<td>369.482</td>
</tr>
<tr>
<td>Central city</td>
<td>1259</td>
<td>0.218</td>
<td>0.413</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Total services</td>
<td>1259</td>
<td>33.731</td>
<td>14.197</td>
<td>0</td>
<td>64</td>
</tr>
<tr>
<td>County</td>
<td>1260</td>
<td>0.233</td>
<td>0.423</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

*2002 Census of Governments

I include two additional measures to control for the political and institutional environment of the cities and counties in the sample. First, I include a county dummy (county=1) to differentiate between cities and counties. While city and county service delivery has become more similar in recent years (see Benton 2005), counties are less likely to contract out services. Counties are also more likely to be rural and therefore may have fewer suppliers. I also include state fixed effects to control for unaccounted heterogeneity between the states. Each state has a unique institutional environment which may affect local government make-or-buy decisions. For example, New York has a highly institutionalized civil service system with a strong public
employee labor union presence; whereas Georgia has virtually eliminated its civil service system and is a right-to-work state with a limited union presence (see West 2002). Similarly, the politically conservative nature of some states, like those in the Midwest and the South, may have an influence on a local decision maker’s willingness to contract out services. By including state fixed effects, I am able to capture some of this state-level variance in my estimations.

**Model and Method**

The analysis for this study is divided into two steps. Specifically I argue that some variables will be more influential when deciding whether to contract a service out, while others may play a more important role in the decision to whom should they be contracted. In the first part of the analysis, I am interested in what factors influence whether services are contracted out in general. According to my theoretical framework, step one is a function of governance costs, capabilities, form of government, and a vector of control variables. More formally:

**Step 1**

\[
\text{Contracted out} = f[\text{asset specificity, supply certainty, ambiguity, form of government, controls}]
\]

Since the dependent variable in step 1, _contracted out_, is dichotomous, I estimate the equation using a logit model (see Long 1997).

In the second step of the analysis, I examine which types of organizations are chosen once the decision to contract has been made. Specifically I am estimating the likelihood that an organization from one sector will be chosen, relative to an organization in another sector, based on the characteristics of the service. More formally:
Step 2

To whom (nonprofit, for-profit, other government) = \( f \) [asset specificity, supply certainty, ambiguity, form of government, controls]

The dependent variable in this part analysis – governance structure – represents a discrete choice (see McFadden 1974) between for-profits, nonprofits and other governments. Since these variables are nominal and thus no natural ordering exists between them, a multi-nomial logit (MNL) model is an appropriate estimation technique (Long 1997).

One of the drawbacks to using MNL is that it assumes independence of irrelevant alternatives (IIA) where the relative probability of choosing two alternatives is not affected by additional alternatives. In other words, the error terms of the different alternatives are unaffected by the other alternatives. Given the managers and politicians likely consider the relative advantage of the different governance structures; it is unlikely that IIA holds in this instance.

To account for this problem, it is necessary to allow the error terms of each alternative to correlate. Multinomial probit models (MNP) assume the error terms are distributed multivariate-normally and therefore allow for the circumvention of the IIA problem (Kennedy 2003). The most notable drawbacks to MNP estimation are the computational cost – it takes substantial amounts of time to run alternative specifications. In addition, there is currently a lack of canned interpretation techniques available for analysis. For these reason, I run an estimation using the MNP model for comparison purposes with the MNL. However, given the relative ease of interpretation when using a MNL compared to an MNP, and that the differences between the two are relatively small in these instances (no changes in sign or significance), I use the results of the MNL in my analysis and present the results of the MNP in the appendix (table A.2).
Results

Overall, I find statistical support for the majority of the hypotheses relating to the factors influencing whether a service will be contracted out or not (step 1). As table 4.4 – regression 1 illustrates, the overall estimation is significant and achieves a reasonable adjusted count $R^2$ of 0.201. Each of the governance costs is a statistically significant predictor of whether a service will be contracted out. Contrary to my expectations stated in hypothesis 1, asset specificity has a positive sign. A possible reason for this divergent finding is that cities and counties often contract out with other governments for services exhibiting high levels of asset specificity to capitalize on economies of scale from neighboring governmental entities. The results shown in table 4.4 - regression 3 provide support for this line of reasoning. In regression 3, I exclude all cases of contracting with “other governments” and find that the resulting coefficient for the asset specificity variable is now negative (as expected) and statistically significant. This finding suggests that contracting with other governments is driving the positive coefficient for asset specificity in regression 1. As expected, the core capability and ambiguity variables have a negative impact on the propensity of a government to contract out (see hypotheses 2 and 3); and supply certainty has a positive impact (hypothesis 4). The manager variable is borderline significant, but in the hypothesized direction (positive) as stated in hypothesis 5.
Table 4.4  Step 1 – Logit Model Predicting Contracting Out

<table>
<thead>
<tr>
<th></th>
<th>(1) Logit Estimates</th>
<th>(2) Marginal Effects (Regression 1)</th>
<th>(3) Logit Estimates (without other gov.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Governance Costs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asset Specificity</td>
<td>0.107 [7.19]**</td>
<td>0.024 [4.44]**</td>
<td>-0.068</td>
</tr>
<tr>
<td>Supply Certainty</td>
<td>1.534 [12.74]**</td>
<td>0.062 [9.67]**</td>
<td>1.196</td>
</tr>
<tr>
<td>Ambiguity</td>
<td>-0.138 [9.22]**</td>
<td>-0.031 [6.14]**</td>
<td>-0.105</td>
</tr>
<tr>
<td><strong>Capabilities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Core Capability</td>
<td>-0.385 [18.48]**</td>
<td>-0.085 [15.39]**</td>
<td>-0.354</td>
</tr>
<tr>
<td><strong>Form of Government</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manager</td>
<td>0.138 [1.79]</td>
<td>0.022 [2.54]*</td>
<td>0.211</td>
</tr>
<tr>
<td><strong>Control Variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Services</td>
<td>0.027 [7.62]**</td>
<td>0.006 [4.79]**</td>
<td>0.018</td>
</tr>
<tr>
<td>Per capita Revenues</td>
<td>-0.022 [0.21]</td>
<td>-0.005 [-0.401]</td>
<td>0.039</td>
</tr>
<tr>
<td>Population (10,000)</td>
<td>0 [0.02]</td>
<td>0 [1.21]</td>
<td>0.002</td>
</tr>
<tr>
<td>County</td>
<td>0.059 [0.55]</td>
<td>0.013 [-0.80]</td>
<td>0.079</td>
</tr>
<tr>
<td>Central</td>
<td>-0.175 [2.10]*</td>
<td>-0.039 [-0.41]</td>
<td>-0.036</td>
</tr>
<tr>
<td>Observations</td>
<td>34529</td>
<td>30439</td>
<td></td>
</tr>
<tr>
<td>Adj. Count R^2</td>
<td>0.201</td>
<td>0.18</td>
<td></td>
</tr>
</tbody>
</table>

* Includes State Fixed Effects
Robust z statistics in brackets
* significant at 5%; ** significant at 1%

One of the general propositions discussed in chapter three is that the core capability variable is the primary determinant of whether a service remains in the hierarchy. As table 4.4 illustrates, the core capability has the largest marginal effect on whether a government will
contract out or not. Figure 4.3 provides a graphical illustration of the comparative impacts of each of the service- and market-level variables. It is easy to see by the relative slopes of the curves that core capability and supply certainty are the most important predictors in terms of magnitude.

Figure 4.3 Probabilities of Contracting Out – Service and Market Variables

To further test the impact of management on whether a city or county will contract out, I created a series of interactions between the manager variable and each of the primary independent variables. As table 4.5 illustrates, the interaction between manager and asset specificity indicates that city and county manager form of government has a conditioning effect on the positive impact of asset specificity alone, suggesting that professional city and county managers may be more skilled at assessing governance costs than other local officials. In a
finding that adds additional support to Goldsmith’s yellow pages test, it appears that the city or county manager form of government intensifies the positive effect of supply certainty. While borderline statistically significant, the core capability interaction actually has a positive effect suggesting that city and county managers may actually explore contracting core capabilities more than other forms of local government. One possible explanation for this finding is that city and county managers are less risk averse than their counterparts in mayoral forms of government.

Table 4.5 Logit Model Predicting Contracting Out – Interaction Variables

<table>
<thead>
<tr>
<th></th>
<th>Contracted out</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset Specificity</td>
<td>0.151</td>
</tr>
<tr>
<td></td>
<td>[6.12]**</td>
</tr>
<tr>
<td>Supply Certainty</td>
<td>1.132</td>
</tr>
<tr>
<td></td>
<td>[6.16]**</td>
</tr>
<tr>
<td>Ambiguity</td>
<td>-0.114</td>
</tr>
<tr>
<td></td>
<td>[4.28]**</td>
</tr>
<tr>
<td>Core Capability</td>
<td>-0.435</td>
</tr>
<tr>
<td></td>
<td>[12.29]**</td>
</tr>
<tr>
<td>Manager</td>
<td>-6.768</td>
</tr>
<tr>
<td></td>
<td>[2.89]**</td>
</tr>
<tr>
<td>Manager*Asset Specificity</td>
<td>-0.071</td>
</tr>
<tr>
<td></td>
<td>[2.33]*</td>
</tr>
<tr>
<td>Manager*Supply Certainty</td>
<td>0.664</td>
</tr>
<tr>
<td></td>
<td>[2.97]**</td>
</tr>
<tr>
<td>Manager*Ambiguity</td>
<td>-0.03</td>
</tr>
<tr>
<td></td>
<td>[0.94]</td>
</tr>
<tr>
<td>Manager*Core</td>
<td>0.083</td>
</tr>
<tr>
<td></td>
<td>[1.93]</td>
</tr>
</tbody>
</table>

Observations: 34529

Includes control variables
Robust z statistics in brackets
* significant at 5%; ** significant at 1%

Table 4.6 presents the results for step two in the decision-making process. As expected, the ambiguity variable is statistically significant when comparing provision by a nonprofit to a for-profit firm or another governmental entity. Figure 4.4 aptly illustrates this phenomenon. As
services become more ambiguous, there is a sharp tradeoff between for-profit and other governmental provision and provision by nonprofit organizations.

Table 4.6  Step 2 – Multinomial Logit Predicting Sector (Base case – Nonprofit Org.)

<table>
<thead>
<tr>
<th></th>
<th>Other Government</th>
<th>For-Profit Firm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Governance Costs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asset Specificity</td>
<td>0.551</td>
<td>0.066</td>
</tr>
<tr>
<td>[11.83]**</td>
<td>[1.42]</td>
<td></td>
</tr>
<tr>
<td>Supply Certainty</td>
<td>1.667</td>
<td>-0.178</td>
</tr>
<tr>
<td>[6.88]**</td>
<td>[0.69]</td>
<td></td>
</tr>
<tr>
<td>Ambiguity</td>
<td>-0.657</td>
<td>-0.736</td>
</tr>
<tr>
<td>[15.15]**</td>
<td>[15.95]**</td>
<td></td>
</tr>
<tr>
<td><strong>Capability</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Core Capability</td>
<td>0.216</td>
<td>0.294</td>
</tr>
<tr>
<td>[4.44]**</td>
<td>[6.15]**</td>
<td></td>
</tr>
<tr>
<td><strong>Form of Government</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manager</td>
<td>-0.219</td>
<td>-0.189</td>
</tr>
<tr>
<td>[1.42]</td>
<td>[1.42]</td>
<td></td>
</tr>
<tr>
<td><strong>Control Variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Services</td>
<td>0.01</td>
<td>-0.01</td>
</tr>
<tr>
<td>[1.67]</td>
<td>[1.76]</td>
<td></td>
</tr>
<tr>
<td>Per Capita Revenues</td>
<td>-0.374</td>
<td>-0.072</td>
</tr>
<tr>
<td>[2.16]*</td>
<td>[0.52]</td>
<td></td>
</tr>
<tr>
<td>Population (10,000)</td>
<td>-0.002</td>
<td>0.003</td>
</tr>
<tr>
<td>[0.39]</td>
<td>[0.73]</td>
<td></td>
</tr>
<tr>
<td>County</td>
<td>-0.424</td>
<td>-0.583</td>
</tr>
<tr>
<td>[2.31]*</td>
<td>[3.58]**</td>
<td></td>
</tr>
<tr>
<td>Central</td>
<td>-0.64</td>
<td>-0.261</td>
</tr>
<tr>
<td>[4.67]**</td>
<td>[2.10]*</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-9.756</td>
<td>14.963</td>
</tr>
<tr>
<td>[3.92]**</td>
<td>[5.56]**</td>
<td></td>
</tr>
<tr>
<td><strong>Observations</strong></td>
<td>11938</td>
<td>11938</td>
</tr>
</tbody>
</table>

* Includes State Fixed Effects
Robust z statistics in brackets
significant at 5%; ** significant at 1%
Figure 4.4  Contracting Partners – Impact of Ambiguity

Figure 4.5  Contracting Partners – Impact of Asset Specificity
Interestingly, asset specificity and supply certainty also are positive predictors of using another government when compared to nonprofit organizations. As discussed earlier, this is due to local governments’ reliance on other governments to achieve economies of scale for large asset specific services like utilities or mass transit systems (see Ferris and Graddy 1986 & 1994). As figure 4.5 shows, increases in asset specificity result in less for-profit provision and more provision by other governments. It appears that local governments are protecting against the potential that a for-profit firm will achieve monopoly status. Instead, local governments rely on other local governments with similar incentive structures and goals.

The core capability variable is statistically significant in the model (see table 4.6). In other words, governments are more likely to provide a core capability directly or by another
government than to provide it using a nonprofit organization. However this finding is somewhat misleading. As figure 4.6 illustrates, changes in the magnitude of core capability have relatively little impact on how the service is provided. Said differently, once a capability is contracted out (step 1), the core capability attribute no longer plays in important role in make-or-buy decisions.

