COMPETITION IN CONTRACTING: INDUSTRY, CONTRACT TYPE, STATUTORY EXEMPTIONS TO COMPETITION, AND CONTRACT SIZE IN THE DEPARTMENT OF DEFENSE

By

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(Under the Direction of Hal G. Rainey)

ABSTRACT

An examination of buying practices in the United States Department of Defense, the largest buying organization in the world, provides an opportunity to study competition in the military marketplace and determine if the findings are consistent with claims made in academic literature about competition in contracting. Many academics and other experts advocate the use of a market model to privatize goods and services, and attribute lower prices and increased efficiency to the operation of competition in the marketplace. Since there is no existing, mature model available to conduct a study of the effects of competition upon the defense marketplace, the first task is to develop one. The model in this study is specified with a competition variable, "number of offers," as the dependent variable and "contract size," "contract type," "industry," and "statutory exemptions to competition" as the independent variables. The results of the analysis reveal that relationships exist between the dependent and independent variables and that the differences in competitive behavior across industries are important. While facilitating a defensible answer to the research questions in this study, the analytical approach does not provide extensive explanations of the results. Descriptive data are used to analyze study results

within four frameworks – economic, management, legitimacy, and political – and provide reasonable explanations for the results of the bivariate analysis. Finally, the results of the analyses are discussed in relation to theories that are connected with privatization such as microeconomic theory, Public Choice Theory, Transaction Cost Theory, Public Management Theory, and quasi-market theory. The approach in this study tells two tales – what theory says will occur and what really happens in the Department of Defense marketplace.

INDEX WORDS: Privatization; Contracting Out; Competition; Government Contracting

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To Mark, Joseph, Kendra, Jessica, Johanna and Sarah for their unequivocal support, understanding and encouragement.

TABLE OF CONTENTS

Page

LIST OF TABLES

Page

CHAPTER 1

INTRODUCTION

This study examines buying practices in the United States Department of Defense, the largest buying organization in the world, to analyze the concept of privatization in relation to four frameworks (economic, management, legitimacy, and political), all of which are of great import within the discipline of Public Administration. Privatization has become a common practice with far-reaching effects on the delivery of public goods and services and the citizenry at large. There are many definitions of privatization, but most broad definitions encompass the concepts of reducing public ownership of property and providing public services more efficiently by using the private sector (Handler, 1996), and using a variety of arrangements under which activities performed by the government are turned over to the private sector (Sullivan, 1987). Prominent scholars in Public Administration have described it as the removal of government from spheres of activity (Ott, 1991), something that controls the public sector by replacing it (Pirie, 1988) and the government relying on private partners to do public work (Kettl, 1993). Privatization, especially as implemented internationally in both developed European countries and underdeveloped third world nations, can constitute action involving an entire economy or an economic sector; it can also focus on individual functions -- the normal application in the United States -- and can take many forms like contracting, vouchers, grants, tax expenditures, loans, regulations, etc. This study discusses privatization in terms of contracting out or “retaining

responsibility for collective financing, but delegating authority to the private sector" through use of a contract vehicle with a non-governmental organization (Handler, 1996). In this privatization methodology, the government maintains ultimate responsibility for providing the good or service, but transfers the production process to the contractor for implementation.

A large body of literature that spans many disciplines has evolved around privatization. While many diverse theories are included in the privatization debate, no single, comprehensive privatization theory has emerged. Early literature for the privatization/contracting out phenomenon was heavily influenced by an ideological belief that contracting out was more efficient and would save money. Under a scenario akin to one that Adam Smith would espouse, competition in the marketplace imposes an order on self-interested buyers and sellers in the marketplace for government contracts, ensuring that the goods and services that the citizenry desires are provided in the appropriate quantity. Additionally, the "invisible hand" of the marketplace works to aggregate the desires of the individual citizens, transforming those desires into socially acceptable choices and behavior (Smith, 1910). Three areas of economic thought – microeconomics, Transaction Cost Theory, and Public Choice Theory – provide much of the substance of the economic dialogue. Many academics and other experts advocate the use of a market model to privatize goods and services, and attribute lower prices and increased efficiency to the operation of competition in the marketplace. In the academic literature, some discussions about competition oversimplify its role, while others simply assume its existence in all markets. But does competition always exist in the marketplace? Are there contingencies that impact competition? Does competition operate consistently in the marketplace?

There are no definitive answers to these questions. Some scholars believe that competition is the most important factor in privatization, and government entities must be

creative in looking for ways to foster competition (Savas, 2000). Other scholars believe that competition alone is not enough to produce lower cost and increased efficiency – adequate specifications and contract management are also factors (Kettl, 1993; Rainey, 1997; Siegel, 1999; Chi, 1998; Wallin, 1997; Hodge, 1996; Sclar, 2000). Still others believe that the microeconomic argument in general is too simplistic and argue that the basic assumption that the market is competitive is incorrect (Sclar, 2000; Kennedy, 2001).

Another significant aspect of the discussion relates to transaction costs. Many academics believe they are critical to the decision to privatize or not (Masten, 1999; Coase, 1960; Sclar, 2000; Williamson, 1975, 1981; Thompson, 2000(b); Brown, Potoski and Van Slyke, 2005; Brown and Potoski, 2003a, 2003b, 2003c, 2005; McGuiness, 1994). Others question whether or not transaction costs, a concept developed based on an examination of private industry, apply to government transactions at all (Williamson, 1981; Rainey, 1997). Still others recognize the importance of transaction costs but worry that the government does not even take them into account when considering make or buy decisions (Prager, 1994; Sclar, 2000).

Public Choice Theory represents another area of disagreement among scholars. Those who support Public Choice Theory believe the microeconomic argument that competition in the marketplace exists and promotes lower cost and efficiency; they examine the behavior of public decision makers and believe that bureaucrats act in their own self-interest and cause market failures such as monopoly, free riding, logrolling, rent seeking, and capture through actions such as restricting or limiting competition (Buchanan, 1983; Tullock and Buchanan, 1965; Niskanen, 1971, 1996). Another key concept in Public Choice Theory is collective choice. Some academics advocate alternative institutional arrangements such as contracting out as a method of translating the individual, self-interested choices of the bureaucracy into the collective choice of the

citizenry through the mechanism of competition and the marketplace (Ostrom, V., 1989; Ostrom, E., 1990). Despite significant discussion Public Choice Theory remains unproven; there is a growing body of criticism surrounding Public Choice Theory and the debate rages on.

Studies that have examined privatization have provided mixed results. Hodge performed a meta-analysis to examine international privatization efforts and found that privatization saved money in some industries but not in others (Hodge, 1996). Savas examined municipal services and found that contracting out is generally superior to the organic production of services; when competition is present contracted efforts are more efficient and save money. He caveats his findings with the comment that contracting is not advantageous in all cases, and recommends contracting for appropriate services under competitive conditions, as competition is the most important variable in the contracting mix (Savas, 2000). He also performed an in-depth analysis of the privatization efforts in Indianapolis and eight other cities and concluded that the Indianapolis experience was a resounding success (Savas, 2005). Sclar counters that competition does not guarantee the success or failure of a privatization effort. Rather, Sclar believes that a clear definition of the requirement and a sound knowledge of the cost basis for the requirement are key ingredients to success (Sclar, 2000). Ritchie and Kennedy edited a compilation of articles written by academics and public servants on the Indianapolis privatization program and concluded that cost savings claimed were grossly exaggerated and that the program as a whole was far from successful (Ritchie and Kennedy, 2001).

In addition to the economic discussion, a robust management discussion is ongoing in the literature. There are two main arguments advanced on the management of privatization – the generic argument that states that privatization holds no special requirements for management, and the Public Management argument that contends that privatization offers many management

challenges, an argument that is enjoined by many traditional Public Administration scholars. Privatization has had a tremendous impact on intellectualizing within the two frameworks under analysis and offers almost unlimited opportunity for research that will bolster or undermine the arguments.

The New Public Management and reinvention frameworks offer a generic, practitioner-oriented perspective, building on the work of public choice, principal/agent and transaction cost theorists and expounding that government organizations should focus on "letting managers manage;" measuring outputs and performance; devolving authority and empowering employees; maximizing the use of private ownership, contracting out and competition in the provision of public goods and services; imitating private sector practices; and stressing cost-cutting, efficiency and cutback management (Kamensky, 1996; Williams, 2000; Gore, 1993). This paradigm holds that any distinction between public and private organizations is artificial and that the common dimensions among all organizations should provide the basis for theory and the prescription for managerial action. In this view, privatization implies little managerial impact for public administrators.

There is some support in the literature for the generic perspective. There is an on-going discussion of the problem of "sector blurring," a commonly recognized condition that highlights the fluid and changeable nature of the line drawn between public and private organizations (Daft, 1995; Rainey, 1997; Kettl, 1994), and the difficulty of defining what constitutes a "public" versus a "private" organization and identifying their characteristics (Rainey, Backoff and Levine, 1976; Rainey and Bozeman, 2000). Herbert Simon's search for the "one best way" to manage both public and private organizations evolved to Thompson's contingency theory approach to management that used goal consensus and technical knowledge among managers as the

explanation for all organizational behavior rather than the public/private distinction, although such a distinction can be accommodated under this view (Rainey, 1997). Additionally, complex networks and conglomerates of public and private organizations, both profit and not for profit, are increasingly used to provide public goods and services (O'Toole, 1996; Milward, 1996) and in relation to these structural arrangements it is hard to tell where the private organizations end and public organizations begin or vice versa.