Summary

In this chapter, I provide empirical support for two of my main research questions: what factors influence whether a service is contracted out; and what factors influence to whom the service is contracted? Specifically, I find evidence that local governments protect core capabilities and consider governance costs when contracting out. Moreover, I find that the most important variable – at least in terms of magnitude – is the core capability variable. The second important finding is that service ambiguity is the primary influence on step 2 of the contracting decision. As performance becomes more difficult to measure, managers increasingly rely on nonprofit firms. These findings have important implications for public administration scholars. First, the findings suggest that some services may simply be “off the table” when contracting decisions commence. Second, understanding and identifying the additional costs associated with contract governance may be every bit as important as the production costs and is an essential skill for local public managers.

In the next chapter, I extend these ideas to contractual decisions – specifically, decisions governing contract type and duration. I use Federal EPA contract data to test the proposition that governance costs will influence how governments choose to structure contractual relationships in certain situations. Unlike the situation framing the analysis in chapter four, in chapter five the decision to contract has already been made. Thus the decisions focus on which type of contract to use, and how long the contract should last. Each of these decisions is essentially a make-or-
buy decision in and of itself since the outcome of each will have a bearing on whether the relationships more mirror hierarchy or, instead, the market.
CHAPTER 5

CONTRACT DESIGN DECISIONS: AN EMPIRICAL ANALYSIS OF FEDERAL CONTRACT CHARACTERISTICS

One aspect of public sector contracting which has been largely overlooked in the public administration literature is that contract design matters. This is not the case in the economics and business literatures, where numerous studies have examined the factors influencing contract length (Joskow 1987; Crocker and Masten 1988; Saussier 1999) and contract type (Adler et al. 1998; Adler and Scherer 1999). In public administration, the discussion has centered generally on whether contracting improves efficiency when compared to direct public provision; or whether contracting is an appropriate service delivery tool in our system of governance (see discussion in chapter one). What is missed in these discussions is that there is considerable variance in how contracts are structured once the decision has been made to contract out, and that these design decisions may have a considerable impact on the contracting relationship. Every time a public manager decides to contract for a service, he or she has the ability to structure the relationship to resemble hierarchy or the market by simply extending the length of the contract or choosing between different contract types.

In chapter four, I focused on a local government’s decision on whether to contract out an array of services and to whom. In this chapter, I take a different approach and examine cases where the decision to contract has already been made in an effort to determine which factors influence how individual contracts are structured. This approach is predicated on the knowledge that contracts are not homogenous instruments of service delivery, but rather they exhibit unique

24 See Shetterly 2000 for a notable exception.
characteristics and varying nuance depending on the circumstances of the interaction. As the preceding paragraph suggests, contracts often vary in type and length (among other qualities), with some (cost-plus) resembling hierarchy due to the contractual safeguards and risk sharing built into the relationship, and others (fixed price) resembling the market due to the built-in incentive for agents to save on costs. Accordingly, contracting out is the equivalent to an intermediate, or hybrid governance structure falling somewhere in-between hierarchy and market governance. 25

I argue that contract design choices, like the overall contracting decision, are influenced by the attributes of the transaction, particularly those attributes leading to increased governance costs. But unlike the analysis in chapter four where the analysis focused on broad service delivery decisions, in this chapter the contract is the unit of analysis. Consequently, I am able to utilize information about the contractor and describe in general terms its relationship with the government. It is reasonable to assume that relational characteristics which have developed over time between the government and its preferred pool of contractors will impact contract decisions. Organization theorists have long held that relationships and social context have an important influence on economic exchanges (Granovetter 1985; Gulati 1995). While economists have generally been more reluctant to examine the effect of relationships on contract decisions, there has been a recent surge in both theoretical (Gibbons 2005; Baker, Gibbons, and Murphy 2002) and empirical research (Poppo and Zenger 2002; Corts and Singh 2003; Kalnins and Mayer 2004) on the topic. In addition to governance costs and relational characteristics, I argue that the incentive structures associated with different types of organizations will have an impact on contract decisions. For example, nonprofit organizations are more incentive compatible with

25 As table 3.1 from chapter three illustrates, the difference between short-term, fixed price contracts and long-term cost-plus contracting is what distinguishes bilateral governance and arms-length contracting identified in quadrants III and IV, respectively.
public organizations than for-profit firms. By contracting with nonprofit firms, the government may be able to add more flexibility to the contract without increasing the potential for opportunistic behavior.

To address this question empirically, I examine a set of recently awarded contracts from the U.S. Environmental Protection Agency (hereafter EPA). The data set includes a mixture of contract types (cost-plus and fixed price) and lengths, as well as various other variables which are hypothesized to affect the aforementioned contract terms. The contracts govern a wide variety of exchanges ranging from highly complex engineering consultation to relatively simple repair or construction contracts. In addition, I include data on whether the contractor has had previous and repeated contracts with the EPA, as well as information on whether the contractor is a nonprofit organization or a for-profit firm.

This chapter is organized as follows. The next section briefly reviews the literature on the differences between the two different contracts prominently used in federal contracting and the impact of exchange attributes on contract length. The third section describes the factors influencing contract design decisions and the empirical hypotheses to be tested followed by a brief discussion of contracting at the EPA and the data to be used in the analysis. The remaining sections are dedicated to describing the models, methods, and results of the analysis. I finish the chapter with a brief summary of the major findings as well as the implications for public managers and future research.

**Overview of Contract Choices**

In general, there are two important choices which determine whether a contract exhibits characteristics resembling hierarchy or characteristics more like market transactions – contract length and contract type. Consequently, these contract design decisions are an extension of the
make-or-buy decision in the public sector. My general proposition is that public managers identify important attributes surrounding an interaction with a specific contractor and decide how to structure the contract accordingly. In this section, I describe these two important choices in more detail and provide some initial rationales for understanding when and why a given choice will be made based on theoretical and empirical research from economics. It is important to note that choices about contract length and type are not entirely different than choosing to provide a service inside the hierarchy or contracting it out. As with the overall contracting decision, decisions about contract design will result in governance arrangements with unique properties aimed at protecting against opportunism.

**Contract length**

Transaction cost economists typically view contract length as a measure of integration; the longer the contract term, the more integrated the transaction (Williamson 1996). Similar to hierarchy, long-term contracts allow the government to protect against potential opportunism when there is likely to be costly and frequent renegotiation resulting from the attributes of the exchange (Klein, Crawford and Alchian 1978). By increasing the length of the contract and establishing the conditions for an on-going relationship *ex ante*, the government is able to reduce the need for adaptation *ex post*. The longer the contract, the more contractual safeguards are built into the relationship and therefore, the more the exchange resembles hierarchy (Crocker and Masten 1988; Saussier 1999).

Numerous studies have tested the impact of transaction costs on the contract durations. In a seminal study of contracts between coal mines and coal fired electricity generating facilities, Joskow (1987) found that distance between a coal mine and the generating facility – a form of asset specificity – had a positive effect on the length of the contract. In a similar study of natural
gas fields, Crocker and Masten (1988) found that the contract durations were significantly shorter when the field was served by multiple producers and pipelines; whereas those fields served by a single provider had to guard against potential opportunism which resulted in longer contract terms, on average. Generally speaking, these findings (among other studies) suggest that long-term contracts are used when the potential for increased governance costs is high (see Richman and Macher 2006).

**Contract Type**

Generally speaking, there are two types of contracts prevalent in the public sector – fixed price and cost-plus contracts. A fixed price contract is defined as one “in which the contractor agrees to deliver a specific level and quality of service for a set price” (Valente and Manchester 1984: p.3). In fixed price contracts, the details of the exchange are explicitly stipulated in the contract *ex ante*. Because of the detailed specifications in the contract, fixed price contracts are typically inflexible and require formal renegotiations of terms if a change is required – which is often costly (Corts and Singh 2004). The key to understanding fixed price contracts is that the price is not adjusted once the contract is awarded, regardless of the contractor’s actual costs. As a result, the contractor assumes all of the risk in the exchange once the contract is awarded. If, for example, a contractor is awarded a fixed price contract at a price of $1,000 but it actually ends up costing the contractor $1,200 to fulfill the contract, the contractor loses the $200 in cost overruns. To avoid such overruns, the contractor has the incentive to fulfill the contract as efficiently and cost effectively as possible.

Contrarily, cost-plus contracts are simpler to write and specifications are less explicit which adds more flexibility to the agreement; “however, this flexibility comes at the cost of introducing a moral hazard problem, as the agent may bill the principal for excessive materials
and labor” (Corts and Singh 2004: p. 231). The potential for opportunism exists in cost-plus contracts because the government agrees to reimburse the contractor for all costs that are incurred throughout the duration of the contract (Adler et al. 1998). Since the government is increasing the likelihood of a moral hazard problem, it assumes some of the risk along with the contractor.

Of the two contract types, cost-plus contracts more closely resemble hierarchy. As Goldberg and Erickson (1987) assert, cost-plus contracts stop “short of full, formal vertical integration” (p. 370). As with hierarchy, cost-plus contracts have been hypothesized to be more commonly used for transactions where there is considerable uncertainty, complexity, and asset specificity surrounding the exchange; whereas fixed price contracts are more likely to be used when the contract stipulations and future contingencies are easily written into the contract during the initial negotiation. In the next section I discuss in detail how governance costs, relationships, and organizational characteristics impact contract design decisions.

**Factors Influencing Contract Design Decisions**

Similar to the analysis conducted in chapter four, I hypothesize that governance costs will influence contract design choices. Generally speaking, I argue that as governance costs increase, so too will the likelihood of choosing a longer term contract and/or a cost-plus contract. In addition, I argue that nonprofit organizations, due to their incentive compatibility with public organizations, will be more likely to receive cost-plus contracts since the government will be less concerned about opportunistic behavior resulting from moral hazard problems. Finally, I argue that economic exchanges are not devoid of social context. Indeed, the government may be more willing to enter into long-term cost-plus contracts with those contractors with which it has had
repeated and ongoing interactions. In the next section, I describe the different governance costs which are hypothesized to affect contract design choices, beginning with asset specificity.

**Governance Costs**

Asset-specific investments are argued to be the primary determinant of the length of contracts (Klein, Crawford and Alchian 1978). Asset specific investments are those unique investments which require added contractual safeguards due to their limited value in another use. As a governance mechanism, hierarchy offers the most protection due to its low-powered incentive structure and considerable administrative controls; however long-term contracting is also an important way for governments to protect these investments. As noted in chapter three, asset specificity is not a homogenous concept. Williamson (1996) describes at least six different types of specific investments which may impact make-or-buy decisions, most of which relate to investments in physical plants, specialized materials, or the proximity of production facilities to suppliers. Given its mission as a regulatory agency, it is unlikely that these types of investments are important to the relationships between the EPA and its contractors. Instead, I will focus on a different type of asset specificity relating to mutual dependence -- dedicated asset specificity.

**Dedicated Asset Specificity**

Dedicated asset specificity is defined as a generalized investment made by the supplier that would not be made if there was not an assurance of a continual relationship with the buyer. If the relationship was to end suddenly and unexpectedly, the supplier would likely be left with significant excess capacity (Joskow 1987). While this definition focuses primarily on the seller, Joskow points out that there is also an impact on the buyer due its reliance on a “single provider for a large volume of an input and [the buyer] may find it difficult and costly to quickly replace these supplies” (p. 170). In each case, longer term contracts can protect against changes in
behavior on the part of both organizations due to the expected continuation of the relationship into the foreseeable future. Similarly, the increased risk of opportunistic behavior associated with asset specific investments may increase the likelihood of a government using a cost-plus contract (see Adler et al. 1998). In fixed price contracts, such protections would have to take the form of renegotiation; whereas in cost-plus contracts the protection is provided through more flexibility in contract terms. As the necessity for protection increases – when assets are highly dedicated – constant renegotiation would be a costly alternative.

\[ H_{AS1}: \text{Increases in dedicated asset specificity will increase the duration of contracts.} \]

\[ H_{AS2}: \text{Increases in dedicated asset specificity will increase the likelihood of a cost-plus contract.} \]

Complexity

In chapter three, I discussed how measurement problems typically increase the probability of higher governance costs. Complexity is a form of ambiguity found in many public sector contracts (Shetterly 2000). Recent theoretical work by Bajari and Tadelis (2001) suggests that complexity is an important determinant of contract type. Fixed price contracts present contractors with the incentive to save on costs since they bear the full cost of contract overruns. Consequently, when there is considerable uncertainty and complexity inherent to the contractual relationship, contractors may petition for modifications. Expensive renegotiations often render fixed price contracts a costly alternative. In cost-plus contracts, the government assumes part of the risk and the contractor has less incentive to control costs, but the flexibility built into the relationship presumably saves on subsequent renegotiation costs.

\[ H_{\text{complexity1}}: \text{Increases in the complexity of a service will increase the likelihood of a using a cost-plus contract.} \]
$H_{\text{complexity}2}$: Increases in the complexity of a service will increase the length of the contract.

Volatility

A stable supply of potential contractors for a particular service will likely impact the willingness of a government to contract out a service. By this same logic, the number of potential suppliers available to a government agency is likely to impact the design of the contract. Competition in the bidding process guards against opportunism since there is an ample supply of replacement contractors in the marketplace (see Crocker and Matsen 1988). Moreover, it is possible that the more bids for a contract will provide the government with more information about the true cost of a service. Thus, the government may be more willing to rely on incentives stipulated in the contract to ensure cost effectiveness and quality. Knowing this, the government may be more likely to use a fixed price contract with shorter contract length.

$H_{\text{volatility}1}$: Increases in supply volatility will increase the likelihood of a using a cost-plus contract.

$H_{\text{volatility}2}$: Increases in supply volatility will increase the length of the contract.