In the face of much disagreement in both the economic and management literature and the absence of a comprehensive theory of privatization, what do government managers do when faced with the need to make informed contracting decisions? What information is available on when and within which markets competition is available to provide associated benefits? This study examines four variables to determine if they have a relationship with the level of competition that exists across the ten industries that form the Department of Defense marketplace. The study has two goals – to test the hypotheses of this study, and to identify variables that predict how competition will behave. The study will consider the points of view of both the theorist and the practitioner. Are there two separate and divergent stories -- what theory says will happen, and what really happens? Which story do the data support? By looking for answers to these and similar questions, the study identifies areas for further study and provides useful information for current government managers faced with privatization decisions of their own.

This study provides an analysis of the level of competition achieved through contract actions awarded by all organizations within the Department of Defense. The examination offers a rare glimpse into a massive data population that has not been the object of much academic scrutiny to this point. Department of Defense contract data are divided into ten industry groups,

which represent approximately 85 percent of the goods and services purchased by the Department of Defense: aircraft; ships; vehicles; weapons; space; construction; electronics; food; healthcare; and services. The dependent variable, number of offers received, is analyzed in relation to four independent variables: contract size, measured by the dollar amount of the contract; contract type, measured by the percentage of use of four different contract types; statutory exemptions, measured by the percentage of use of seven categories of exemptions from competition authorized by the Competition in Contracting Act; and finally, the ten industries themselves.

The results of the study are examined from the economic, management, legitimacy, and political viewpoint to determine what the data support and do not support in relation to each framework. Descriptive data that capture Department of Defense buying habits and trends provide much of the basis for this analysis.

This study broadens the discussion about privatization in a number of ways. First, the study determines whether or not the independent variables are statistically related to competition. Second, most of the discussion surrounding privatization has revolved around local governments and a myriad of services. An examination of the Department of Defense marketplace moves the discussion to the federal level, and introduces markets that have not been studied extensively in the literature – industries that support the military market and provide such products and services as complex weapons systems, state of the art technology, fighter aircraft, nuclear submarines, and support to the troops on the battlefield. Third, the study develops a model to examine competition that can be replicated in other environments for future studies. Fourth, when examined within the frameworks chosen to structure this study, the findings and analysis add

information to the existing body of literature that will spur further discussion and provide some illumination about the nature of competition, a key ingredient in the privatization mix.

The study is divided into six chapters. Chapter 1 introduces the rationale for the study topic and provides a description of the Department of Defense contracting environment, including a discussion of some of the statutes and regulations that govern the contracting process. Chapter 2 provides a literature review of the ten industries that comprise the majority of the defense marketplace. The information in this chapter provides many facts that support assumptions and conclusions used to explain the findings in the study. Chapter 3 contains a broad overview of privatization literature and frames the study in terms of economic, management, legitimacy, and political issues. The library of literature on the topic of privatization is vast, and this chapter limits the review to the areas covered within the scope of the study. Chapter 4 discusses the data and methodology used to perform the study, and provides hypotheses about the relationship between the dependent variable (number of offers) and independent variables (contract type, statutory exemptions to competition, contract size, and industry). This chapter also explains how the variables are conceptualized. Chapter 5 provides the findings of the study, data analysis results and descriptive statistics. A significant finding is that competition varies by industry and does not always behave consistently. Additionally, contingency table analysis shows that the independent variables are related to the dependent variable, number of offers. Chapter 6 discusses the study results in relation to the theories and concepts examined in the earlier literature review, and the broader application in the field of Public Administration. Based on the preceding analysis and findings, the study draws conclusions about the interrelation between Public Administration and privatization. Many questions are raised that point the way towards future studies.

1.1 Background

The Department of Defense is the largest buying activity in the world, contracting for $180.6 Billion of goods and services in fiscal year (FY) 2002, $219.5 Billion in FY2003, and $241 Billion in FY2004 (Directorate of Information Operations and Reports, 06).

The Merriam-Webster Dictionary defines competition as "the effort of two or more parties acting independently to secure the business of a third party by offering the most favorable terms." Problematically, the Federal Acquisition Regulation (FAR) does not define competition in Part 2, which covers other definitions, or in Chapter 6, which discusses competition requirements. FAR 15.403-1(c)(1)(i) and (ii) do contain a definition of "adequate competition:"

> "Adequate price competition. A price is based on adequate price competition if --
>
> (i) Two or more responsible offerors, competing independently, submit priced offers that satisfy the Government's expressed requirement and if --
>
> > (A) Award will be made to the offeror whose proposal represents the best value where price is a substantial factor in source selection; and
> >
> > (B) There is no finding that the price of the otherwise successful offeror is unreasonable. Any finding that the price is unreasonable must be supported by a statement of the facts and approved at a level above the contracting officer;
>
> (ii) There was a reasonable expectation, based on market research or other assessment, that two or more responsible offerors, competing independently, would submit priced offers in response to the solicitation's expressed requirement, even though only one offer is received from a responsible offeror and if --
>
> > (A) Based on the offer received, the contracting officer can reasonably conclude that the offer was submitted with the expectation of competition, *e.g.*, circumstances indicate that --
> >
> > > (1) The offeror believed that at least one other offeror was capable of submitting a meaningful offer; and
> > >
> > > (2) The offeror had no reason to believe that other potential offerors did not intend to submit an offer."

The question remains if the Federal Acquisition Regulation's definition of adequate competition is compatible with the economic concept of adequate competition. Within the economic framework, the market is portrayed as having numerous buyers and sellers, who are highly knowledgeable about the products in the marketplace and make rational buy and sell decisions (Marshall, 1961). The market is in equilibrium in price and market share. Considering this concept, it would seem that two offerors would not provide the environment described above.

Competition is mandated in the Department of Defense because contracting entities operate under the authority of the Competition in Contracting Act (CICA), passed in 1984. The law was enacted to promote full and open competition and limit contracts that are issued under non-competitive procedures such as sole source contracts, or restrictive procedures such as small business set-aside provisions. The intent of the Act is to increase the number of offers for government contracts and generate more competition to drive down cost. CICA requires government contracting officers, the people who obligate government dollars by awarding contracts, to advertise for 15 days their intent to award any contract over $25,000 on a central website, and include general information about the proposed contract for all prospective offerors. After 15 days, the contracting officer can issue a solicitation for bids or proposals to prospective offerors; the solicitation must remain open for at least 30 days. CICA is implemented in Part 6 of the Federal Acquisition Regulation. FAR Part 6.3 identifies the situations when it is allowable to exempt contract actions from the Competition in Contracting Act. When an exemption applies, competition can be restricted or contracts can be awarded non-competitively. This study examines Department of Defense contracting data across ten industries to examine the extent of competition in each of the industries. The mission of the Department of Defense is to provide

military forces to deter war and protect the security of the United States. Within the last 10 years, the operational tempo of the department has risen to a very high level. Due to the operational demands of world events and the political will to privatize, contracting increased steadily over the seven years from $128.4B in fiscal year 1997 to $241B in 2004, an increase of approximately 88 percent (DIOR, FY06). As the number of contract employees increased, the number of civil servants decreased including the contracting workforce, who performs all of the additional contracting work. The FAR says that only contracting officers can bind the government by entering into, administering, terminating contracts and making related determinations and findings. Contracting officers often face pressure and conflicting goals that directly impact the level and quality of competition in Department of Defense contracting.

In Department of Defense contracting, the customer, or end user, for contracted services has mission accomplishment as a primary goal – he wants to get what he needs as quickly as possible so he can get his job done. There are many customers for contract services in the Department of Defense, including program managers for major weapons systems or equipment; installation or garrison commanders who manage military bases in the United States and overseas; Department of Defense agencies; and functional organizations that include logisticians, intelligence personnel, public works departments, etc. Although Department of Defense customers certainly care about getting the best price and high quality for the taxpayer dollar, they are charged with the day to day business of the military services and they often operate in a hurried or even frantic environment, especially when reacting to unforeseen contingencies. During the timeframe under examination in this study, the Department of Defense was waging the Global War on Terror and taking military action in Afghanistan and Iraq. When operating in this mode, customer goals often conflict with the contracting office's goal to get as much

competition as possible because a competitive action is usually more time-consuming than a non-competitive one.

Department of Defense customers are often very pressed for time when they approach their contracting offices for support as they are often reacting to contingencies or world events. Contracting offices that contract for items such as weapons systems or research and development have very long-term horizons and timelines, while contracting offices supporting operations-oriented parts of the mission buy for customers with a much more immediate need. Often, customers perform the job of handling the organization's contract requirements as a duty in addition to their normal duties, which can result in a very high workload and a lack of focus on developing the requirement that defines the contract. Especially in light of increased privatization and the downsizing of the Department of Defense workforce in recent years, the customers may literally not have the time or the expertise to define the requirement and perform market research adequately as required by acquisition regulations, because their primary duties take precedence. This shortcoming on the part of the customer can negatively impact the contracting officer's ability to award a contract under full and open competition procedures.

Especially in relation to service contracts, customers frequently do not want to generate competition because they want continuity of service with the contractor who currently performs the job (Fernandez and Rainey, 2006). A change of contractor entails a learning curve, often quite steep, that the busy customers do not want to endure. Additionally, the sheer magnitude of the contracted workforce in Department of Defense organizations ensures that there is often a great deal of interaction between the customers and the contractors who provide services, often on a day to day basis. Department of Defense workers develop friendships and working relationships with the contractors that they do not want to interrupt or change. Government

workers become emotionally attached to the contractor workforce and are concerned over job security for their co-worker contractors if the incumbent should lose a competition. Finally, customers hesitate to go from the known entity to the unknown entity, even though overall better performance might result.

Congress sometimes restricts competition by statute, as is the case with the Small Business Administration's 8(a) program, which allows the non-competitive award of contracts to small and disadvantaged business, and the Randolph-Sheppard Act, which was enacted to provide opportunities for blind vendors to operate their establishments on federal properties for an indefinite period. The recently enacted Veterans Benefit Act of 2003 provides authority for contracting officers to restrict competition to companies owned by disabled veterans. These three examples show how Congress generates goals that conflict with the goal of full and open competition.

Both the department and the agencies issue annual competition goals for each contracting organization that awards or executes contracts for supplies or services, and apply significant pressure to those offices to meet the goals, which are expressed as a percentage of total dollars available for competition that are awarded by the contracting office. At the same time, the department and agency issue socio-economic goals that are closely monitored by the department, agency and the Small Business Administration. Socio-economic goals are expressed as a percentage of total dollars awarded by the contracting agency to numerous categories of business including small business, small and disadvantaged business, women-owned small business, disabled veteran owned small business, etc. Typically, contracting offices meet socio-economic goals through the use of programs such as the 8(a) program, and sole source awards to small and disadvantaged businesses, hub-zone businesses, and veteran-owned businesses. The ability to

meet overall competition goals, then, is sometimes hampered by the need to meet socio-economic goals. Contracting offices restrict competition by performing small business set-asides and statutorily approved sole source awards to different categories of small business, shrinking the pool of dollars available for full and open competition.

As described earlier, the Competition in Contracting Act, as implemented in the Federal Acquisition Regulation, requires contracting officers to try to obtain competition to the maximum extent. Contracting officers have varying degrees of motivation and skill to do that. When the customer does not perform adequate market research as part of the requirements development process, that job often falls to the contracting office. Contracting personnel often do not have the technical knowledge required within the customer's area of technical expertise to perform adequate market research or develop sources for specific products or services.

The very nature of the work that the Department of Defense performs limits competition in some commodities. Within some industries, such as shipbuilding, there are very few contractors to support the Navy's needs. The very high facilities and capitalization requirements needed to build a shipyard, buy the necessary equipment, etc. to support entry into the shipbuilding business are prohibitive. As another example, the weapons industry is highly regulated and those regulations sometimes provide great competitive advantage to those already in the industry, precluding new entrants from breaking into the market.

For many of the products and services that the Department of Defense buys, the department is restricted to the use of funds that expire each year. Based on the budget cycle, the way that money is transferred from Congress to the department, to the services and down through the individual services' organizational chains, it is often very late in the fiscal year before customers at the working level actually have money to spend. The cumbersome and slow

money distribution process creates a sense of urgency for the customers. Contracting officers are the only government employees authorized to obligate government money by awarding a contract, and they are often are placed in the untenable position of trying to justify awarding a non-competitive contract rather than let their customers' funds expire, although lack of planning and expiring funds are explicitly disallowed as justification for non-competitive procedures.

Finally, Department of Defense procurement regulations and processes themselves create barriers to entry into the government marketplace. The department requires all vendors to register with a central registry; attain numerous codes, such as the Commercial and Government Entity (CAGE) code; utilize electronic commerce procedures; and accept electronic payments. While some of these processes are not overly difficult in and of themselves, they collectively require substantial time to perform and some level of resources to support, which can be especially challenging to very small businesses. Additionally, cost contracts have specialized requirements for contractors such as the use of approved accounting systems, and classified contracts have stringent security and facility requirements. Last, the need to know myriad government regulations, in contracting as well as other functions, requires contractors to spend time and money on training, legal support, and consulting fees.

Considering all of the above, the government contracting process itself creates numerous barriers to industry, creates disincentives for numerous potential participants, and impacts the ability of the government to achieve the high rate of competition that the Competition in Contracting Act is designed to foster, and that economic theory credits for the cost savings and other benefits associated with privatization. As this discussion shows, competition is not always maximized within the Department of Defense for many reasons.

CHAPTER 2

THE TEN INDUSTRIES THAT SUPPORT THE DEPARTMENT OF DEFENSE: A LITERATURE REVIEW

Examination of the database used for this study shows that approximately 80-85 percent of Department of Defense purchases, depending upon fiscal year, fall into ten categories: aircraft; construction; electronics; vehicles; healthcare; ships; weapons; food; services; and space. All other purchases can be combined into an eleventh, miscellaneous category that includes items such as fuels, lubricants, photographic equipment and supplies, production equipment, textiles and clothing, transportation equipment, containers and handling equipment, materials handling equipment, and all other supplies and equipment that do not fit in one of the other categories.

The discussion below provides a description of each of the ten industries and is germane to this study for many reasons. First, by providing some level of understanding of the dynamics within each industry, the descriptions will help explain the two stories examined in this study – what theory says will happen and what really happens. Second, the vast differences among the industries, such as size and scope of the industries, products or services provided, level of commerciality and specialization for the military market provide the context for competition within each industry and the Department of Defense as a whole. Third, the discussion highlights aspects of each of the industries that it is reasonable to expect will have a significant impact on

the level of competition within the industries, such as requirements for capitalization, barriers to entry into the industry, and the number of businesses at the prime and subcontractor tiers within industries. Fourth, the description of each industry provides information that will be used in the analysis of descriptive data examined in the study, such as the amount of political oversight within the industries, challenges facing the industries, and workforce issues.

2.1 Aircraft

The aircraft industry is divided into four sectors: commercial fixed-wing; military fixed-wing; rotorcraft; and aircraft jet engines (Bellizan, et al, 2004). Although the military does purchase some commercial aircraft, this study will focus on the military fixed-wing, rotorcraft and jet engine sectors of the industry as they comprise the predominant part of the military market.

The military fixed-wing aircraft sector includes categories of planes such as strike aircraft, fighter aircraft, bombers, transport aircraft, unmanned vehicles, commercial aircraft that are modified to meet military specifications, and developmental aircraft for specific missions. There are three primary suppliers in the military fixed-wing sector: The Boeing Company; Northrup Grumman; and Lockheed Martin. Industry analysts recount numerous challenges to the industry including lack of adequate government funding to implement the military's replacement strategy, uncertainty from year to year about levels of funding, and political considerations associated with the perception that the military wants to spend more money on fixed-wing aircraft programs than is required by the actual threat (Bellizan, 2004; Andrews, 2000).

The rotary sector includes both helicopters and tilt-rotor aircraft and is dominated by three manufacturers in the US (Sikorsky Aircraft Corporation, Bell Helicopter, and The Boeing

Company) and two European manufacturers (Agusta Westland and Eurocopter). The sector currently faces many challenges such as overcapacity, lack of government investment, decrease in procurement dollars for rotary aircraft, shortage of qualified personnel across the industry, and debate over the future role of rotary wing aircraft in combat based on the vulnerability of the low-flying, slow aircraft to hostile fire. Additionally, the European manufacturers are mounting a significant challenge to the American manufacturers in the international rotary-wing marketplace, spurring the domestic firms to seek protection from the US government, which has not been forthcoming.

The military jet engine sector includes both large and small gas turbine engines, turboprop engines, and an emerging market for unmanned vehicle engines. There are four main players in the jet engine sector: the Aircraft Engines Division at General Electric, and Pratt and Whitney, domestically; and Rolls-Royce and SNECMA internationally. Competition is fierce among the four, causing slimmer profit margins, increased collaboration, and sharing of some technologies, although technology transfer across international boundaries is impacted by import/export barriers. Additional challenges such as high research and development costs and workforce shortages keep pressure on the sector (Bellizan, 2004; Andrews, 2000).

2.2 Construction

The construction industry in the US is vast and represents approximately 7.6 percent of the Gross Domestic Product (US Department of Commerce, Census Bureau, 1997), with an annual value exceeding $800B in 2003 (US Department of Commerce, US Census Bureau, 2003). The industry is divided into three sectors: general, or building construction, which includes residential, industrial and commercial buildings; heavy construction, including

construction of infrastructure such as sewers, roads, bridges, dams, etc; and the trade industries such as carpentry, plumbing, painting, electrical, etc. The industry is characterized by a very large number of small businesses in some sectors with a small number of dominant large businesses in others.

In a 2004 study of the industry, Lovric and his team found that competition within the domestic industry is affected positively by the very large number of businesses within the industry, reasonably low up-front capital requirements, and ease of entrance and egress from the industry. Competition is negatively affected by low profit-margins, which provide little inducement for some companies to bid on low return projects (Lovric, 2004). The international construction industry has a similar overall size structure to the domestic industry. Although the US industry is not dominant in the international construction arena and lags behind European firms, the United States does dominate the design sector of the international construction industry, spurred by the increasing popularity of the design/build method of project delivery, where one contractor manages all aspects of a single project from beginning to end. This method alleviates the need for the customer to manage numerous contracts and contractors to complete a single project.

The construction industry plays a vital role for the military, which depends on the industry to build and maintain the infrastructure that allows the military to project power. The industry provides support to the nation's military installations, and provides housing for service members on and off military bases.