Organization Type

The contractor’s organization type is an important factor in contract design decisions due to the different incentive structures inherent to different types of organizations. The incentive for for-profit firms to cut costs at the expense of quality is a potential risk in government contracting (Hart et al. 1997); whereas nonprofit firms often share similar goals and missions as public sector organizations – a circumstance which potentially allows the government to assume more risk without sacrificing public sector goals (Besley and Ghatak 2005; Brown and Potoski 2003a). Cost plus contracting, therefore, may be more incentive compatible with nonprofit organizations.
In effect, by choosing to contract with a nonprofit organization and using a cost-plus contract, the government is able to reduce the likelihood of increased governance costs even more than using a cost-plus contract alone.

\[ H_{\text{nonprofit}}: \text{Nonprofit organizations are more likely to receive cost-plus contracts.} \]

**Relational Governance**

As Kalnins and Mayer (2004) suggest, there are several mechanisms by which the strength of the relationship between the government and a contractor may impact the design of the contract. First, the government may be more willing to trust the contractor since it has been able to honor previous commitments (see Gulati 1995). Second, since the government and the contractor have some past experience working together, it is possible that informal norms have emerged to replace the need for more formal governance. Indeed, relational governance is characterized by more flexible, open-ended relationships where collaboration and mutual planning override narrow objectives and formal sanctions (Fernandez 2004). Kalnins and Mayer (2004) find empirical support for the proposition that repeated interaction between contracting partners will lead to more cost-plus contracting (see also Corts and Singh 2004).

Similarly, it is reasonable to extend this logic to decisions about contract length. As a contractor becomes a trusted partner of the government and more relational style governance builds, there will be less need for renegotiation. Instead of short term, formal contracts, many potential problems are addressed informally through joint problem solving and planning (see Zaheer and Venkatraman 1995).

\[ H_{\text{relational1}}: \text{Repeated contracting between the government and a contractor increases the likelihood of a cost-plus contract.} \]

\[ H_{\text{relational2}}: \text{Repeated contracting between the government and a contractor increases the length of a contract.} \]
Data and Measures

The data for this study are drawn from three sources. The primary source is the Environmental Protection Agency’s (hereafter EPA) Active Contract Database. As a regulatory agency, the EPA is not generally viewed as a major contracting agency when compared to other federal agencies like the Defense Department or the Department of Energy. Despite this fact, in 2006 the EPA contracted for over $100 million in goods and services with outside organizations. Moreover, EPA contracts for a wide range of services. In table 5.1, I illustrate the general variety of EPA contracts using North American Industry Classification System (hereafter NAICS) codes. In addition to the EPA’s contract database, I draw data from the Federal Procurement Data System (FPDS) and Dunn and Bradstreet’s Million Dollar Database.

Table 5.1  Types of Services Contracted Out by the EPA

<table>
<thead>
<tr>
<th>NAICS Code*</th>
<th>General Description of Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>Construction</td>
</tr>
<tr>
<td>48</td>
<td>Transportation</td>
</tr>
<tr>
<td>49</td>
<td>Warehousing</td>
</tr>
<tr>
<td>51</td>
<td>Information and Data Processing</td>
</tr>
<tr>
<td>54</td>
<td>Professional, Scientific, and Technical Services</td>
</tr>
<tr>
<td>56</td>
<td>Administrative and Support, Waste Management and Remediation</td>
</tr>
<tr>
<td>61</td>
<td>Educational Services</td>
</tr>
<tr>
<td>81</td>
<td>Other Services -- Automotive Repair and Maintenance</td>
</tr>
</tbody>
</table>

* The first two numbers of the NAICS define the general category

For the purposes of this study, I use the new contracts issued in fiscal year 2006 (hereafter FY2006) by the EPA’s two main procurement divisions located in Cincinnati and Washington, D.C. There are two primary reasons for including only new contracts. First, the data availability is often spotty for older contracts since the federal government has only recently mandated that agencies make the contracting process more transparent and open to the public by
making electronic data available. Second, one of the main goals of this study is to examine the length of contracts. By studying a cross section of all contracts, I would have to correct for the bias toward long-term contracts since many shorter term contracts will have since expired and will not be included in the sample. Since I am only using new contract awards, I am examining the initial contract period negotiated by the parties. It is possible that many of these contracts will be cancelled or not reach the full length as stipulated, but since I am interested in how contracts are designed to share risk and protect against opportunism, this is not of major importance.

In all, there were 126 new contracts issued by the procurement divisions in FY2006. The contracts range from simple repair contracts to highly complex contracts governing engineering projects. The contractor pool includes small organizations – including one with a single employee – as well as large mega-corporations with over 78,000 employees. In terms of revenues, the smallest contractor generated $20,000; whereas the largest corporation had revenues in excess of $14 billion.

**Dependent Variables**

I use three dependent variables in my analysis. First, the dichotomous variable $\textit{cost-plus}$ (cost-plus=1) measures whether the contract is cost-plus or not. As table 5.2 illustrates, nearly one in three contracts is a cost plus contract. The second dependent variable, $\textit{length}$, is a measure of the contract’s length (in days) as stipulated in the initial award. The average length of EPA contracts awarded in FY2006 is approximately one and a half years. Finally, I measure those contracts considered to be long-term by including the dichotomous variable $\textit{long-term}$ (long-term=1). Contracts with lengths one standard deviation above the mean (1074 days) are classified as long-term contracts (nearly 12 percent of the sample).
Governance Costs

I include three general types of governance costs in my analysis, asset specificity, volatility, and complexity. As noted in the previous section, asset specificity takes on many different forms. In this study, I include a measure for dedicated asset specificity (hereafter, simply asset specificity) which is constructed by dividing the current value of the contract by the total revenues of the contractor in the year of the contract. By doing so, I am able to isolate the percentage of the firms “assets” dedicated to the EPA contract.

Just as supply volatility is hypothesized to have an impact on the decision to contract out or not (chapter four), volatility is likely to impact contract design choices. To account for the supply of contractors in the market, I include the variable bids which measures the total number of bids received for the contract. Those contracts currently receiving a substantial number of bids are likely to have a stable supply of suppliers in the future and therefore have an affect on how the current contract is structured.

Finally, to account for the complexity of the service, I include the variable technical consulting. I construct the variable by combining the contracts categorized as environmental consulting services, engineering services, or other scientific or technical services by the NAICS classification system. These types of contracts are likely to encompass a combination of technical complexity and uncertainty since the nature of scientific consulting work is uncovering information and adding clarity to uncertain situations – something nearly impossible to write into a contract, ex ante. For example, many science and engineering consultants work on site investigations to determine the extent of environmental degradation. The complexity in this type of work often stems from presence of multiple and interacting systems. For example, biological,
chemical, and physical factors may all have an influence on the relative health of a property; thus rendering current work more complex and the outcome less certain.

**Organization Type**

I hypothesize that nonprofit organizations will more likely receive cost-plus contracts from the EPA due their incentive structures. I include the dichotomous variable, *nonprofit* (nonprofit=1), to differentiate organization type. As table 5.2 shows, nonprofits comprise nearly one in ten contracts in FY2006.

**Relational Governance**

To capture the relational factors influencing contract decisions, I include a *recent contracts* variable which measures the total number of contracts – in addition to the current contract – between the contractor and the EPA in FY2005 and FY2006. *Recent contracts* is a count variable ranging from 0 to 6 (see table 5.2).

**Control Variables**

Finally I include two control variables in the analysis. First, I include the variable, *Cincinnati*, to distinguish between EPA’s two procurement divisions. It is possible that contracting decisions vary between the divisions due to in-house procedures and preferences. All contracts originating in the Cincinnati procurement division are coded with a one. Second, I include *employees* to control for the size of the contractor’s organization. It may be that larger firms have more power in contract negotiations which may in turn influence the terms of the contract beyond what has already been controlled for in the model.

---

26 I combine educational institutions with nonprofits.
Table 5.2  Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length (days) (^a)</td>
<td>126</td>
<td>524.071</td>
<td>550.276</td>
<td>12</td>
<td>3652</td>
</tr>
<tr>
<td>Cost-plus (^a)</td>
<td>126</td>
<td>0.286</td>
<td>0.454</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Long-term (^a)</td>
<td>126</td>
<td>0.119</td>
<td>0.325</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Organization type</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonprofit (^a)</td>
<td>126</td>
<td>0.095</td>
<td>0.271</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Governance Costs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical consulting (^a)</td>
<td>126</td>
<td>0.238</td>
<td>0.428</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Bids (^b)</td>
<td>126</td>
<td>2.887</td>
<td>1.294</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Asset specificity (^a, c)</td>
<td>125</td>
<td>0.090</td>
<td>0.180</td>
<td>5.73E-06</td>
<td>0.913</td>
</tr>
<tr>
<td><strong>Relational governance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recent contracts (^b)</td>
<td>126</td>
<td>1.714</td>
<td>1.165</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td><strong>Control</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cincinnati (^b)</td>
<td>126</td>
<td>0.714</td>
<td>0.454</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Employees (^a, c)</td>
<td>126</td>
<td>2647.589</td>
<td>8170.873</td>
<td>1</td>
<td>78000</td>
</tr>
</tbody>
</table>

Source:
- a – Federal Procurement Data System
- b – EPA active contract database
- c – Dunn and Bradstreet’s Million Dollar Database

**Model and Method**

This study focuses on two contract design decisions. It is possible that these decisions are made sequentially. In this case, a manager decides to offer a cost-plus contract and then determines – independent of the first decision – the length of the contract. It is also possible, however, that a manager will makes these decisions simultaneously. Simultaneous decision making does not suggest that the manager makes both decisions at some exact moment in time, but rather that each decision is made with full knowledge of the other decision. In other words, the decisions are not independent of each other. I explore each possibility in turn and offer an econometric approach for each.
The most straightforward way to model the sequential approach is to assume complete independence and model the decisions separately. In this scenario, the decision about contact length would be analyzed using a standard OLS regression since the length variable is continuous.\(^{27}\) According to my hypotheses, contract length is a function of governance costs, relational governance and a vector of control variables. I use a probit model to analyze the factors influencing contract type since cost-plus is dichotomous (Long 1997). According to my hypotheses, the likelihood of seeing a cost-plus contract is a function of governance costs, relational governance, organization type, and a vector of controls. More formally,

\[
\text{Length} = f [\text{governance costs, relational governance, controls}]
\]

\[
\text{Cost-plus} = f [\text{governance cost, organization type, relational governance, controls}]
\]

A second modeling possibility, assuming sequential decision making, is to acknowledge the possibility that the decision to use a cost-plus contract will have an independent effect on the length of a contract. To account for this, I include a specification where the cost-plus variable is treated as an exogenous independent variable in the contract length specification.\(^{28}\)

\[
\text{Length} = f [\text{cost-plus, governance costs, relational governance, controls}]
\]

\(^{27}\) The contract length variable is not normally distributed. Instead, contract length represents a duration variable where the distribution is exponential. For duration variables, survival analysis techniques are appropriate. However, given the relative ease of interpretation, I include the results of the specification using a Cox Hazard Model in the Appendix (table A.4) for comparison and rely on the OLS estimates.

\(^{28}\) In reality, the cost-plus variable is endogenous to contract length since they are both choice variables. To account for this likelihood, I include a two-stage least squares estimation in the Appendix (table A.5) for comparison purposes. In two-stage least squares, the first stage predicts the endogenous variable using the exogenous variables in the model. In the second stage, the predicted values for the endogenous variable are used along with the exogenous variables to predict the second stage dependent variable – in this case, contract length. One flaw in this strategy is that the endogenous variable in the first stage, cost-plus, is not continuous. Therefore, I am reluctant to include this model as a focal point in my analysis.
A different approach altogether is to assume simultaneous decision making. In this case, decisions about contract type and contract length are not made independent of each other. To account for this possibility, I use bivariate probit regression. By using a bivariate probit, I allow the dependent variables to vary jointly. In econometric terms, the system of equations controls for the likely endogeneity between these two related choices (Greene 2000). A cost associated with this approach is that it requires two dichotomous dependent variables; thus I replace the length variable with the dummy variable, long-term. Since a dummy variable is a blunt measure when compared to a continuous variable, I am losing some information by switching the two. More formally:

\[
Long\text{-term} = f \{governance \text{ costs, relational governance, controls}\} + u_1 \\
Cost\text{-plus} = f \{governance \text{ cost, organization type, relational governance, controls}\} + u_2
\]

Where the Covariance \((u_1, u_2) \neq 0\)

Results

The results of the analysis provide empirical support for the majority of my hypotheses. Table 5.3 shows the results for the specifications where sequential decision-making was assumed. Each of the regressions in table 5.3 is significant and fits the data reasonably well (see R-squared statistics). In regression 1, I find support for my hypotheses that the asset specificity and technical consulting variables have a positive effect on contract length. I find no statistically
significant relationship between the bids variable and contract length.\textsuperscript{29} Somewhat surprisingly, and contrary to my hypothesis, I find that the recent contracts variable actually has a significant negative effect on contract length.

Table 5.3, Regression 2 shows the results for the factors influencing decision on contract type. Using a probit model, I find that the asset specificity and technical consulting variables have the hypothesized positive effect on the likelihood of using a cost-plus contract. The bids variable, while not significant at the 5 percent level, is significant at the 10 percent level and in the predicted direction (negative) – the more bidders for a project, the less likely the EPA is to use a cost-plus contract. As expected, nonprofit organizations and those contractors with more recent contracts with the EPA are more likely to receive cost-plus contracts. This suggests that as relationships build between the EPA and specific contractors, the EPA may be more willing to dispense with formal incentive driven contracts and replace them with more relational style governance.

In table 5.3, regression 3, I include the cost-plus variable as an independent variable predicting contract length. As the results indicate, cost-plus is not a significant predictor of contract length, nor are the other independent variables appreciably affected by its inclusion in the specification. This result suggests that cost-plus is not a primary determinant of contract length.\textsuperscript{30} To add validity to this finding, I ran a difference in means test on contract length by contract type. While cost-plus contracts are longer than fixed price contracts on average (605 days to 491 days, respectively), the difference is not statistically significant (t = -1.04).