There are some challenges in this industry, although both the short and long-term outlook for the industry is favorable. A primary concern within the industry is the availability of skilled labor. In addition to an aging workforce and fewer young people entering the industry, phase-out

of industrial arts programs in the nation's schools, desire of the industry to eschew union labor for less expensive open shop labor, and the shortage of apprenticeship training programs exacerbate the labor issue. Other challenging issues within the industry include the high cost of liability insurance, lack of willingness by Congress to invest in the country's infrastructure, fluctuating prices for raw materials and end products, cumbersome labor laws that regulate labor wages such as the Davis-Bacon Act, safety laws, and low rates of research and development (Lovric, et al, 2004).

2.3. Electronics

The electronics industry is a strong driver in the US economy. The industry is vast and continues to grow at a fast rate, with annual sales in the trillions of dollars. Although the technology delivered by the electronics industry is mainly responsible for the tremendous success and superiority of the US military, and is critical to national security, Anderson estimates that the military accounts for only about 3 percent of the industry's sales and has little influence over the industry itself (Anderson, 2004). Belt provides an even lower estimate of 1 percent (Belt, 2005).

There are a number of ways to define the industry. Allen defines it as having three sectors – semiconductors, computing devices, and telecommunications. He states that semiconductors represent the nation's largest manufacturing segment that includes many firms both small and large. Only a few large businesses concentrate on the high-end chips within the industry, whereas the low end chips have a vast national and international supplier base. Within the computing device sector, The US is the global leader and industry analysts predict a growth rate within the sector of over 8 percent for the next 30 years (Allen, 2000). The supplier base for

the computing device sector includes companies of all sizes, and a robust second and third tier supplier base provides components, assemblies and spare parts. There are many aspects to the telecommunications sector and there has been tremendous growth in communications equipment spurred by the military's increased use of the many products that the industry produces. Existing infrastructure was built around telephone communications and is not sufficient to support the new telecommunications technologies. Additionally, the former Bell Telephone companies comprise the existing supply base as local service providers, restricting competition in this niche. The sector is further defined by three rapidly growing segments, spurred by the phenomenal growth of the Internet – fiber-optics, wireless communication and cable. Although there are numerous new entrants into the communications sector of the electronics industry, the market is dominated by a small number of very large companies and the sector continues to consolidate. Others define the industry in terms of the semiconductor sector itself, which all agree is the dominant and most critical sector (Anderson, 2004; Belt, 2005). According to Anderson, the hallmark of the US semiconductor industry has been innovation and entrepreneurship. In 2004, US firms accounted for $100B in sales, or 47 percent of total semiconductor sales (Belt, 2005)

There are numerous challenges for the electronics industry. There are extensive barriers to entry into the semiconductor segment, in particular. Due to the extremely high capital requirements (between $3B and $4B) to build a vertically integrated production facility, there is a continuing trend towards off-shore manufacturing facilities, many of which are located overseas at lower cost to the manufacturer. The military has concerns about the off-shore industrial base's ability to remain secure and provide surge production in a time of crisis or war, and dislikes being dependent upon other nations. The level of research and development investment within the US has been declining across the electronics industry and threatens to

endanger our competitive advantage. Finally, the decrease in Ph.D's and new entrants into the science and engineering career field is having a negative impact on the industry as a whole (Anderson, 2004; Belt, 2005). The corresponding increase in entrants into the science and engineering career fields in emerging markets exacerbates the concern.

2.4 Vehicles

The Department of Defense is a buyer of numerous types of vehicles, including commercial automobiles, trucks, and vans. The General Services Administration centrally manages the commercial fleet for the federal government. For purposes of this study, we will describe the vehicle industry as that which provides Land Combat Systems (LCS), and specifically, combat vehicles, for the military.

A broad industrial base supports the LCS industry and includes not only vehicles, but weapons and support equipment (Clifford, 2005). After the end of the Cold War and in light of the declining military budgets associated with that timeframe, there was substantial consolidation within the LCS industry, and US prime contractors were reduced in number from nine to two or three, depending on the vehicle. Combat vehicles represent a sector of the LCS industry and include heavy (over 40 tons) armored vehicles, light (less than 20 tons) armored vehicles and tactical wheeled vehicles (Barnhart, 2004). There are currently two US prime manufacturers within the combat vehicle sector that travels on tracks (i.e., tanks) – General Dynamics Land Systems (GDLS) and United Defense Limited Partnership (UDLP), and three US prime manufacturers within the combat vehicle sector that travels on wheels – GDLS, UDLP and Textron. There is a substantial second and third tier of manufacturers supporting the three prime manufacturers. GLDS has been the only manufacturer of the M1 Abrams tank for over 30 years,

while ULDP is the leading manufacturer for medium-weight combat vehicles (20-40 tons) and track suspension systems. The third competitor in this sector, Textron, has recently developed the Armored Security Vehicle (ASV), which fills a niche and demonstrates that there is some very limited opportunity within the industry (Clifford, 2005). While the prime contractor base in the combat vehicles sector is extremely small, competition is fierce as evidenced by recent procurements for the Army's Stryker Vehicle and the Marine Corps' Expeditionary Fighting Vehicle.

The combat vehicle sector faces many challenges. Although the workforce has generally been stable, the aging of and pending retirements within the highly-skilled workforce are problematic. There is excess production capacity within the overall industry as the military is not developing new programs and US prime LCS contractors are increasingly looking towards the international market for growth potential. The new systems that are currently in development and production are increasingly complex, such as the Army's Future Combat System, and the services are developing new processes to manage those systems, such as using lead system integrators as prime contractors instead of the manufacturers themselves (Barnhart, 2004). In this role, the integrators manage manufacturers under a sub-contract or teaming arrangement, relieving the government of the requirement to do so. Finally, as production spending decreases, the industry is coming more and more to rely on rebuilding or reconstitution work on the vehicles that are returning from the battlefront, and maintaining the returning vehicles, causing costly changes to the production lines in the factories, while keeping the primes afloat.

2.5 Healthcare

Like many of the industries under examination here, the healthcare industry is vast, but highly dispersed over many sectors including insurance and finance, personal health care providers, public health organizations, trade and professional associations, suppliers and regulators. In 2005, US healthcare represented 15 percent of Gross Domestic Product (National Center for Health Statistics, 2005). The industry runs the gamut from single service providers to monolithic corporations, and is represented in the private, non-profit and government sectors.

The industry has changed significantly over the last thirty years. The single practitioner making a house call represents an iconic view of the industry past. Today, doctors band together in a group practice or into managed care networks, or Health Maintenance Organizations (HMO) which provide services to patients based on a contractual agreement and a flat fee charged for membership, in addition to the fees charged for medical services provided. New treatment protocols and shorter stays in the hospital have also forced a consolidation of hospitals and clinics and a decrease in the number of available hospital beds and clinics overall.

The military has numerous interests in the healthcare industry. First, the military is a primary healthcare provider for soldiers and their dependents through the military healthcare system. Second, the military has the responsibility to protect the nation's healthcare infrastructure, including the supply and communication functions. Third, the overall health of the nation and her soldiers represents a national security issue (Knowlton, 2005).

As evidenced by the continuing national debate on the topic, there are many challenges within the healthcare industry. The federal government is expending an ever-increasing portion of the budget on healthcare; the Department of Defense is expending an ever-increasing portion of the defense budget on healthcare. Costs are rising for many reasons, including the increasing

cost of pharmaceuticals, increased demand for health care products and services, and increased insurance payouts (Knowlton, 2005). Congress is extremely sensitive to healthcare as a reelection issue and has not been willing to reel in governmental healthcare spending. Another challenge is that the healthcare profession creates increased demand when it develops new treatments, surgeries and remedies. The litigious environment surrounding healthcare exacerbates the increased demand as doctors order many state of the art, expensive procedures for patients who may not really need them, in order to ensure an adequate defense against a potential malpractice suit. At the same time that new methodologies exist to provide a very high level of care to the population, approximately 45 million Americans do not have medical insurance and cannot afford the procedures (Knowlton, 2005). Government-subsidized medical facilities provide those services to the population and that cost reverberates throughout the economy. As in other industries, the healthcare industry faces shortages in well-trained personnel, especially nurses, throughout the industry.

2.6 Ships

The shipbuilding industry is comprised of three sectors – military, and large and small commercial. This study will focus on the military sector, which is multi-tiered, and includes ship manufacturing, maintenance and repair work, and parts suppliers (Wood, et al, 2004).

The “tier-1” portion of the military sector manufactures large warships including nuclear class vessels, destroyer class vessels, amphibious warships, auxiliary and support warships. This tier includes six shipyards, all of which are owned by two contractors, Northrup Grumman and General Dynamics. Additionally, the government owns and operates four shipyards at Portsmouth, Pearl Harbor, Puget Sound, and Norfolk Naval Shipyard to maintain and repair US

Navy vessels (Wood, et al, 2004; Bauer, et al, 2000). The "tier-2" portion of the military sector are primarily manufacturers of small commercial ships, some of which are used for military applications such as Coast Guard operations and transports for the US Army. Finally, there is a supporting tier to the ship manufacturers which provides materials, parts, components, systems, etc.

The entire military shipbuilding sector faces numerous challenges. The most noteworthy challenge is the excess capacity throughout the military sector. The capacity issue is exacerbated by government policy designed to maintain the ability to build nuclear warships within the industrial base, including facilities and skilled personnel, and cabotage legislation, which regulates shipments, shipping or navigation that occurs between two points within the same country. The Jones Act is the most prominent cabotage legislation, provides protection for U.S. maritime workers injured in US territorial waters, and requires the government to maintain a merchant marine fleet. Shipyards have a high political profile as they are very large employers and their fate can affect large geographic areas, making them highly susceptible to intense Congressional oversight and interference. Finally, due to the overcapacity within the industry, high US labor rates, lack of government protection, and in spite of the fact that US shipbuilders produce the highest quality warships in the world, the US shipbuilding industry is not competitive in the world marketplace and retains a one percent market share (Wood, et al, 2004).