\textsuperscript{29} For comparison purposes, the results of Regression 1 are similar to the results of the Cox Hazard Model reported in Appendix table A.4. It is important to remember that estimates in survival analysis are predicting the likelihood of failure; thus the signs are the opposite of those in an OLS model predicting duration. For example, the negative asset specificity coefficient is associated with a lower probability of failure – in this case a shorter contract.

\textsuperscript{30} I ran a two-stage least squares estimation treating cost-plus as endogenous (Appendix table A.5). The cost-plus variable is borderline statistically significant.
Table 5.3   Results of OLS and Probit Regressions (Length and Cost-plus)

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OLS</td>
<td>Probit</td>
<td>OLS</td>
</tr>
<tr>
<td>Length Cost-plus</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost-Plus</td>
<td>12.404</td>
<td>[0.11]</td>
<td></td>
</tr>
<tr>
<td>Governance Costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asset specificity</td>
<td>67.083</td>
<td>0.772</td>
<td>66.475</td>
</tr>
<tr>
<td></td>
<td>[3.53]**</td>
<td>[2.63]**</td>
<td>[3.34]**</td>
</tr>
<tr>
<td>Bids</td>
<td>-31.849</td>
<td>-0.335</td>
<td>-31.017</td>
</tr>
<tr>
<td></td>
<td>[0.91]</td>
<td>[1.84]</td>
<td>[0.86]</td>
</tr>
<tr>
<td>Technical consulting</td>
<td>687.488</td>
<td>1.084</td>
<td>684.397</td>
</tr>
<tr>
<td></td>
<td>[6.30]**</td>
<td>[2.67]**</td>
<td>[6.05]**</td>
</tr>
<tr>
<td>Organization Type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonprofit</td>
<td>1.399</td>
<td></td>
<td>[2.94]**</td>
</tr>
<tr>
<td>Relational Governance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recent Contracts</td>
<td>-118.808</td>
<td>0.543</td>
<td>-120.219</td>
</tr>
<tr>
<td></td>
<td>[3.12]**</td>
<td>[2.97]**</td>
<td>[2.98]**</td>
</tr>
<tr>
<td>Controls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cincinnati</td>
<td>151.866</td>
<td>-0.786</td>
<td>154.384</td>
</tr>
<tr>
<td></td>
<td>[1.61]</td>
<td>[2.43]**</td>
<td>[1.58]</td>
</tr>
<tr>
<td>Employees</td>
<td>0.006</td>
<td>0</td>
<td>0.005</td>
</tr>
<tr>
<td></td>
<td>[1.09]</td>
<td>[1.54]</td>
<td>[1.05]</td>
</tr>
<tr>
<td>Constant</td>
<td>475.404</td>
<td>-1.149</td>
<td>472.109</td>
</tr>
<tr>
<td></td>
<td>[3.84]**</td>
<td>[2.30]**</td>
<td>[3.70]**</td>
</tr>
<tr>
<td>Observations</td>
<td>125</td>
<td>125</td>
<td>125</td>
</tr>
<tr>
<td>R-squared a</td>
<td>0.34</td>
<td>0.47</td>
<td>0.34</td>
</tr>
</tbody>
</table>

Absolute value of t statistics in brackets
* significant at 5%; ** significant at 1%
Robust standard errors
a -- Adjusted count R-squared for probit model

In table 5.4, I report the results of the bivariate probit estimation. In this empirical specification, I assume that decisions about contract length and type are not independent, thus it requires a simultaneous modeling approach. Since the bivariate probit regression requires two dichotomous dependent variables, I use the long-term variable in place of length. Long-term
contracts are those with lengths greater than or equal to one standard deviation above the mean. First, I find empirical support for this modeling strategy since the results indicate that I can reject the null hypothesis that \( Rho \) is statistically different than zero at a 99 percent confidence level. The findings in table 5.4 seem to confirm the results reported in the previous paragraphs – asset specificity and technical consulting have a statistically significant positive effect on the likelihood of the EPA using a long-term contact and a cost-plus contract. While not significant in either equation, the coefficient for bids is negative in both, as expected. Once again, the nonprofit variable has a positive effect on the likelihood of EPA using a cost plus contract and is statistically significant at a 99 percent confidence level. Similar to the previous regressions, the recent contracts variable has a negative impact on the long-term variable (not statistically significant) and a positive impact on the cost-plus variable.

Overall, these results provide some evidence that outside factors do influence contract design decisions. Specifically, dedicated asset specificity and complexity associated with technical consulting are important determinants of contract length and type. Moreover, it appears the nonprofit organizations and those organizations with multiple contracts with the EPA are more likely to receive cost-plus contracts. Finally, these results are robust to different econometric specifications. This suggests that governance costs, organization type, and relational characteristics will impact contract design decisions regardless of whether decision making is sequential or simultaneous.
Table 5.4  Results of Seemingly Unrelated Bivariate Probit

<table>
<thead>
<tr>
<th>Seemingly Unrelated Bivariate Probit</th>
<th>Long-term</th>
<th>Cost-plus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governance Costs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asset specificity</td>
<td>0.667</td>
<td>0.808</td>
</tr>
<tr>
<td></td>
<td>[2.00]*</td>
<td>[2.71]**</td>
</tr>
<tr>
<td>Bids</td>
<td>-0.018</td>
<td>-0.291</td>
</tr>
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<td>[0.18]</td>
<td>[1.69]</td>
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<tr>
<td>Technical consulting</td>
<td>0.961</td>
<td>1.117</td>
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<td>[2.87]**</td>
<td>[2.85]**</td>
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<td>[2.60]**</td>
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<td>Relational Governance</td>
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<td></td>
</tr>
<tr>
<td>Recent Contracts</td>
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<td>0.513</td>
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<td>[0.85]</td>
<td>[2.98]**</td>
</tr>
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<td>Controls</td>
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<td></td>
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<tr>
<td>Cincinnati</td>
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<td>-0.759</td>
</tr>
<tr>
<td></td>
<td>[0.52]</td>
<td>[2.35]*</td>
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<tr>
<td>Employees</td>
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<td>0</td>
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<td>[1.41]</td>
<td>[1.58]</td>
</tr>
<tr>
<td>Constant</td>
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<td>-1.215</td>
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<td>[0.77]</td>
<td>[2.48]*</td>
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<tr>
<td>Rho = 0 chi2 = 6.50**</td>
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<td></td>
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<tr>
<td>Absolute value of z statistics in brackets</td>
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<tr>
<td>* significant at 5%; ** significant at 1%</td>
<td></td>
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</table>

**Summary**

In this chapter, I began with the simple premise: contract design decisions matter. Given the full range of make-or-buy decisions in the public sector, contract design decisions help structure relationships once the decision to contract out has been made. The two primary design choices examined in this chapter were contract length and contract type. In the make-or-buy framework discussed throughout this dissertation, long term, cost-plus contracts are the most similar to hierarchy since there is more protection against opportunistic behavior built into the contract. Contrarily, short term fixed price contracts are closer to traditional market style
governance where incentives are built into the relationship to induce more efficient and cost-effective service delivery.

My approach in this chapter has been to argue that governance costs, organization type, and relational characteristics will affect these design decisions. I used a variety of econometric modeling techniques to account for the range of possible decision-making processes (sequential v. simultaneous). Overall, I find some empirical support for the propositions that governance costs have a significant impact on contract length. Specifically, the higher the governance costs, the longer the contract. This finding comports with findings found in the economics and business literatures. I also find the governance cost, organization type (nonprofit), and relational characteristics impact the decision on contract type. As governance costs increase, managers will use cost-plus contracts to protect against opportunism, just as the local governments analyzed in chapter four used hierarchy to protect against opportunism. Moreover, it appears that managers choose cost-plus contacts due to their understanding of the incentive compatibility between nonprofit and public organizations, as well as the ability of relational governance smooth potential governance costs.

Lastly, this study is limited by its somewhat narrow sample. Since I am only looking at new contracts from a single federal agency, it is difficult to extend these results to other organizations with any certainty. Therefore, more studies using data from a wide cross section of governments and agencies are warranted.
CHAPTER 6
THE PERFORMANCE CONSEQUENCES OF SERVICE DELIVERY ALIGNMENT

Thus far, my aim has been to develop theory that explains the factors influencing make-or-buy decisions in the public sector; and to test this theory using quantitative data. In this chapter, I change the approach and examine the performance consequences of service delivery decisions. Specifically, I examine the implications of contracting out two very different types of services, education and garbage collection. Education represents a core capability in the public sector due the difficulty in maintaining adequate accountability; whereas garbage collection represents a viable candidate for arms-length contracting, since it is not a core capability and is characterized by low governance costs. According to my theoretical framework, I would expect education to remain under direct public control, and garbage collection to be contracted out to the private sector. There is evidence to support these claims, since the vast majority of public schools remain under direct control of public school boards (Hannaway 1999) and less than half (48%) of the municipalities responding to the 2002 ICMA Alternative Service Delivery survey provided garbage collection directly using public employees. The purpose of this chapter, therefore, is to examine the performance consequences of alignment/misalignment. Specifically, I test two propositions. First, municipalities will achieve improved performance by contracting out garbage collection to the private sector – an example of service delivery in alignment with my theory. Second, local school districts will experience adverse performance consequences
when contracting out education to a for-profit contractor – an example of service delivery misaligned with my theory.

To test these propositions, I reviewed a large cross section of evaluative data on the effectiveness of contracting out each service. For example, I reviewed studies on garbage collection from the public administration, economics, political science, and public policy literatures which report economic – as well as non-economic – performance data.\textsuperscript{31} For education, I include only those studies that report financial and educational achievement data for preexisting schools that contract with for-profit providers.\textsuperscript{32} It is important to note that performance is a broad concept often encompassing many different dimensions. Economic efficiency, while important, cannot be the sole evaluative criterion when assessing relative performance of public programs. Therefore, I follow Hodge’s (1998) approach and review relevant field and case work on two important dimensions: economic efficiency, as well as social and democratic performance.\textsuperscript{33}

This chapter is organized as follows. I begin by describing the usefulness of case studies in the social sciences, followed by a brief discussion on the importance of performance in public administration. Next, I examine, in turn, how education and garbage collection fit into my theoretical framework; specifically, I characterize each in terms of pointing out the different capabilities and governance costs impacting service delivery choices. In each substantive section, I follow the theoretical discussion with a review of the relevant field and case work on two important dimensions of performance – economic efficiency and social/democratic performance.

\textsuperscript{31} I include several international studies for comparison purposes.
\textsuperscript{32} Contracting out education is a much more recent phenomenon than contracting out garbage collection, thus the studies included in this analysis are more recent, but less numerous.
\textsuperscript{33} I group Hodge’s (1998) democratic, political, and social performance into social and democratic performance.
Finally, I summarize the findings and provide some important implications for public managers and pathways for future research.

**Field Work and Performance**

"Case studies are often criticized because of their lack of generality and possible ex-post rationalizations, but they are an important and necessary complement to econometric analysis (Masten and Saussier 2000) and often provide a richer description and perspective than many statistical analyses offer."

*Richman and Macher (2006)*

In public administration, most of the studies reviewing the case-based research on contracting out have either used meta-analytical techniques (Hodge 1998) to determine the relative effectiveness of contracting out, or have examined a cross section of the literature to illustrate the superiority of one governance mechanism over the other (Poole and Fixler 1987). Many of the early analyses found evidence supporting the proposition that contracting is an effective service delivery mechanism (Savas 1987). Other, more recent analyses have found less promising results. Hodge (1998), for example, found that en masse contracting improved cost effectiveness and efficiency for relatively unskilled and low priority services such as janitorial work and building maintenance, but had little or no effect on other more complex services. Boyne (1998) takes a rather different approach by examining the assumptions of public choice scholars using local government data. Overall, he finds that competition – a primary rationale espoused by public choice scholars – is often absent or minimal in public sector contracting.

Despite the evidence that contracting is not a magic bullet, advocates still find evidence of its usefulness (see Savas 2000). My approach is anchored in the belief that contracting out is firmly entrenched in our system of governance, but that it is also not a panacea for governments’ ills. What is important is to understand which service attributes will likely drive make-or-buy

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34 Much the variance in findings often stems from the methodological issues facing researchers (see Fernandez and Fabricant 2000 for review). Since the purpose of this research is not to illuminate this debate, at least not directly, I will not review the strengths and/or pitfalls of previous reviews.
decisions in the real world. But it is equally important to understand the performance consequences of each decision. In public administration literature, performance has moved to the forefront in recent years (Lynn, Heinrich, and Hill 2000, Fernandez 2004, Meier and O’Toole 2003). In addition, there have been calls for more performance-related research in the organizational economics literature (Richman and Macher 2006). The vast majority of the research in transaction costs economics, for example, has focused on the decision, not whether these decisions actually result in more economic efficiency.

Garbage in, Garbage out?