2.7 Weapons

The weapons industry is critical to the Department of Defense's ability to project power. The industry is broad and includes sidearms that have not changed appreciably for many years, and nuclear devices. Although there are several possible ways to divide the industry, for

purposes of this study, we will define the industry in terms of weapons systems suppliers and non-systems suppliers. Governments are by far the largest customer for weaponry, including the military, and police and security forces; although there is a commercial application for weapons to support the sportsman, it is very small in comparison to government demand for weaponry and that market is dwindling.

The prime weapons systems suppliers include very large companies such as Lockheed Martin, Raytheon and Boeing, with a supporting cast of government or private laboratories and independent subcontractors at the second tier. The non-systems providers include small-arms, energetics and non-lethal weaponry suppliers, which are generally small businesses or government laboratories (Maybaumwisniewski, 2004).

The weapons systems suppliers cater to all branches of the armed forces and often operate as integrators at the system level to manage the efforts of the smaller, second and third-tier suppliers. This segment of the industry develops and manufactures new weapons systems and maintains legacy systems. The military actions in Afghanistan and Iraq have showcased a shift within the weapons industry to include services in addition to manufacturing. In the modern age, when troops move, they are accompanied by a phalanx of contractors onto the battlefield, who not only repair and maintain the sophisticated weapons systems, but operate them as well (Maybaumwisniewski, 2005).

Despite current military activity in Iraq and Afghanistan, there are challenges to the weapons systems suppliers. Many governments drew down their weaponry after the end of the Cold War and the industry has consolidated in response. Industry players are searching for global customers and international partners, raising additional challenges. Issues such as technology

transfer, loss of industrial capability to produce weaponry, loss of the industry's capability to surge production in case of crisis or war, etc. raise concerns in relation to national security.

On the non-systems supplier side, non-lethal weapons such as pepper spray, high-intensity lights and noise-producing weapons are becoming increasingly popular as they incapacitate targets yet reduce collateral damage, and save lives of both soldiers and innocent civilians. The non-lethal weapon sector is broad and includes low and high-tech players. Although the preponderance of non-lethal weapons currently in use are mostly low spectrum weapons, research and development in the directed energy non-lethal weapons arena involving lasers, radiation and infra-sound is increasing and eventually more sophisticated non-lethal weapons will join the arsenal. The small arms sector has three Congressionally-approved players (Colt, FNMI and SACO), while small companies such as Beretta provide pistols and CAPCO provides parts (Maybaumwisniewski, 2004). Energetics, the study of the flow and transformation of energy, is currently underway at government labs within the Department of Defense and Department of Energy. At this point of development of these non-lethal weapons, private industry supplies some parts to the government labs.

As described earlier, the global market for weaponry of all types has decreased. The small-arms sector has had a limited increase in demand due to the increase in security services since September 11th, and the promise and political acceptability of non-lethal weapons and energetics technology represents an emerging market within the industry. A challenge to the US government in overseeing this industry is to maintain sufficient production and surge capacity within the US industrial base in a dwindling market. Small businesses may be at particular risk as they do not have the wherewithal of larger businesses to ride out downturns in the business cycle. US policy must also concern itself with technology transfer and business mergers that

allow non-US companies to gain control over the weapons industry, which can be seen as a threat to US national security.

2.8 Food

The food industry is vast and employs over 16.5 million people. Although farming itself represents only 1 percent of GDP (Ascunce, 2005), the $1trillion that Americans spend on food represents over 13 percent of the GDP (The Food Industry Center, 2006). The industry is generally defined to include organizations that grow and process human consumables, as well as the supply chain that distributes them. While the single-family farm is an American icon, the industry has consolidated extensively. Today, only two percent of the population relies on farming as their main source of income (Ascunce, 2005). The industry crosses all sectors – private, not-for-profit and government. The government has great impact on the industry through environmental and economic policy, and by funding research. The food industry plays a critical role in our national security as it supports the nation's ability to feed its citizens and its soldiers. The US has reaped economic rewards within the industry as it has traditionally run a trade surplus. Food supplies have played a big role in the US foreign aid strategy in support of developing nations (Ascunce, 2005). The military plays different roles in relation to the food industry. It acts as a consumer when purchasing food products for its soldiers, and as a security provider when it safeguards the food supply and distribution chain against terrorist or biological attacks.

The US historically has had a very successful food industry, based on the availability of fertile land and adequate water, political support, and technological advances. The government

has consistently intervened in the industry to remedy market failures and subsidize the American farmer, and current policy continues the tradition (Akuetteh, 2004).

Despite its success, there are a number of challenges associated with the food industry. There is a growing contingent of international competitors who are blessed with fertile land and adequate water, protectionist government policies, and cheap labor. Although the US is still a heavy exporter of food products, it has also become a heavy importer of such products, threatening the trade surplus within the industry (Ascunce, 2005). Another serious challenge is security. A biological disaster or terrorist act could have tremendous health effects and place extreme pressure on the US economy. The fact that the industry is so large and geographically dispersed makes it extremely hard to secure it, while making it highly unlikely that one event would wipe out the entire food supply. Finally, the age of the average American farmer continues to grow, while the consolidation into larger farms and high cost of farm mechanization create barriers to entry into the farming sector of the industry.

2.9 Services

The service industry is vast and currently represents over 75 percent of the Gross National Product. The industry is evolving and defies a comprehensive and meaningful definition. The Standard Industrial Classification System identifies two major sectors in the US economy, the goods-producing sector and the services-producing sector, and defines the services industry as, “The branch of manufacture and trade based on performing work for others as an occupation or business. This includes hotel, repair, computer, legal, advertising, food, entertainment, health and education services.” The Encyclopedia of Management divides the service sector into six divisions, including transportation, communications and utilities;

wholesale trade; retail trade; finance, insurance and real estate; public administration; and services, and lists numerous industries within the services division. Still others tackle the service industry by examining who the services are provided for: individuals and households; or businesses and institutions (Cervone, 2004; Ahern, 2000; Kutscher, 1983).

Despite a lack of clear definition for the industry, there is agreement from all sources that services are fueling the growth of the US economy and have become a critical sector. There is also agreement that information technology is a primary force spurring the growth of the services industry. Cervone, et al, identify globalization and "complexity of management" as additional growth agents. Despite strong growth over the last ten years, many believe the potential of the industry remains largely untapped, providing fuel for many more years of growth.

The industry faces challenges, however. In order to realize continued strong growth, the services sector must maintain access to foreign markets, as the US currently maintains a competitive advantage in services in the international marketplace (Cervone, 2004). Additionally, the service industry faces the same challenge as many other industries – the ability to attract and retain skilled workers.

The Department of Defense is a major buyer of services. As Congressional scrutiny has focused on departmental performance in the cost management arena, the Department of Defense has increased privatization initiatives in an attempt to garner efficiencies and focus on core activities. In recent years the department has turned over many government-provided services to industry to perform under the auspices of OMB Circular A-76. Additionally, the technical complexity of the military's weaponry, telecommunication and electronic equipment has caused the growth of contracted service support to war-fighting missions, and it is now commonplace for service industry contractors to accompany the troops to the battlefield. Finally, as the role of

the military expands due to increased mission, and the requirement for faster response times drives military decision-making, service contractors provide the military a non-organic surge capability (Cervone, 2004).

2.10 Space

Although the space industry is still quite young, having been born in the 1960s, it plays a significant role in the national security strategy and the military power projection capabilities of the United States. The industry is much smaller than many of the other industries discussed earlier, and does not create much impact within the US economy (Romano, 2005).

The industry is consistently defined to include civil, military and commercial sectors, which generate launch manufacture and services, satellite manufacture and satellite support services. Americans are probably most familiar with the civil sector, represented by the US space program under NASA. The European Space Agency is the other dominant member of the civil space industry, and represents 17 countries. The remainder of the industry is populated with other national-level programs from countries such as Japan, Canada and Russia (Barzler, 2004). The media regularly reports events surrounding this sector including space shuttle launchings, international space station arrivals and departures, and Russian cosmonauts' travels into the far reaches of space. Discoveries made in the civil sector aboard the space shuttle and the international space station often evolve into new technology that has very diverse applications, such as Tang breakfast drink, and Velcro fasteners. The commercial sector provides the manufacturing and service-provider arm for the industry. The efforts of this sector provide many daily-use items such as cell phones, telecommunication equipment, as well as heavy launch equipment and launch services, and satellites. The military sector is comprised of military and

intelligence-gathering activities such as secure communication, navigation, reconnaissance, imagery and warning systems (Barzler, 2004; Romano, 2005). The US military space program is world-dominant and continues to be integrated into all aspects of the military structure and strategy.

The number of suppliers in the industry is dependent upon the service or product supplied. Following the moon landing in 1970, optimism and speculation fueled the growth of the space industry. But the slowdown in demand in the late 90s and the economic downturn in the early 2000s forced a consolidation within the industry. There are numerous satellite manufacturers worldwide, with five major players, and a robust second and third-tier parts supplier market. Support services suppliers represent the largest percentage of income production in the industry and the most dispersed supplier base. The US has two primary launch providers – Boeing and Lockheed Martin. The international market is providing competition in the launch arena from four additional sources (Barzler, 2004).