As any mayor or city manager knows, an important way to promote citizen satisfaction is to ensure that trash does not pile up in the streets. Arguably, garbage collection is one of the most visible and tangible of all public services, and thus poor service quality may have an acute impact on citizens. As the garbage strikes of 1968 in New York City and Memphis illustrate, service interruption can lead to civil unrest. Indeed, Martin Luther King, Jr. was in Memphis acting as an advocate for striking minority garbage collectors when he was assassinated. So despite its humble and rudimentary characteristics, garbage collection is an important component of effective local governance. Like nearly every service, there are numerous ways to govern the provision of garbage collection, including: direct delivery by public monopolies; open competition among private firms; exclusive franchises; and contracting out. In recent decades, competitive contracting with private firms has moved to the forefront.\[35\]

Two aspects of garbage collection make it a suitable subject for evaluation: (1) it is relatively easy to measure performance; and (2) many municipalities have experimented with different governance mechanisms. Consequently, there have been numerous studies evaluating

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\[35\] Only 18% of cities in the U.S. contracted out to private firms in 1964 (Donahue 1989), compared to roughly 50% in 2002 (ICMA, 2002)
the relative performance of private provision compared to direct provision by municipalities. On balance, these studies point to a net economic benefit resulting from contracting with private firms. These findings provide support for the proposition that service delivery alignment (as described by my theoretical framework) may have positive performance consequences. In the next two sections, I illustrate why contracting represents service alignment. It is important to note, however, that other forces besides governance costs and capability characteristics influence whether municipalities will choose to contract out garbage collection. Political factors, for example, may have a substantial affect on these decisions.\(^{36}\)

**Capabilities**

In the spectrum of local services, garbage collection is a relatively straightforward and simple task. On its face, there appear to be no specific skills, tacit knowledge, or public sector routines which would be lost by contracting it to a private sector organization. In an effort to be more comprehensive, a more careful examination is warranted. First, is there some aspect of garbage collection which offers coordination advantages? As Donahue (1989) points out, there are qualities and criteria which differentiate individuals vying for garbage and sanitation positions (congeniality, attitude, etc.). But there is nothing inherent in the task, or the workers involved in the task, to suggest that public garbage collectors would serve any other higher order coordinating purpose. Similarly, accountability is relatively simple to measure and monitor. Indeed, citizens are in a position to ascertain both quality and relative efficiency when given a choice. In sum, there is nothing about garbage collection to suggest it is a core capability of local governments based on the arguments developed in chapter three.

\(^{36}\) Only a slight majority (52 percent) of the municipalities responding to the 2002 ICMA survey contracted out garbage collection, an outcome which provides some support for this argument. However, recent evidence suggests that contracting for garbage collection is more often motivated by pragmatic reasons rather than ideology (Bel and Miralles 2003).
Governance Costs

As my theoretical framework predicts, those services which are not core capabilities will either gravitate toward arms-length contracting or more relational governance characterized by longer term contracts. Differentiating between these two governance structures is driven primarily by governance costs – asset specificity, volatility, and ambiguity. Garbage collection is not high in asset specificity since there is nothing prohibiting or barring ease of entry for profit seeking firms. As Greene (2002) points out, “refuse collection usually involves small economies of scale, does not require any type of sophisticated technology, and involves only a moderate capital investment in relation to most industries” (p. 45). As a result, costs are not “sunk” into an asset specific relationships leading to opportunism and potential hold-up.

Supply volatility is often not a concern since the market of potential service providers is typically stable due to contestability and ease of entry; especially in large cities (Globerman and Vining 1996). At this point it is worth noting that private collection is only more efficient when private firms compete for contracts, not individual delivery agreements with citizens. Donahue (1989) suggests that there are four possible explanations for this. First, small private firms competing for individual customers may simply be too small to achieve any economies of scale. Second, the relatively modest costs of garbage collection may not inspire consumers to make stringent cost comparisons. Third, the realized transaction costs will likely be higher since the companies will have to bill each customer instead of just one government client. And fourth, competing firms will not be able to achieve any economies of contiguity because they receive no benefit from being able to pick up the next house’s trash, and instead may have to move to the next block or next neighborhood before reaching the next customer.

37 The evidence suggests that open competition for individual customers, as opposed to competition for contracts, is even less efficient than public sector monopolies (Greene 2002).
The ability to measure performance, or the lack of ambiguity, is one of the most important distinctions between education and garbage collection. Measuring the quality and efficiency of garbage collection is relatively easy for governments and citizens. Governments are able to sanction an ineffective service provider by putting the contract back up for bid at the end of the term and rewarding it to different firm. Because of this, accountability is relatively easy to maintain.

Alignment and Performance

Perhaps more than any other service, garbage collection has been subjected to quantitative analysis assessing the relative performance of different governance arrangements. The vast majority of these studies have found that contracting with private firms has resulted in improved economic efficiency (Donahue 1989; Greene 2002; Savas 2000). In this section I review this body of field work on two different performance dimensions, economic efficiency and social/democratic performance. Since the vast majority of evidence relates to economic performance, I begin the review there.

Economic Performance

Assessing economic performance of garbage collection is typically a comparison between four different governance arrangements: direct collection by public employees (hierarchy), competitive contracting with private firms, franchises, and open competition. Since the vast majority of cities use either municipal workers or private contractors, I will limit my review to these arrangements. However, it is worth noting that open competition between firms and individual customers has been the least efficient economically of the four (see previous section).
Also, most of the studies cited below are over 20 year old. There has been a notable absence of research on garbage collection since the 1980’s.  

The economic performance of garbage collection is often measured on two dimensions – average cost per-household and average cost per ton of garbage collected. In a large sample of U.S. cities, Savas (1977) found that private contractors performed more efficiently than municipal workers on both dimensions – 15 and 9 percent more efficient, respectively (see table 6.1). In a study of 101 Connecticut cities, Kemper and Quigley (1976) find the same pattern, but with an even greater disparity of 25 percent. 

Table 6.1 Comparative Costs of Garbage Collection

<table>
<thead>
<tr>
<th>Method of Collection</th>
<th>Mean Annual Cost per Household</th>
<th>Mean Cost per Ton</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Contractors</td>
<td>$27.82</td>
<td>$25.78</td>
</tr>
<tr>
<td>Municipal Workers</td>
<td>$32.08</td>
<td>$28.28</td>
</tr>
</tbody>
</table>

Source: E.S. Savas (1977)

Other studies have found that scale must be accounted for in efficiency comparisons. Cognizant of the inconsistent and misleading data originating from local government accounting systems, Stevens (1977) collected on-site data from 340 garbage collection operations across the nation and found that operations serving smaller populations (less than 20,000) and using fewer than four trucks tend to be less efficient than larger operations due to technological disadvantages. In cities with populations between 20,000 and 50,000, the differences are

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38 There are two possibilities for the shortage in recent research. First, the evidence consistently supports the notion that contacting with private firms has resulted in improved economic efficiency, and thus fewer researchers find a fertile subject area for future research. A second possibility is that scholars have refocused their efforts on more complex service areas that pose a more direct threat to democratic accountability and public responsibility.
essentially negligible or inconsistent in either direction. In cities larger than 50,000, however, Stevens found that private collection was roughly 25 percent more efficient than public collection.

Table 6.2 Summary of Additional Empirical Findings on the Economic Efficiency of Municipal Garbage Collection Contracts

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Inquiry subject</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hirsch (1965)</td>
<td>24 cities in the St. Louis area, public v. private collection</td>
<td>No significant differences</td>
</tr>
<tr>
<td>Pier, Vernon, and Wicks (1976)</td>
<td>26 cities in Montana, public v. private collection</td>
<td>Municipal collection more efficient</td>
</tr>
<tr>
<td>Petrovic and Jaffee (1978)</td>
<td>83 cities in the Midwestern U.S., public v. private collection</td>
<td>Cost of public collection 15 percent higher</td>
</tr>
<tr>
<td>Savas (1977b)</td>
<td>Minneapolis, MN, 50 private v. 30 public organizations</td>
<td>No significant cost differences</td>
</tr>
<tr>
<td>Spann (1977)</td>
<td>Survey of U.S. cities, municipal v. private collection</td>
<td>Cost of public collection 45 percent higher</td>
</tr>
<tr>
<td>McDavid (1985)</td>
<td>126 Canadian cities, public v. private collection</td>
<td>Public collection 41 percent more costly</td>
</tr>
</tbody>
</table>

Source: adapted from Greene (2002)

Finally, the empirical evidence from abroad is consistent with findings in the U.S. In a study of 102 Swiss municipalities, Pommerehne and Frey (1976) found that the unit costs of municipal collection were roughly 15 percent higher than private collection. In a similar study of cities in Canada, Kitchen (1976) found that municipal collection was significantly more costly.
In a study of 610 cities in Great Britain, Domberger, Meadowcroft, and Thompson (1986) found even greater efficiency gains, 28 percent, attributed to private garbage collection. Other important studies assessing the economic efficiency of contracting out garbage collection are summarized in table 6.2.

Social and Democratic Performance

As table 6.2 illustrates, the empirical evidence concluding that contracting with private firms for garbage collection is more efficient than collection by public monopolies is by no means undisputed. Several studies find no statistical differences between the two (Savas 1977b; Hirsch 1965), while at least one study finds greater efficiency through collection by public monopolies (Pier, Vernon, and Wicks 1976). Nonetheless, a pattern clearly emerges that private firms competing for municipal garbage collection contracts is likely to improve economic efficiency. But to fully assess performance of service delivery, it is incumbent to move beyond economic efficiency alone, and consider some of the social and democratic consequences of contracting garbage collection.

Quality comparisons are relatively easy to make in garbage collection since citizens are in a position to monitor performance individually. Indeed, most of the studies recounted above simply assume quality to be irrelevant since performance can be easily stipulated in the contract and poor performance will be punished by rewarding the subsequent contract to another firm. Savas (1977a) addresses this point indirectly by arguing that the larger costs associated with public collection will not translate into better quality or more services offered. It should be noted, however, that he provides no empirical support for this contention. Stevens (1977) finds evidence that costs increase as quality of service increases, regardless of how it is provided. But once again, this can be easily integrated into the service delivery contract.
There is a dark side to garbage collection, however. Examples of improved efficiency resulting from competitive contracting are often offset by collusion, price fixing and private sector monopolization (Crooks 1993). In the 1950’s New York City contracted all of its commercial solid waste collection services and “has been fighting an uphill battle ever since to make its commercial trade waste-collection system behave more like a competitive market rather than a protection racket” (Selar 2000: p. 48). Indeed, according to Crain’s New York Business (1995), New York City was overcharged by private garbage contractors by approximately $500 million. The point here is not to suggest that all garbage contracting will devolve into cabals of unethical and corrupt service providers, but rather to suggest competitive contracting is not immune to such developments. Therefore, municipalities will have to invest in monitoring and other contract management tools to maintain adequate oversight of the contract and thus avoid such problems.

Overall, there is evidence that competitive contracting is the primary governance choice for garbage collection and perhaps more importantly, there appears to be positive performance consequences associated with contracting with a private provider. Next, I discuss the performance consequences of contracting education.

**Education Management: A Core Capability?**

“Higher math test scores, fewer dropouts, more frequent recitations of the Pledge of Allegiance, and other such measurable results are not all that we expect of our schools. ‘Education’ also includes subtler factors that are hard to specify, harder still to monitor…”

*John D. Donahue (1989: p. 219)*

In their pop-economics best seller *Freakanomics*, Steven D. Levitt and Stephan J. Dubner (2006) chronicle a number of interesting and amusing cases that illustrate the powerful influence of incentives on the choices people make in contemporary society. One of the more disturbing
cases, however, documents the incentives facing teachers in our public schools. The authors contend, and provide some empirical evidence (see also Jacob and Levitt 2003), that teachers facing considerable pressure to have students excel on standardized tests have resorted to changing scores on exams in an effort to improve overall class performance. Why would an elementary school teacher, presumably dedicated to developing children into well rounded contributing members of society, commit such an egregious act seemingly at odds with the mission of the entire profession? Levitt and Dubner argue that the teachers’ behavior is a direct result of “high stakes” testing. These tests are meant to ensure that schools adhere to a set of performance standards, and thus are more accountable. But as economic theorists suggest, how and where performance is measured will have a profound effect on the effort of those being evaluated, especially when performance is attached to incentives (Holmstrom and Milgrom 1991).

The purpose of recounting this anecdote is not to engage in a debate about teacher ethics or the appropriateness of using test scores to measure performance in general, but rather to point out how individuals respond to the incentives operating within organizations. As I have noted throughout this dissertation, different governance structures are characterized by different incentive regimes. Moving services from the lower-powered incentive structures, like those inherent in public organizations, to higher powered incentive structures in the for-profit sector will likely have consequences. In the case of education, Levitt and Dubner’s example illustrates how efforts to maintain accountability have led to public school districts adopting performance requirements reminiscent of the private sector. Yet education, like many public services, is complicated by multiple principals, goals, and tasks rendering single dimension performance criteria problematic. This situation raises the question of what happens if the governance of
public education is shifted to the private sector altogether? Indeed, hundreds of school districts from across the country have done just that and hired education management organizations (hereafter EMO’s) to manage the day-to-day operations of public schools in an effort to save on costs and improve academic performance. What are the repercussions? In the following sections, I describe the performance consequences of contracting out education. But first I provide some background information, along with a description of a typical EMO.

The quality of American education is under constant scrutiny. For decades, we have heard how students in the U.S. are lagging behind their counterparts in Western Europe and Asia, a situation which has often led to widespread calls for reform. As a result, numerous policy changes have been advocated and tested in an effort to improve educational performance and accountability – including magnet schools, school vouchers, charter schools, and contracting out school management functions to EMO’s. Both the voucher approach (see Chubb and Moe 1990) and contracting out rely on the power of market incentives. But since this dissertation focuses on decisions made by government actors, not individuals – as is the case with vouchers – I will limit this discussion to the use of EMO’s. And since EMO’s typically contract with school districts, the unit of analysis is the performance of schools within the district.

Contrary to contracting out garbage collection, using contractual agents to manage schools is relatively rare (Hannaway 1999). Indeed, less than 1 percent of school districts in the U.S. currently contract, or have contracted in the past, with an EMO. More importantly for my purposes, contracting out education represents a departure from the choices expected from the theoretical framework developed in chapter three; contracting education exemplifies a service misalignment. In a later section, I provide the theoretical mechanisms affecting decisions to keep
education, more often than not, under direct public control. But first, I provide some brief background information on EMO’s along with a simple description of a typical EMO.

What is an EMO?

Research on public sector contracting rarely focuses on education. A possible reason may be in part the confusion surrounding what it means to contract out education in the first place. In fact, there are multiple levels of contracting within the education arena. For example, contracting out certain services or functions – transportation, food services, janitorial, etc. – is not new in education. What is new, however, is contracting out the administrative and management functions to for-profit firms, or EMOs (Hannaway 1999; Fitz and Beers 2002). According to Education Week (2000), EMOs generated between $100-123 billion of revenues in the U.S. It is worth noting that not every EMO is a profit-driven enterprise. For example, the Centre for British Teachers is a non-profit group in Great Britain that sustains its operations via trusts and fee collection. In fact, there are four general types of EMOs in operation:

- Type I – Nonprofit, single school operator.
- Type II – Nonprofit, multiple schools operator.
- Type III – For-profit, single school operator.
- Type IV – For-profit, multiple schools operator.