There are numerous challenges within the space industry. The economic downturn of the early 2000s created overcapacity within the industry, which continues today. While overcapacity exists across the industry, it is especially severe in the satellite support services and launch services arena. Overcapacity is expected to exist in the satellite services function through 2011; the launch services portion of the industry is operating at approximately 25 percent of capacity (Barzler, 2004). The US government is mitigating overcapacity to some extent by replacing or launching military or intelligence satellites to support the on-going war efforts in Iraq and Afghanistan. The nature of the industry itself provides challenges. High up-front capital investment requirements, the need for a highly skilled workforce, and security considerations together create considerable barriers to entry into the industry. Another significant challenge to

the industry involves legislation passed to prevent an unintentional transfer of technology to either friendly or unfriendly nations. The Strom Thurman National Defense Authorization Act for FY99 transferred authority for export licensing from the Department of Commerce to the Department of State. Under the Department of State's oversight the process became more cumbersome and the timeframe to issue an export license increased greatly, causing a steep decline in the sale of exported satellites across the world market (Beck, 2000). Finally, the space industry faces the same challenge as many of the industries discussed in this study – the loss of highly skilled personnel to replace an aging workforce.

CHAPTER 3

PRIVATIZATION AND PUBLIC ADMINISTRATION: A LITERATURE REVIEW

A large body of literature that spans many disciplines has evolved around privatization, or contracting for government goods and services. While many diverse theories are included in the privatization debate, no single, comprehensive privatization theory has emerged. This literature review examines the most prevalent arguments on the topic within the economic, management, legitimacy, and political frameworks.

3.1 Economic Literature

Early literature for the privatization/contracting out phenomenon was heavily influenced by an ideological belief that contracting out was more efficient and would save money. Under a scenario akin to one that Adam Smith would espouse, competition in the marketplace imposes an order on the self-interested buyers and sellers in the marketplace for government contracts, ensuring that the goods and services that the citizenry desires are provided in the appropriate quantity. Additionally, the "invisible hand" of the marketplace works to aggregate the desires of the individual citizens, transforming those desires into socially acceptable choices and behavior (Smith, 1910).

Much writing has been done within the economic discipline since Smith's era and this literature review examines microeconomic theory, transaction cost theory, principal/agent theory, and public choice theory as an impetus to privatization and its ideological base for a number of proponents. The work of some important contributors to the economic literature such as Savas, Hodge, Sclar, and Lowery is also examined.

Microeconomic theory, which rests upon a number of a priori economic assumptions, examines markets to describe how goods and services are allocated, and prices are established within the marketplace. In his discussion of the law of supply and demand, a basic tenet of microeconomics, Alfred Marshall assumes perfect competition within an unregulated marketplace where buyers and sellers agree on price. In this view, competition and the marketplace provide the most efficient allocation of resources. Marshall also assumes that participants in the marketplace always act in a rational way, and that producers will maximize profit (Marshall, 1961).

There is little documented evidence that the assumptions discussed above are universally true (Moe, 1987, 1996; Chi, 1998; Wallin, 1997). Many scholars argue that contingencies like adequate competition and effective management of privatization are needed to increase the likelihood that cost savings will accrue (Kettl, 1993; Rainey, 1997; Siegel, 1999; Chi, 1998; Wallin, 1997; Hodge, 1996). In relation to competition specifically, there is growing evidence and continuing concern that competition does not always exist in the marketplace for government services, is often inadequate, is often ignored by governmental units who want to contract with specific vendors, and is otherwise problematic (Moe, 1988; Rainey, 1997; Kettl, 1993; Siegel, 1999; Wallin, 1997; Handler, 1996; Prager, 1994; Sclar, 2000). Sclar makes the case that the economic argument for privatization is oversimplified, and argues that it is factors

other than competition that ultimately define the success or failure of contracting efforts, including establishment of a long-term, productive relationship with the contractor, "technological constraints" of the contracted service or product, and transaction costs (Sclar, 2000).

3.1.1 Transaction Cost Theory

Numerous transaction cost theories examine the decision to produce a good or service within an organization or to purchase or contract for the good or service from outside the organization. Generally, these theories deal with private organizations and there is some question about their general applicability to government, based on the government's lack of profit motive and concepts like separation of power and accountability (Williamson, 1981; Rainey, 1997).

Some tenets of transaction cost theory have ramifications for the governmental decision to contract or to provide goods and services in-house. When anticipated cost savings support the decision to privatize, government organizations should consider transaction costs when determining the scope of anticipated savings. However, the lack of government expertise in estimating transaction costs often leads government organizations to assume that the effects of competition, efficiency, and the workings of the market place will outweigh the costs associated with the process. As requirements get more complex based on the size or scope of the tasks, the structure (i.e., network, conglomerate) and contract type, and as risk increases, transaction costs rise. There is little evidence to support the assumption that government organizations are considering transaction costs in economic analysis in support of the privatization decision, or that they are performing any economic analysis at all (Prager, 1994; Sclar, 2000).

Brown, Potoski and Van Slyke believe that the success or failure of contracting relies on the interaction of values, institutions, and markets and relate each of the three to different "research traditions" – values relate to public affairs and strategic management, institutions relate to public law and public administration, and service markets relate to economics (Brown, Potoski, Van Slyke, 2005). They recommend examining contracting within the framework of Transaction Cost Theory, and recommend evaluating two specific transaction costs -- asset specificity and ease of measurement (Brown, Potoski and Van Slyke, 2005; Brown and Potoski [2003a, 2003b, 2003c, 2005). Coase states that in addition to the costs of production, organizations must consider the costs associated with actions such as defining the organization's needs, preparing and negotiating contract arrangements, overseeing performance, and managing contracts (Coase, 1937). Transaction costs accrue as contract mechanisms become more complex, as the number of providers increases (Williamson, 1975), as information asymmetry increases (Thompson 2000b; Rainey, 1997) and asset specificity increases (Williamson, 1981).

Information asymmetry becomes a factor when all parties to a contract action do not have access to the same information about the transaction, and there are costs associated with ensuring that all parties to the transaction have the same information. Within the context of contracting, we might assume that an incumbent service provider might have the advantage of information asymmetry when the work that he performs every day goes out for re-competition. The time and effort (transaction costs) required to equalize the knowledge of all potential bidders could be quite large, if it is even possible to achieve at all. Williamson describes this situation as one of "information impactedness," and posits that the impact increases as more parties, such as buyers, sellers, agent, subcontractors, etc, become associated with the transaction (Williamson, 1975).

McGuiness defined asset specificity as the extent to which investments made to support a particular transaction have a higher value to that transaction that they would if they were redeployed for any other purpose (McGuiness, 1994). Within the DoD environment, it is easy to imagine that specialized equipment used in a military weapons program would have very limited value or application outside of that environment. Williamson identified six types of asset specificity including site specificity, physical asset specificity, human asset specificity, brand names, dedicated assets, and temporal specificity (Williamson, 1985). Asset specificity can provide a competitive advantage to an incumbent in much the same way as described above in relation to information asymmetry (Brown, Potoski and Van Slyke, 2005). In the case above, specialized equipment represents a sunk cost to the incumbent and could create a barrier to entry for some parties who would like to join into a contract for military weaponry, increasing the potential for opportunistic behavior on the part of the incumbent.

The basic tenet underlying Transaction Cost Theory is that sometimes the costs of transactions – reaching and enforcing agreements – are substantial enough to reduce or negate the benefit of utilizing the agreements in the first place (Masten, 1999; Coase, 1960; Sclar, 2000). Sometimes transactions fail because individuals have limited rational abilities, and they do not always live up to the promises and agreements made in institutional arrangements like contracts -- concepts that Williamson (borrowing from Simon) labels “bounded rationality” and “opportunism.”

The transaction cost concept provides numerous opportunities to explain the working of competition in the award and performance of government/commercial contracts. Concepts such as uncertainty, small numbers trading, and asset specificity may help the researcher understand what government service delivery vehicles may be appropriate within industry groups with

different levels of competition (Aubert and Weber, 2001). Within the individual industry discussions in Chapter 2, many instances of asset specificity were mentioned including specialized equipment and facilities, and specialized labor skills. When competition within a specific industry is low, asset specificity may provide some rationale to explain it.

Another tenet of Transaction Cost Theory is that transaction costs rise as the complexity of the contract arrangement rises. Two elements of complexity of a contract transaction are contract type and contract size, which are two variables under examination in this study. If contract size and complex contract types are high in an industry where competition is low, high transaction costs might provide a reasonable explanation for the results.

3.1.2 Agency

Principal/agent theory provides another perspective on the privatization issue and is an area of economic theory that is most concerned with the accountability issue presented by privatization. Under the tenets of this theory, the relationship between the government as contractor and the private enterprise as contractee can best be described as a principal/agent relationship, and the contract that governs the relationship is the unit of analysis. The theory itself is used to examine different contract approaches and vehicles to determine which is most efficient, and assumes that people are self-interested and risk-averse, and have bounded rationality; that there is goal conflict among members of individual organizations and among the principal and the agent; and that information is a commodity that can be purchased (VanSlyke and Connelly, 1997).