Within group IV there are essentially two subgroups: EMO’s that manage charter schools and EMO’s that manage contract schools. The latter group contracts with school districts to take over preexisting schools. Since this group more accurately reflects the contracting decisions discussed throughout this dissertation, I will limit my review to for-profit, “contract EMO’s.”

An EMO’s strategy typically involves approaching a local school board with the simple promise of reestablishing the link between performance and accountability that has presumably
been lost in the quagmire of public bureaucracy – all for less money than the school district
currently spends. The key to this pledge rests on implementing measurable performance targets
and innovative methods to achieve them. The typical targets are not limited to test scores alone
and frequently include cost reduction strategies, as well as more nebulous measures like parent,
student, and/or teacher satisfaction measures (Hannaway 1999). If the EMO should fail to meet
these targets in the allotted amount of time, most school boards maintain the right to revoke the
contract by way of a no confidence vote (Fitz and Beers 2002). The EMO plans to save money
for the district by implementing tight cost control mechanisms and achieving economies of scale
through increased enrollment in all of its schools from across the country.

Edison Schools, Inc. represents one of the largest and most established EMO’s currently
operating in the U.S. Formerly doing business as the Edison Project; it was established in 1991
with the goal of establishing 200 for-profit schools by 2000. 39 By 1999, however, they had fallen
significantly short of this goal and were operating only 77 schools in twelve states with
approximately 37,000 students (Hannaway 1999). Edison uses three general performance targets
to establish accountability: district standardized tests, tests developed specifically by Edison, and
student work portfolios (Fitz and Beers 2003). If there is a conflict between the school district
and Edison, the contracts typically stipulate that a third-party arbitrator assess the performance
results in order to resolve the dispute. Edison is unique compared to other EMO’s in that it
specifically focused (at least in its early years) on contracting with public school systems for
existing schools instead of creating new charter schools. 40

39 Due to its size, Edison has been the subject of more research than any of the other EMOs active in the market.
Therefore, much of the research cited hereafter focuses on Edison schools.
40 Many EMO corporations like to avoid the perceived added difficulties of contracting with preexisting schools and
instead start from scratch with a new charter school (Fitz and Beers 2003).
In recent years, it appears that contracting with EMO’s has lost some of its initial appeal. EMOs have experienced considerable financial problems due to lagging student enrollment and devalued stock prices. Moreover, educational performance has been mixed at best and when compared to voucher proposals, and EMOs have received much less attention in the media and academic journals. In the next two sections, I discuss why contracting out education is an example of service misalignment and why this may lead to performance problems.

**Capabilities**

Educators occupy a special place in the social order. Parents entrust teachers, administrators, and school board members not only to provide a sound education for their children, but also to help groom them to be effective citizens. Public education, therefore, serves a dual purpose, one centered on the individual and one centered on society as a whole. Yet it is well documented that educators receive relatively low compensation for such important societal tasks. Given the lack of monetary rewards associated with the profession, it is tempting to conclude that educators must be motivated by some altruistic purpose or a noble mission. Indeed there is some reason to believe that this is true, at least in a limited sense (see Besley and Ghatak 2005); but it is also important to consider that educators are just as likely to be rational decision makers as workers from other fields. When educators consider engaging in a certain activity, one expects them to consider the consequences or rewards linked to that activity. As Becker (1993) points out, "investments usually are rational responses to a calculus of expected costs and benefits" (p.17). The operative word in Becker’s assertion is “investment,” and the key to understanding why education represents a core capability is the investments that educators have made in their individual skill sets. House (1996) describes these skills as “tacit rather than explicit knowledge in the Polanyi sense of knowing how to do something (like riding a bicycle)
without being able to explain how to do it or teach someone else to do it” (p.8). These tacit skills represent investments made despite monetary incentives and represent the full range of capabilities necessary to be an effective educator. And perhaps more importantly, there is no reason to believe that teachers in privately run schools will be in a better position to develop these skills.

The craft-like capabilities described in the preceding paragraph are not easily transferred across governance mechanisms and incentive structures. Educators in public schools are purposefully insulated from opportunism stemming from higher-powered incentives and instead respond to lower-powered incentives like career concerns. Contracting education to a for-profit firm alters the incentive structure and changes how capabilities are developed and utilized. A potential consequence is that effort will be realigned away from more difficult-to-measure tacit skills, to more measurable, tangible skill sets. Moreover, the societal goals described in the opening paragraph may take a back seat to the more pressing (and measurable) goal of individual achievement. And since education is the definition of a service where accountability is important and difficult to measure, it can be characterized as a core capability in the public sector as described in chapter three.

Governance Costs

“There exist almost unique, irreplaceable research workers, teachers, and administrators: just as there exist unique, irreplaceable choice locations for plants and harbors. The problem of unique or imperfectly standardized goods... has been neglected in the textbooks.”

Oliver Williamson (1985: p.53)

In the case of education, asset specificity is remarkably similar to the capabilities described above since the form of asset specificity most likely found in education relates to human resources (Williamson 1996). Educators develop a very specific skill set which they may
be reluctant to risk in market-like situations. As House (1996) points out, “Why should teachers risk knowledge assets built up over many years by switching to new teaching materials or techniques of unproved quality? Their educational and professional experience might be devalued” (p.8). Thus reform movements, like contracting out, are often met with distrust and skepticism by seasoned educators.

Supply volatility can become problematic in smaller communities where there are a limited number of schools and/or EMO’s to comprise a viable market. As with any market exchange, choice is an important component, the fewer choices available increase the risk of opportunism in the future. On the other hand, more schools and potential providers will stabilize the market and improve a school board’s ability to contract effectively. Moreover, replacing a public education monopoly with one from the private sector is not the optimum solution (Boyne 1998). Still, there is nothing inherently volatile about “education markets;” rather, volatility is likely to be market specific.

Compared to the other factors leading to higher governance costs, ambiguity in performance measurement will likely have the largest impact on a school district’s ability to monitor and manage a contract. School districts typically contract for two reasons: to control costs and to improve educational performance (Hannaway 1999). These goals can be summed up in the Edison Project’s motto, “more for less.” Three characteristics of education render performance measurement difficult. First, education is characterized by multiple goals. The goal of providing children with basic reading, writing, science, and arithmetic skills is often balanced by other goals such as providing a suitable environment for emotional and physical growth, providing safety, and preparing children to be responsible citizens (Hanushek and Jorgenson 1996). As Dixit (2002) notes, “these goals are not by any means mutually contradictory but,
given the finite resources of schools and teachers, they must compete for attention and therefore be substitutes” (p. 718). Compounding matters, performance is difficult to measure in each instance. Even test scores, which presumably measure the quality of the basic educational attainment, are extremely controversial. Hence, given that measurability is an important factor when implementing higher-powered monetary incentives, it is reasonable to conclude that multiple and conflicting goals may hamper such incentives.

Second, public education is characterized by multiple principals. Dixit (2002) lists no less than seven active stakeholders, or principals: parents and students; teachers and unions; taxpayers; potential employers of students; society as a whole; private schools; and groups favoring or opposing the current curriculum. Because some of these stakeholders care as much about the process (e.g. unions), there is no clear separation between the ends and means in public education – a circumstance that reinforces the problematic aspect of measuring performance. It would be naïve to argue that there are not multiple principals in a private firm as well. However, the firm’s ability to generate profits is what differentiates whether it will remain viable or perish. This is not so in the public sector where there is no single performance category to satisfy the multitude of stakeholders with an active interest in education.

Third, public education is characterized by motivated agents. It is unlikely that teachers enter the profession for monetary rewards. More accurately, teachers value the task itself, preparing children to be successful, knowledgeable, and active members of society. External incentives based on rigid performance criteria may actually “crowd out” the intrinsic motivation of teachers. This may explain Jacob and Levitt’s (2003) finding that some teachers in Chicago actually changed answers on standardized tests to improve the overall performance of his or her class.
Alignment and Performance

In the preceding sections, I characterize education as a core capability based on the need to maintain adequate links of accountability and the difficulty in doing so; but it is also likely to have high governance costs given the difficulty in measuring performance and the likelihood of asset specificity. Based on the theoretical framework developed in chapter three, I would expect that local politicians and managers would typically protect education as a core capability and not contract it out. However, we know that some governments do contract out education to the private sector which is equivalent to a misalignment, according to my theory. Frequently, school districts experimenting with contracting out are underachieving academically and financially when compared to surrounding districts. Typically, these school districts contract out a few schools within the district, not the entire population, making it possible to track the performance of contract schools compared to the other schools remaining under the school district’s control.

In the following sections I review the performance implication of the decision to ‘buy” education in a market-like exchange, when theory suggests that most managers will choose to keep education inside the government.

But before proceeding, it is important to note several caveats specific to research assessing the performance of EMOs. First, contracting out education is a recent phenomenon, only becoming a viable governance option in the early 1990’s. As a result, there are relatively few studies from which to draw performance data. There has been far more research focusing on the impact of individual choice (in the form of vouchers) on school performance than on the impact of contracting out to an EMO. Second, much of the research focuses on the performance of one or two schools within a single district – there have been very few large-scale evaluations of multiple schools from multiple districts. Third, much of the research is focused on how to
improve contracting with EMOs. In my review, I am not concerned so much with how the contracts are managed, but rather whether they have been successful in meeting the predetermined objectives. Finally, much of the data available is self-reported by the EMO, since internal testing is typically part of the contractual agreement with the school district. In the review to follow, I will focus primarily on independent research and only use self-reported data for comparison purposes. In the next section, I review research that evaluates how successful EMOs have been at providing school districts with substantial financial savings.

Economic Efficiency

Since EMOs receive basically the same amount of money per pupil as a public school district, the only way that they can turn a profit is to run the school more efficiently by saving on costs. As of 2002, Edison, Inc. had yet to turn a profit. One way in which Edison can hope to save money in the future is by achieving economies of scale. In other words, as enrollment goes up, the more savings it will accrue on computers, curriculum supplies, etc. due to volume discounts. Unfortunately for Edison, enrollment has not increased dramatically as they originally projected. Indeed, it appears that EMOs in general are finding it difficult to maintain sustainable profits. According to a 2006 report prepared by Alex Molnar of the Commercialism in Education Research Unit at Arizona State University, there were fewer EMOs in business (51 to 59) and fewer schools run by EMOs (521 to 535) than in 2004.41

Critics of for-profit education worry that the need to provide a reasonable return to investors and achieve profits will result in a conflict of interest when it comes to education. Companies concerned with their own business interests may not be interested in protecting the interests of students. These fears become even more relevant given the fact that the overall profitability of the

41 The total number of students enrolled in EMO-managed schools has remained relatively stable over this period of time.
EMO industry has been poor. For example, in a one-month period in 2002, Edison stock shares lost nearly 60 percent of their value. In five year period from 1998 to 2003, 63 EMO-managed schools closed (Molnar 2004). According the Arizona State (2006) report “For many of the closures, the major reasons given were that school officials believed the arrangement with the EMO was too costly [emphasis added] or that the EMO had not performed up to academic expectations” (p. 6).

While financial data on specific schools managed by EMOs is hard to come by, the Miron and Applegate (2000) study does report several cases where the cost effectiveness of the EMO did not meet the expectations of the school district. For example, the Sherman Independent School District in Texas claims to have spent $4 million more on its Edison schools than on other schools in the district. Moreover, Edison was spending less per student even though these students were thought to require more attention (due to poor achievement) than students in the district’s other schools. However, Miron and Applegate are quick to note that they are unable to answer the “financial question” definitively with the data at hand. Nonetheless, it seems reasonable to argue that the EMO contracting model developed in the 1990’s has yet to achieve one of its main goals – consistent cost savings for its schools.

Thus far, I have reviewed studies examining the financial viability and economic efficiency of contracting out education management. In education, however, the vast majority of performance research focuses on student achievement. In the next, section I review research assessing the “quality” of education in districts contracting with EMOs. And since the ability to provide quality education is an important characteristic of healthy and viable societies, I treat education quality as a measure of social and democratic performance.

Social and Democratic Performance

Some of the earliest studies assessing the performance of EMOs were commissioned by the American Federation of Teachers (hereafter AFT). In the first of these studies, Nelson (1998)
focused specifically on Edison schools and found that some were succeeding in raising student test scores relative with comparison groups, but overall Edison was not seeing improvements across all of its schools. In a subsequent study in 2000, Nelson used state-mandated criterion referenced tests to once again evaluate the performance of Edison schools. The report concludes that “Edison schools mostly do as well or worse than comparable schools; occasionally they do better” (AFT, 2000, p. 6) – not exactly a strong empirical finding one way or another. At about the same time, Edison released a report (2000) suggesting that its students improved an average of 5 to 7 percent on core subject standardized tests in 1999. It is reasonable to conclude that the AFT and Edison each have a vested interest in the success or failure in private provision of public schools. Putting the political agendas aside, neither group was able to find conclusive support for or against the use of EMOs.

Much of the independent research evaluating the performance of education relies on small case studies of one or two school districts. Rhim (2007) examines two school districts with a history of underachieving on standardized tests – Baltimore, County, MD and Chester Upland, PA. Each district is characterized by a low income and predominantly minority population. Baltimore contracted with Edison and Victory, Inc. to take over four of its poorest performing schools in 2000. Initially, the results were encouraging. Three of the four schools (all of the Edison schools) saw significant improvement in standardized test scores. In the fourth school, the contract was terminated prematurely due to performance and management problems. However, recent findings suggest that even the initial successes experienced in Baltimore have since waned. In each of the three remaining contract schools, test scores dipped in 2004, while other comparable schools in the district saw increases (Bowie 2006). There is currently a political battle to determine the future of contracting in Baltimore; some advocating for even
more contracting, others lobbying for the status quo; and still others advocating an end to the contract.

While the Baltimore case illustrates some positive results of contracting, at least initially, the Chester Upland case was problematic from the start. Chester Upland, located about 50 southwest of Philadelphia, is a predominantly African American community with nearly 80 percent of its students qualifying for the free-lunch program. Like Baltimore, the school district made the decision to contact out nine of its ten schools to Edison in 2000. Unlike the Baltimore case, there was considerable opposition to the contract and quite a bit of uncertainty and debate about how the program should be implemented. Not surprisingly, there were performance problems. According to series of interviews with stakeholders of diverse perspectives, the contract with Edison did not meet performance expectations (Cornfield 2005). Indeed, in spring of 2005 Edison announced that it would prematurely end its contract at the end of the school year. Interestingly, all ten schools (nine contract schools and one district school) did see gains in academic testing during this period, but the schools were still far below state averages.

In larger more comprehensive study of Edison schools, Miron and Applegate (2000) find that while Edison has been successful in some cities (Wichita, KS), it has been unable to replicate the results in other school districts. Miron and Applegate examined the performance of Edison’s 10 most established schools (open for the longest period) from across the country on a variety of different standardized tests. While their findings are mixed on performance in general, they are able to provide some compelling evidence that Edison is inflating the scholastic achievement of its students. As Miron notes in a 2001 interview with the Milwaukee Journal Sentinel, "It is clear from our findings that across all schools in our sample, Edison students do not perform as well as Edison claims in its annual reports." Miron and Applegate conclude that
Edison Schools have improved scores on norm-based testing, tests which measure gains in student knowledge over time (e.g. the Iowa Test of Basic Skills), but on criterion-referenced tests (e.g. Massachusetts Comprehensive Assessment System) which are used to determine whether students are meeting state standards, Edison students performed no better than their public school counterparts – a fact which has apparently been ignored by Edison.

Clearly the verdict is not in on whether contracting the management of schools out to EMOs will result in improved performance. As the preceding paragraphs have demonstrated, some schools have been successful, while a seemingly equal number have failed. Indeed, by 2002 more than 20 Edison contracts had been terminated for various performance related factors. And still other contracts have been challenged on the grounds that Edison has been engaged in discriminatory practices toward African American students and underachieving students (Pollard 2002). Largely, however, it appears that Edison, and other EMOs, have not achieved consistent performance improvements in contract schools.

**Summary**

The goal of this chapter has been to bridge the gap between service delivery decisions and the performance consequences of these decisions. In the preceding chapters, I focused on the factors influencing these decisions and analyzed whether my propositions held up under empirical testing. Ultimately, public administration scholars are interested in whether the decisions made by public managers will improve the performance of public programs; just as scholars from organizational economics assume that aligning services in a way that minimizes transaction costs will improve the efficiency of a firm. Yet there has been very little research linking theory and performance. And while I only examine field research from two very different services, it is important initial step.

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42 It should be noted that no contract has been terminated due to discrimination.
In general, I find some support for my proposition that aligning service in accordance with my theory will have a positive impact on performance. Contracting out garbage collection to for profit providers (arms-length governance) is in alignment with my theory. While the evidence is not unquestionable, contracting out garbage collection to private providers is likely to improve economic efficiency. The evidence on social and democratic performance is more limited. However, it does appear the municipalities contracting for garbage collection need to remain vigilant in monitoring contractor performance to avoid opportunistic behavior on the part of the contractor. The proposition that misaligning a core capability, like education, with a for-profit firm will have negative performance consequences is less clear. Indeed, the evidence surrounding the performance of EMOs is generally mixed. In terms of economic efficiency, EMOs have fallen short of achieving the economies of scale needed to save significant costs, in general. Unfortunately, the data on individual schools is limited, making it difficult to evaluate specific contracts. While the data on educational performance (social and democratic performance) are more plentiful, they suggest that contracting has been successful in improve educational achievement in some cases, and not others. I believe it is safe to say, however, that the original EMO model which was developed in the early 1990’s by Edison, Inc. and other EMOs has not been as successful as originally promised. Clearly more research is warranted in this area.
CHAPTER 7
CONCLUSION

Governments in the U.S. utilize a variety of different tools for governing public services, an important instance of which is contracting out with for-profit firms, nonprofit organizations, and other governmental entities. While it is often assumed that contracting out is a relatively recent phenomenon, it has been an important tool in the American system of governance since the Revolutionary War. Despite this long history, contracting out has arguably become a more prominent service delivery option over the past three decades. In light of this development, public administration scholars have devoted more attention to public sector contracting. Much of this research can be separated into two primary types: studies comparing the cost effectiveness and/or quality of a contracted service to direct service delivery by public organizations; and studies challenging the appropriateness of contracting based on normative grounds. This study belongs to a third, less prominent, approach to contracting research focused squarely on the contracting decision. Like other studies in this group, I set out with the goal of identifying predictable patterns in service delivery decisions and uncovering the factors influencing these patterns. In doing so, I argue that the so-called “make-or-buy” decision is particularly important to the public sector since it – in effect – helps determine the size and scope of direct governmental activity in the U.S.

Unlike previous research on contracting decisions, I have taken a broad approach in this dissertation by decomposing the make-or-buy decision into three different steps. First, public managers decide whether or not to contract for services. Second, once the decision to contract
has been made, managers decide to whom the contract is awarded. Third, public managers can
structure contracts in ways that minimize opportunistic behavior on the part of the contractor by
choosing between different contract types and terms. By expanding the decision to encompass all
of these elements, I am able to engage in a more comprehensive and complete examination of
public sector make-or-buy decisions – and provide a more detailed picture for scholars and
practitioners alike.

In addition to providing a more comprehensive view of make-or-buy decisions, I
incorporated much of the historical context leading to the development of the “contracting state”
to my analysis. In chapter two, I argued that the rise of the contracting state resulted from
pragmatic and ideological decision making on the part of public managers and politicians.
Government bureaucracy in the U.S. developed gradually over time. Accordingly, the
government had to rely on outside contractors to provide goods and services which it was unable
or unwilling to produce internally. As government expanded into more service delivery domains,
government reformers (particularly over the past three decades) pushed for less direct
governmental provision and more contracting for services with private sector organizations.
These historical developments provided the foundation for my theoretical framework described
in chapter three. To develop the theoretical arguments further, I integrated tools borrowed from
the economics and business literatures. In particular, I combined two important streams of
boundary research – incentive alignment and protecting core capabilities. From these seemingly
different approaches, I was able to develop a set of testable propositions for the empirical
chapters. In general, my argument throughout the dissertation has been that public managers tend
to protect core capabilities, while at the same time searching for ways to improve efficiency by
contracting out ancillary capabilities – especially those that are easily governed via contracts (i.e.
low governance costs). On the whole, I find support for this general proposition and for the majority of the hypotheses tested in the empirical chapters.

Here I summarize the most important empirical findings from chapters four, five, and six. I then describe the primary research limitations and problems encountered while conducting the analyses. In the last section of the chapter, I discuss some future research possibilities motivated by this study. In particular, I see a need for more thorough examinations of relational contracting, as well as more research utilizing existing contracts instead of relying solely on survey data.

**Summary of Findings**

I address four separate research questions in this dissertation. The first three questions relate to factors determining why governments contract out certain services, to whom, and the characteristics of individual contracts; whereas the fourth question focuses on whether there are performance consequences of theoretical alignment/misalignment. To examine the research questions, I use multiple methodologies and a variety of quantitative and qualitative data. In general, I find support for the proposition that service- and market-level factors are key determinants of public sector make-or-buy decisions.

In particular, in chapter four I examined the effect of governance costs and core capabilities on government contracting decisions using a large sample of local government service delivery data. In addition, I examined how these factors affect to whom the contract is awarded. Three substantive findings emerge from the analysis. First, public managers are reluctant to contract out core capabilities. Indeed, as the results from chapter four indicate, the core capability variable had the largest negative impact on whether a service was contracted out. Second, services which are difficult to govern via contracts (i.e. high in asset specificity, supply certainty, and/or ambiguity) are more likely to be kept inside the hierarchy. Finally, public
managers and politicians appear to be willing to incur the risk of higher governance costs when contracting with a nonprofit organization – especially when the governance costs are associated with measurement problems (ambiguity).

What are the implications of these findings? Overall, these results suggest that public managers are motivated by both vertical and horizontal pressures (see Cooper 2003). On the one hand, managers understand that contracting out certain capabilities may put public sector accountability and coordination at risk. These core capabilities are extremely important to maintaining the integrity and effectiveness of public organizations. Yet, on the other hand, public managers are faced with pressure to provide more services for less money. Clearly, there is evidence to suggest that contracting with a private firm or a nonprofit organization may save on costs in certain situations. Successful contracting is predicated on understanding which services will be more costly to contract out due to the likelihood of increased governance costs – on top of the actual cost of producing the service. Moreover, it is important to understand that nonprofits are often responsible for provision of services which would otherwise gravitate to public organizations due to the likelihood of opportunism on the part of for-profit contractors. Governments seem willing to contract with nonprofits since much of the risk is alleviated by the incentive and goal compatibility between nonprofit and public organizations.

While the findings from chapter four are promising, there are also some important limitations. First, the ICMA survey only includes information on how a service is provided and nothing about the number of actual contracts or the number of contractors involved in provision of the service. Thus, there is no way to distinguish among services by scale or magnitude. Indeed, every service arrangement is treated as equal. Moreover, the survey limits my ability to measure the year-to-year fluidity and the multidirectional nature of the contracting process for
individual services over time. It is quite possible that a service contracted out in 2002 was provided in-house in 2001 or 2003. Second, I was unable to control for the full effect of politics on the contracting process. I did, however, include government type and state-level fixed effects in the analysis to control for some of the political heterogeneity between different jurisdictions. Nevertheless, it is reasonable to assume that managers often have their hands tied by politics and the political process (beyond what I am able to control for) when making contracting decisions.

In chapter five, I examined a different aspect of the make-or-buy decision – how managers structure individual contracts. In particular, I was interested in examining the influence of two important contract design characteristics – length and type – on a contract’s ability to mitigate opportunism. The analysis focused on whether these decisions were affected by governance costs, relational characteristics, and a contractor’s organization type. I found evidence that, in general, higher governance costs led to more cost-plus contracting and contracts with longer lengths – characteristics analogous to hierarchical governance. In addition, I tested the hypothesis that previous contracting experience with the government (in this case the Environmental Protection Agency) affects the terms of the current contract. Those firms with recent contracts may receive more flexible contract terms inherent in cost-plus contracts and long-term contracts due to the relationship which has developed between the contracting parties. I found that recent contracts with the EPA resulted in more cost-plus contracting, but not longer contracts. Finally, I found evidence that nonprofit organizations are more likely to receive cost-plus contracts than fixed-price contracts, a pattern which suggests that public managers recognize the incentive compatibility of nonprofit organizations, and thus do not feel the need to use high-powered incentives to motivate the contractor.

43 The ICMA surveys are conducted every five years.
The findings in chapter five suggest that contract design decisions matter, and that this line of contracting research is fertile ground for public administration scholars (see the next section of this chapter). It is apparent that contract design is an important component of the developing conception of contract management capacity, which up to now has received limited attention in the public administration literature. While the results of chapter five are a good first step, the analysis covered only a single federal agency, thus limiting the external validity and generalizability of the findings.

In chapter six, I examined the performance implications of make-or-buy decisions in the public sector. Specifically, I examined whether services aligned with the theoretical predictions in chapter three will perform better; or on the flip side, whether services misaligned with the predictions will experience negative performance consequences. To this aim, I examined performance studies of two very different services – garbage collection and education. Overall, the preponderance of evidence suggests that contracting out garbage collection (which is in alignment with my theoretical predictions) results in efficiency improvements, on average, when compared to direct service delivery by local governments. Although there has been much less research on the social and democratic performance of contracting out garbage collection, it does appear that there have been cases of collusion and corruption associated with garbage contracts – especially in larger cities. However, since local citizens and governments are more able to monitor the performance of garbage collection compared to other services, it is likely that poor performers will eventually lose contracts.

Contracting out education, on the other hand, represents a service in misalignment with my theoretical predictions due to its core capability characteristics. Overall, the evidence suggests that contractors are experiencing difficulties in achieving the economies of scale
necessary to realize their initial promises of significant cost savings. Perhaps more importantly, the evidence on whether contracting out education has had a positive impact on educational achievement (social and democratic performance) is mixed. There is not enough evidence to suggest that contracting out education is a bad idea; nor does the evidence suggest that it is a promising governance mechanism for improving the nation’s schools. As I indicated in chapter six, more research is needed in order to ascertain whether contracting out education to EMOs is a viable service delivery option. On the whole, however, it appears that much of the early enthusiasm for contracting with an EMO has been replaced by caution and trepidation (Miron and Applegate 2000).

**Future Research Directions**

In this dissertation, I have made the argument that contracting decisions are of paramount importance to public managers; provided useful theoretical arguments which help explain why services gravitate to different governance arrangements; and reported in-depth empirical analyses testing my theoretical propositions. Despite these contributions, the dissertation uncovered other important streams of research which I was either unable to fully develop or was beyond the scope of this study. In this section, I identify two streams of research that fit the aforementioned description and thus warrant more attention in the public administration literature: contract design research and relational contracting.