Eisenhardt cites two problems that principal/agency theory is concerned with: the desires and goals of the principal and agent often conflict and can impact the way the contract is

performed, efficiency, cost, etc.; and it is difficult or expensive for the principal to provide the amount of oversight necessary to ensure that he always knows what the agent is doing (Eisenhardt, 1989). In a "state of the field" overview, Kettl discusses White's belief that organizations work through a network of contracts which create principal/agent relationships. Since agents are self-interested and often do not share the same goals as the principals, numerous organizational pathologies develop such as information asymmetry, adverse selection and moral hazard and define information as a large organizational problem (Kettl, 2000). The solutions usually offered in the literature to solve these organizational problems are the development of incentives and sanctions that the principal can use to try and control the agent's behavior, and identifying a specific output as a deliverable for the contract.

There have been extensive studies and applications of agency theory to examine diverse aspects of privatization, a list too comprehensive to discuss here. One analysis of agency theory provides a good summary. VanSlyke and Connelly believe that although agency theory provides an excellent tool for understanding certain aspects of performance, contract mechanisms and goal alignment, it does not support an understanding of worker and organizational behavior – the theory has not consistently proven that incentives and other contract mechanisms actually produce predictable or desired behavior (Van Slyke and Connelly, 1997).

Wamsley describes a different kind of agency where the administrator is seen as the rightful agent of the citizenry and acts for, or in place of, the citizen based on authority provided by the citizenry (Wamsley, 1990). Applied to privatization, this type of agency would proscribe that the authority given to the administrator (the agent) from the citizens (principals) to act on their behalf is delegated down through the contract vehicle from the administrator (now, the principal once removed) to the contractor (the agent). Since public sector principals and private

sector agents do not often have the same goals, values or agendas, as discussed above and elsewhere (Moe, 1994; Kettl, 1998; Rainey, 1997), the contract must provide a mechanism that makes the agent assume more risk by accepting some responsibility/accountability for meeting the goals, and honoring the values and agendas of the principal. The mechanism can provide an incentive like salary compensation or a disincentive like the threat of economic or criminal penalties for failure to meet statutory or legislative intent.

3.1.3 Public Choice Theory

Another branch of economic theory, Public Choice Theory, provides a different perspective with which to examine the workings of competition within the Department of Defense. Public Choice Theory focuses on economic rationality, individual choice, efficiency, and the negative side effects of collective action as the impetus for government decision-making (Ott, 1991). A basic concept in Public Choice Theory is the rational ignorance of voters (Downs, 1957). Since there is almost no possibility of an individual voter casting the deciding vote in any election, there is little incentive for any voter to put time and effort into researching the issues in order to cast a well-informed vote. Additionally, there is little incentive for citizens to remain aware of what their elected representatives are doing on the job as there is no possibility of doing anything about it at the individual level. Since there is little incentive for individual voters, remaining ignorant of issues is in the voters' own self-interest and is rational.

Public choice theorists hold that public employees and elected officials act in their own self-interest like everyone else does, including the voters described above. Since public employees are self-interested, they do not always behave in the public interest and political or governmental failures occur as a result, just as market failures such as monopoly do (Buchanan,

1983; Tullock and Buchanan, 1965; Niskanen, 1971, 1996). Buchanan uses the concept of utility-maximization to explain the behavior of people who make decisions in public settings. His school of Public Choice – the Virginia School -- focuses more on problems that are inherent in public sector institutions such as political pressures for government programs (Buchanan, 1983). Vincent and Elinor Ostrom, representing the Indiana School of Public Choice, focus on different institutional arrangements as alternatives to the bureaucratic paradigm (Ostrom, V., 1989; Ostom,E. 1990). Privatization can be considered an alternative to the government bureaucracy's provision of goods and services – it is another institutional arrangement. Because officials and employees who work within the government are self-interested, numerous governmental or political failures are created when the government tries to provide goods and services. Both the Virginia and Indiana Schools advocate institutions that reflect individual choices that are translated into collective choice, and the use of competition among fragmented, self-governing service providers to promote efficiency.

Public Choice Theory describes numerous government failures, including free riding, logrolling, rent seeking, and capture. Logrolling involves a scenario where a politician votes for a program or legislation in order to secure another politician's vote on his program or legislation – trading votes, in effect. Often these programs or legislation become joined together under a single spending bill that is diverse and inefficient. While individual citizens may perceive that their politician succeeded in getting something for them, they do not generally understand the high cost and/or inefficiency resulting from the way it was obtained. Rent seeking occurs when the government provides special treatment to a group or organization at the expense of the citizenry (Tullock and Buchanan, 1965). An example of rent seeking might be a subsidy for farmers or a tax break for corporations. In such an example, the farmers and corporations might

form special interest groups to lobby Congress, and state and local officials to provide the subsidy or tax break. Gunning describes two types of rent seeking – market privilege rent seeking, where market privileges are given to some and taken away from others, and redistribution rent seeking where wealth is redistributed (Gunning, 1963). Market privilege rent seeking might result in a monopoly or restricted competition that occurs when an agency takes action in favor of a specific special interest group or organization. Wealth is redistributed when companies go out of business when a monopoly is created, or when prices rise due to limited competition. Mancur Olson describes another market failure that occurs when individuals act in their own self-interest by free riding when they receive a benefit from the efforts of others without providing any support to those efforts. Olson describes the difficulties that special interest groups have in maintaining support if citizens perceive that they will benefit from the groups' activities without investing any time, effort or money (Olson, 1965). Another type of government failure is regulatory capture, which occurs when bureaucrats and politicians sympathize with, or otherwise favor a group or organization and provide preferential treatment in the form of policy or legislation (Stigler, 1971). Stigler contends that special interest groups and other organizations invest significant resources to capture bureaucrats and politicians and that it is inevitable behavior.

Public choice theorists offer competition and the market as the way to remedy the government failures described above. Markets are created by separating policy making from service provision. In turn, this separation creates the market in the form of buyers and sellers of the goods and services that the government needs (Schwartz, 1994). Along with the creation of the competitive marketplace come the benefits associated with it, although Public Choice Theory never explicitly states that costs are lower or explains the mechanism that lowers cost and creates

more efficiency. There is no consensus in the broad academic literature on the topic that efficiencies and lower costs are consistently realized for contracted goods and services (Moe, 1987, 1996; Chi, 1998; Wallin, 1997; Kettl, 1993; Rainey, 1997; Siegel, 1999; Chi, 1998; Wallin, 1997; Hodge, 1996). Although Public Choice Theory has provided an important springboard for much of the intellectual thought surrounding privatization, it has come under increasing attack on numerous fronts as many of the tenets of the theory remain unproven.

Many concepts which are central in Public Choice Theory are useful to explain the level of competition that occurs across the ten defense industries. The Public Choice tenet that competition promotes efficiency and therefore most government purchases should be competed may be challenged if there is evidence of low rates of competition within some industries. In the industry descriptions above, there were numerous examples of Congressional legislation or other activity which may lend credence to Buchanan's argument if low competition rates within certain industries point to political pressure for government programs, or contracts in this case. The data may provide evidence to support or negate the Public Choice belief that bureaucrats act in their own self-interest. Among industries with different levels of competition, some government contracting officers might have more opportunity to make choices about the marketplace based on their own self-interest, as claimed by public choice theorists. As discussed earlier, customers often advocate limiting competition in an attempt to get the contractor of their choice. Logrolling may be suspected if competition is low in small industries with very few competitors and significant Congressional interest, such as the ship industry. Rent seeking might be explanatory in industries with high usage of socio-economic programs. The 8(a) Program, which allows contracting personnel to limit contract awards to companies owned by socially and economically disadvantaged groups and is examined in this study within the statutory

exemptions variable, is a good example of market privilege rent seeking. Wealth redistribution rent seeking could occur when industries consolidate as a result of changing spending patterns by government. Finally, many would argue that small business legislation provides an example of regulatory capture, and some industries may show evidence of this government failure. As a positive rather than normative theory, public choice appears to be a good perspective to use to examine some contracting implementation issues.

3.1.4 Other Economic Literature

Reiterating many Public Choice concepts, Savas argues that government monopolies are inherently inefficient, ineffective and non-responsive (Savas, 2000, 2001, 2005). In order to counteract the structural problem, competition must be fostered to create alternatives and options that lead to more cost-effective performance, based on efficiencies garnered from the workings of the marketplace. Such alternatives include intergovernmental agreements, public-private partnerships, and privatization. Savas' 2000 book examines the privatization of solid waste management and street sweeping in numerous venues and claims that his analysis proves that privatization will work in any environment if competition is present. He leaves a critical question unanswered – what happens when competition is not present, or is limited? In his writings Savas also discusses the need for government managers to change how they manage in light of the vast amount of goods and services being provided to citizens through privatization. He echoes many other scholars by calling for government managers to be taught how to execute the make or buy decision; craft a cost-effective contract; monitor the business arrangement; and increase knowledge of private sector practices. Additionally, public servants need to manage relationships that arise out of privatization including public-private partnerships, networks,

strategic alliances, etc. While much of what Savas says makes a good deal of common sense, this study could provide some illumination on the critical question – what happens when competition is not present or is limited? If the data support the possibility of government failure as the Public Choice theorists claim, how does the government generate more competition among all of the industries as Savas advocates?