Throughout this dissertation, I examined formal characteristics of contracts and service delivery arrangements in order to better understand why particular decisions are made. I used both survey data and data from actual federal contracts in my analyses. In public administration, the majority of research on the contracting decision relies solely on survey data and thus misses much of the nuance found in actual contracts. Indeed, as the results from chapter five illustrate,
public managers have the capacity to use contracts as tools for structuring relationships in ways that will likely have performance implications. Despite this promising start, the analysis in chapter five was limited to contract data from a single federal agency. It is entirely possible that managers from other organizations in federal, state, and local governments will approach contract design decisions quite differently. What is needed is more cross-agency and/or cross-government studies examining these types of decisions. Clearly these data are more difficult to come by than data from large ongoing surveys (like the ICMA survey used in chapter four), but I believe the ultimate payoff from doing so is worth the effort. The increased access to federal contract data afforded by electronic databases linked to the internet should facilitate such research efforts in the future.

Relational contracting offers an alternative to the standard service-delivery dichotomy of “making” or “buying” – especially when there is considerable uncertainty surrounding the exchange. A relational contract is a self-enforcing agreement which may be able to circumvent many of the problems associated with formal contracting agreements. The assumption throughout this dissertation has been that if there is a problem with the current governance arrangement, public managers should consider utilizing a different governance structure. An alternative approach is to leave the governance structure as is, and instead develop relational contracts. In many ways, relational contracting emerges as an alternative to the formal processes of bidding and renegotiation in that managers work beyond the boundaries of their organization to nurture relationships based on past experiences and cooperation, with mutual trust arising from the simple fact that the contracting parties will be involved with each other in a long-term relationship. Consequently, the contracting parties are able to utilize their accumulated knowledge and to adapt to new information as it becomes available.
Recent studies suggest that public administration scholars have discovered the importance of relational governance in public sector contracting (see Fernandez 2004). As this research agenda progresses, the interaction between formal and informal aspects of the public sector make-or-buy decision will move to the forefront. This dissertation has provided an important first step by presenting a comprehensive view of the formal aspects of these decisions. The subsequent step of uncovering a more complete view of the informal aspects of contracting is an enticing research agenda that deserves systematic attention.
REFERENCES


### APPENDIX

Table A.1  Chapter 4: Technical Description of Measures

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description of Measurement</th>
<th>Data Source(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public hierarchy:</td>
<td>Coded &quot;1&quot; if the service is provided directly by the local government; coded &quot;0&quot; if not.</td>
<td>ICMA - Alternative Service Delivery Survey (2002)</td>
</tr>
<tr>
<td>Other government:</td>
<td>Coded &quot;1&quot; if the service is provided by another governmental entity; coded &quot;0&quot; if not.</td>
<td>ICMA - Alternative Service Delivery Survey (2002)</td>
</tr>
<tr>
<td>Nonprofit:</td>
<td>Coded &quot;1&quot; if the service is provided by a nonprofit organization; coded &quot;0&quot; if not.</td>
<td>ICMA - Alternative Service Delivery Survey (2002)</td>
</tr>
<tr>
<td>For-profit firm:</td>
<td>Coded &quot;1&quot; if the service is provided by a for-profit firm; coded &quot;0&quot; if not.</td>
<td>ICMA - Alternative Service Delivery Survey (2002)</td>
</tr>
<tr>
<td>Contracted out:</td>
<td>Coded &quot;1&quot; if the service is contracted out to a for-profit firm, nonprofit organization, or another governmental entity; coded &quot;0&quot; if the service is provided directly by the local government.</td>
<td>ICMA - Alternative Service Delivery Survey (2002)</td>
</tr>
<tr>
<td>Asset specificity:</td>
<td>Brown and Potoski (2003) administered a survey to 75 randomly selected city managers and mayors from across the county. The respondents were asked to rate on a scale of 1 to 5 the asset specificity of 64 different services listed on the ICMA - Alternative service Delivery Survey. The authors provide the following definitions of asset specificity to help clarify the concept for respondents: (1) &quot;the use of a specific location that is only movable at a great cost;&quot; (2) &quot;the use of highly specialized human skills that cannot be put to work for other purposes;&quot; (3) &quot;the use of specialized tools or a complex system designed for a specific purpose;&quot; and (4) &quot;the requirement that a service reach the user within a relatively limited period of time or the quality of the service greatly diminishes&quot; (p. 466).</td>
<td>ICMA - Alternative Service Delivery Survey (2002); Brown and Potoski (2003) survey of elites.</td>
</tr>
<tr>
<td>Ambiguity:</td>
<td>Brown and Potoski (2003) administered a survey to 75 randomly selected city managers and mayors from across the county. The respondents were asked to rate on a scale of 1 to 5 the difficulty in measuring and monitoring 64 different services listed on the ICMA - Alternative service Delivery Survey.</td>
<td>ICMA - Alternative Service Delivery Survey (2002); Brown and Potoski (2003) survey of elites.</td>
</tr>
<tr>
<td>Supply certainty:</td>
<td>The average population of all the cities or counties providing a particular service.</td>
<td>ICMA - Alternative Service Delivery Survey (2002); U.S. Decennial Census (2000)</td>
</tr>
<tr>
<td>Core capability:</td>
<td>The percentage of local governments providing a service in both 1992 and 1997; regardless of the service delivery method.</td>
<td>ICMA - Alternative Service Delivery Survey (1992 and 1997)</td>
</tr>
<tr>
<td>Manager:</td>
<td>Coded &quot;1&quot; if the local government has either the city or county manager form of government; coded &quot;0&quot; id not (self-reported).</td>
<td>ICMA - Alternative Service Delivery Survey (2002)</td>
</tr>
<tr>
<td>Per capita revenues:</td>
<td>Local tax revenues divided by the population of the municipality or county. The measure is divided by 1000 for interpretability.</td>
<td>U.S. Census of Governments (2002); U.S. Decennial Census</td>
</tr>
</tbody>
</table>
Table A.1 (cont.)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description of Measurement</th>
<th>Data Source(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population:</td>
<td>Total population of the city or county. The measure is divided by 10,000 for interpretability.</td>
<td>U.S. Decennial Census (2000)</td>
</tr>
<tr>
<td>Central city:</td>
<td>Coded &quot;1&quot; if the local government represents a &quot;central city&quot;; coded &quot;0&quot; if the local</td>
<td>ICMA - Alternative Service Delivery</td>
</tr>
<tr>
<td></td>
<td>government represents a &quot;suburb&quot; or an &quot;independent&quot; jurisdiction (self-reported).</td>
<td>Survey (2002)</td>
</tr>
<tr>
<td>Total services:</td>
<td>Total number of services provided by the local government, regardless of service delivery</td>
<td>ICMA - Alternative Service Delivery</td>
</tr>
<tr>
<td>County:</td>
<td>Coded &quot;1&quot; if the local government represents a county; coded &quot;0&quot; if not (self-reported).</td>
<td>ICMA - Alternative Service Delivery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Survey (2002)</td>
</tr>
</tbody>
</table>

Table A.2  Chapter 4: Results of Multinomial Probit (Base case Nonprofit Organization)

<table>
<thead>
<tr>
<th>Governance Costs</th>
<th>Other Government</th>
<th>For-Profit Firm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset Specificity</td>
<td>0.422</td>
<td>0.016</td>
</tr>
<tr>
<td>[13.06]**</td>
<td>[0.49]</td>
<td></td>
</tr>
<tr>
<td>Supply Certainty</td>
<td>1.169</td>
<td>-0.285</td>
</tr>
<tr>
<td>[6.25]**</td>
<td>[1.46]</td>
<td></td>
</tr>
<tr>
<td>Ambiguity</td>
<td>-0.466</td>
<td>-0.527</td>
</tr>
<tr>
<td>[14.55]**</td>
<td>[15.60]**</td>
<td></td>
</tr>
<tr>
<td>Capability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Core Capability</td>
<td>0.133</td>
<td>0.201</td>
</tr>
<tr>
<td>[3.80]**</td>
<td>[5.89]**</td>
<td></td>
</tr>
<tr>
<td>Form of Government</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manager</td>
<td>-0.143</td>
<td>-0.117</td>
</tr>
<tr>
<td>[1.36]</td>
<td>[1.32]</td>
<td></td>
</tr>
<tr>
<td>Control Variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Services</td>
<td>0.009</td>
<td>-0.008</td>
</tr>
<tr>
<td>[1.94]</td>
<td>[2.11]**</td>
<td></td>
</tr>
<tr>
<td>Per Capita Revenues</td>
<td>-0.265</td>
<td>-0.02</td>
</tr>
<tr>
<td>[2.16]**</td>
<td>[0.20]</td>
<td></td>
</tr>
<tr>
<td>Population (10,000)</td>
<td>-0.002</td>
<td>0.002</td>
</tr>
<tr>
<td>[0.58]</td>
<td>[0.82]</td>
<td></td>
</tr>
<tr>
<td>County</td>
<td>-0.268</td>
<td>-0.395</td>
</tr>
<tr>
<td>[2.11]**</td>
<td>[3.64]**</td>
<td></td>
</tr>
<tr>
<td>Central</td>
<td>-0.449</td>
<td>-0.144</td>
</tr>
<tr>
<td>[4.71]**</td>
<td>[1.70]</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-6.609</td>
<td>11.955</td>
</tr>
<tr>
<td>[3.46]**</td>
<td>[5.97]**</td>
<td></td>
</tr>
</tbody>
</table>

Robust z statistics in brackets
* significant at 5%; ** significant at 1
<table>
<thead>
<tr>
<th>Variable</th>
<th>Description of Measurement</th>
<th>Data Source(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>The length of the contract in days as stipulated in the initial award (Fiscal Year 2006)</td>
<td>EPA - Active Contract Database</td>
</tr>
<tr>
<td>Cost-plus</td>
<td>Coded &quot;1&quot; if the contract is cost-plus; coded &quot;0&quot; if not.</td>
<td>EPA - Active Contract Database</td>
</tr>
<tr>
<td>Long-term</td>
<td>Coded &quot;1&quot; if the contract length is one standard deviation above the mean; coded &quot;0&quot; if not.</td>
<td>EPA - Active Contract Database</td>
</tr>
<tr>
<td>Nonprofit</td>
<td>Coded as &quot;1&quot; if the contract is awarded to a nonprofit organization; coded &quot;0&quot; if not.</td>
<td>EPA - Active Contract Database</td>
</tr>
<tr>
<td>Technical consulting</td>
<td>Coded &quot;1&quot; if the contract is for environmental consulting services, engineering services, or other scientific consulting by the NAICS classification system; coded &quot;0&quot; for all other types of services.</td>
<td>EPA - Active Contract Database</td>
</tr>
<tr>
<td>Bids</td>
<td>Total number of bids received for the contract.</td>
<td>Federal Procurement Data System</td>
</tr>
<tr>
<td>Asset specificity</td>
<td>The current value of the contract divided by the total revenues of the contractor in the year of the contract.</td>
<td>Federal Procurement Data System; Dunn and Bradstreet's Million Dollar Database</td>
</tr>
<tr>
<td>Recent contracts</td>
<td>The total number of contracts the EPA has awarded to the contractor in 2005 and 2006.</td>
<td>Federal Procurement Data System</td>
</tr>
<tr>
<td>Cincinnati</td>
<td>Coded &quot;1&quot; if the contract was awarded by the Cincinnati Procurement Division; coded &quot;0&quot; if not.</td>
<td>EPA - Active Contract Database</td>
</tr>
<tr>
<td>Employees</td>
<td>The total number of employees in the contractor's organization.</td>
<td>Federal Procurement Data System; Dunn and Bradstreet's Million Dollar Database</td>
</tr>
</tbody>
</table>
Table A.4 Chapter 5: Survival Analysis Estimation

<table>
<thead>
<tr>
<th>Governance Costs</th>
<th>Cox Hazard Model Length</th>
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</thead>
<tbody>
<tr>
<td>Asset specificity</td>
<td>-0.161</td>
</tr>
<tr>
<td></td>
<td>[2.13]*</td>
</tr>
<tr>
<td>Bids</td>
<td>0.094</td>
</tr>
<tr>
<td></td>
<td>[1.03]</td>
</tr>
<tr>
<td>Technical consulting</td>
<td>-1.407</td>
</tr>
<tr>
<td></td>
<td>[5.42]**</td>
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</table>

<table>
<thead>
<tr>
<th>Relational Governance</th>
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</thead>
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<tr>
<td>Recent Contracts</td>
<td>0.221</td>
</tr>
<tr>
<td></td>
<td>[2.70]**</td>
</tr>
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</table>

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Cincinnati</td>
<td>-0.326</td>
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<tr>
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<td>[1.49]</td>
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<tr>
<td>Employees</td>
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<td></td>
<td>[0.47]</td>
</tr>
<tr>
<td>Constant</td>
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<td>[13.17]**</td>
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| Observations | 125         |

Absolute value of z statistics in brackets
* significant at 5%; ** significant at 1%
Table A.5 Chapter 5: Results of Two-Stage Least Squares Estimation

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<th>Two-stage Least Squares</th>
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<tr>
<td></td>
<td>First-stage</td>
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<td>Cost-plus</td>
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<td>Instrument</td>
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<td>Cost Plus</td>
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<td>Governance Costs</td>
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<tr>
<td>Asset specificity</td>
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<td>0.443</td>
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</tr>
<tr>
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<td>[4.17]**</td>
<td>[1.55]</td>
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<tr>
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<td>[0.95]</td>
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<tr>
<td>Organization Type</td>
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<td>Nonprofit</td>
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<td></td>
</tr>
<tr>
<td>Relational Governance</td>
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<td></td>
</tr>
<tr>
<td>Recent contracts</td>
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<td>-0.308</td>
<td></td>
</tr>
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<td>[4.89]**</td>
<td>[2.02]*</td>
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</tr>
<tr>
<td>Controls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>0.56</td>
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</tr>
<tr>
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<td>[1.70]</td>
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</tr>
<tr>
<td>Employees</td>
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<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[2.47]*</td>
<td>[0.80]</td>
<td></td>
</tr>
<tr>
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<td>-0.718</td>
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</tr>
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<td></td>
<td>[1.58]</td>
<td>[1.75]</td>
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</tr>
</tbody>
</table>

Robust z statistics in brackets
* significant at 5%; ** significant at 1%