Sclar does not share Savas' enthusiastic endorsement of privatization. He believes that it is difficult to sustain a competitive environment and that competition in and of itself does not ensure the success or failure of a privatization initiative. Sclar believes that characteristics of the long-term relationship between the government and the service provider, the quality of that relationship, and technological constraints of the type of work the service-provider performs are more important to the success of a project than competition. Additionally, the product or service to be provided needs to be carefully examined in order to facilitate the government's ability to adequately define the specifications and cost basis of the requirement (Sclar, 2000). Sclar identifies the need for good contract management to succeed at privatization, echoing many other authors (Kettl, 1993; Rainey, 1997; Siegel, 1999; Chi, 1998; Wallin, 1997; Hodge, 1996; Savas, 2005). Sclar bases many of his beliefs on examples of efficient public sector service delivery in Albany, Massachusetts and Indianapolis (Sclar, 1997). He also examines mandatory urban mass transit to show that public service delivery often does not deliver savings and efficiencies as advertised (Sclar and Brandwein, 1989).

Another market concept in the privatization literature deals with quasi-markets. Lowery describes markets that provide public goods and services as "quasi-markets," and believes that although these markets may be more efficient and responsive to the collective needs of the citizenry than other monopolistic, traditional service delivery methods, quasi-market failures do

occur. He catalogs three types of market failure – failure in market formation, failure by preference error, and failure by preference substitution (Lowery, 1998). Preference error occurs when citizens don't have enough information to make discerning choices that provide them with goods and services that they really want; have insufficient information to make reasonable selections from a wide array of choices; are manipulated by advertising or political infighting; are impacted by externalities. Preference substitution occurs when the two parties to the production process (those who make the decision to provide the goods and services, and those who consume the goods and services) do not agree on what they want or need, and one of the parties substitutes their preference for the other party's.

Some of the industries in the study might represent the failure in market formation that Lowery discusses, and the concept also has something to offer within the adequacy of competition discourse. The descriptions of preference error and preference substitution above suggest the concepts will be valuable in the discussion of information asymmetry. Political infighting and manipulation are concepts that are compatible with the log rolling and rent seeking discussion. Preference substitution could overlap with the concept that bureaucrats behave in their own self-interest.

Despite much impassioned writing in the literature, the case for privatization is inconclusive and needs further study as data on the whole spectrum of privatized projects are not available and many programs are not thoroughly evaluated during and after performance (Miranda and Andersen, 1994; Prager, 1994; Kettl, 1993; Rehfuss, 1990). In addition, agencies often don't really know what their costs are for administration or monitoring (Rehfuss, 1989) and don't consider transaction or opportunity costs. Savings are not always materializing as anticipated (Starr, 1987; Kettl, 1993; Rainey, 1997; Siegel, 1999; Chi, 1998; Wallin, 1997;

Hodge, 1996, Sclar, 2001, 2005). Some studies have shown that when savings do occur they are generally found in areas with specific characteristics such as adequate competition, readily definable requirements, etc. (Hodge, 1996; Savas, 2000; Brown and Potoski, 2003, 2005), but the effectiveness of privatization when these conditions are not met remains to be seen.

The literature referenced in this study will likely provide feasible explanations for what really happens in the world of Department of Defense contracting in the data analysis. The research questions that the study seeks to answer are, "Why is the level of competition important to the economic argument?" and "Why is it important to know whether or not competition varies across industry?" and "Why is it important to know that specific variables such as contract type, contract size, and statutory exemption are related to competition?"

First, competition is an integral part of economic arguments for privatization which argue that it promotes good outcomes for the provision of public goods and services. Microeconomic theory predicts that competition will cut costs, increase efficiency, and provide the most effective allocation of resources. Public Choice Theory adds that using competition among fragmented, self-governing service providers aggregates individual choice into collective choice and remedies government failures such as monopolies. Savas continues that government monopolies are inefficient, ineffective and non-responsive. In his view, competition fosters alternatives and options that lead to most cost-effective performance based on efficiencies created by the marketplace. Quasi-market theory explores the failures that occur when competition is not present and markets fail to form. An understanding of the context of competition in a huge buying activity such as the Department of Defense provides valuable insight into the accuracy and applicability of these concepts to privatization.

Second, there is much discussion in the economic literature about contingencies that can increase or decrease competition. Transaction Cost Theory predicts that higher transaction costs will lower competition, and maybe even negate the benefit of using a contract vehicle. It is beneficial to examine the competitive environment by industry to see if industries with lower rates of competition can reasonably be expected to have high transaction costs. One tenet of agency theory is that the contract provides a mechanism that makes the agent responsible and accountable for meeting goals and outcomes. Adequate competition increases the likelihood that the government will find a high quality agent capable of producing quality results.

Third, an examination of the data resulting from this study may provide information about competition that can refute or support economic arguments about privatization. For example, if the study finds that competition varies by industry, that result will cast considerable doubt on the microeconomic assumption of pure competition in the marketplace.

3.2 Management Literature

There are two main arguments advanced on the management of privatization – the generic argument that states that privatization holds no special requirements for management, and the Public Management argument that contends that privatization offers many management challenges, an argument that is enjoined by many traditional Public Administration scholars. Privatization has had a tremendous impact on intellectualizing within the frameworks under analysis and offers almost unlimited opportunity for research that will bolster or undermine the arguments.

The New Public Management and reinvention frameworks offer a generic, practitioner-oriented perspective, building on the work of public choice, principal/agent and transaction cost

theorists and expounding that government organizations should focus on "letting managers manage"; measuring outputs and performance; devolving authority and empowering employees; maximizing the use of private ownership, contracting out and competing the provision of public goods and services; imitating private sector practices; and stressing cost-cutting, efficiency and cutback management (Kamensky, 1996; Williams, 2000; Gore, 1993). This paradigm holds that any distinction between public and private organizations is artificial and that the common dimensions among all organizations should provide the basis for theory and the prescription for managerial action. In this view, privatization implies little managerial impact for public administrators.

There is some support in the literature for the generic perspective. There is an on-going discussion of the problem of "sector blurring," a commonly recognized condition that highlights the fluid and changeable nature of the line drawn between public and private organizations (Daft, 1995; Rainey, 1997; Kettl, 1994), and the difficulty of defining what constitutes a "public" versus a "private" organization and identifying their characteristics (Rainey, Backoff and Levine, 1976; Rainey and Bozeman, 2000). Herbert Simon's search for the "one best way" to manage both public and private organizations evolved to Thompson's contingency theory approach to management that used goal consensus and technical knowledge among managers as the explanation for all organizational behavior rather than the public/private distinction, although such a distinction can be accommodated under this view (Rainey, 1997). Additionally, complex networks and conglomerates of public and private organizations, both profit and not for profit, are increasingly used to provide public goods and services (O'Toole, 1996; Milward, 1996) and in relation to these structural arrangements it is hard to tell where the private organizations end and public organizations begin or vice versa.

While there are many valid points made by generic theorists, the theory is fairly simplistic to explain the many distinctions between public and private organizations and the impact that privatization management has on administration. In contrast to the generic management argument, many scholars believe that privatization changes the nature of government management itself (Chi, 1993; Rainey, 1997; Moe, 1996 and1997; NAPA, 1989; Salamon, 1981; Mosher, 1980). In particular, Gill and Rainey argue that the Public Management School incorporates an implicit privatization theory, contending that not only does privatization change the nature of public management, it requires effective public management, many contingencies and a well-developed strategy to be successful (Gill and Rainey, 1997; Rainey 1997).

While much of the literature focuses on the management decision of whether or not to privatize, and this decision is often made on the basis of assumptions about private sector efficiency and cost savings, the decision is far more complex and has tremendous management implications. As Rainey explicitly states, paradoxically, privatization requires excellent government management (Rainey, 1997). Many scholars offer contingencies for successful implementation of a contract arrangement: if it can reduce cost (Rehfuss, 1989); if competition is available (Donahue, 1989; Bendick, 1990; Georgia Governor's Commission, 1992; Smith and Smyth, 1996; Savas, 1982; Osborne and Gaebler, 1992; Wallin, 1997); if it can be monitored and evaluated (Rehfuss, 1989; Donahue, 1989; Bendick, 1990; Georgia Governor's Commission, 1992; Chi, 1998; Wallin, 1997); and if tasks can be clearly defined (Siegel, 1999; Donahue, 1989; Bendick; 1990; Wallin, 1997). Finally, Rainey offers a well-defined approach to the privatization decision and recommends that managers consider the competitive, legal and political environment; goals and values; leadership, strategy and culture; structure; process; and

ability to measure, monitor and evaluate performance before making the privatization decision (Rainey, 1997). As outlined here, the Public Management School, while certainly not anti-privatization, recognizes that privatization is a viable option only when conditions for its adoption are favorable.

The contingencies discussed above have many implications for government managers and raise many questions. First, government administrators need to have specific skills to manage privatization, a concern that has been identified by many scholars (Eggers, Kettl and Diulio, 1995; Kettl, 1993; Rehfuss, 1990; NAPA, 1989). Managers need knowledge and specialized skills in contracting, finance, communication, personnel, business, teaming/partnering, negotiation, quality assurance, market analysis and risk management to manage privatization.

Second, resources must be available to support privatization and it is the government manager's job to both find and manage those resources. In the atmosphere of cutback management espoused by the NPR and reinvention movement, government managers' ability to procure additional human resources to manage privatization is severely constrained (Kettl, 1994; Rainey, 1997). Additionally, dollars for training appear to be in short supply in a time of increased fiscal pressure on all levels of government (Kettl, 1994; Kodrzycki, 1998; Siegel, 1999). For example, while the Department of Defense has poured substantial resources into training and professionalizing its contracting workforce at Congressional insistence (Defense Acquisition and Workforce Improvement Act, 1996) this training has not always extended to the functional managers who are actually responsible for managing the day-to-day contracted, functional operations and interaction with the contractor. Another resource, time, appears equally hard to come by. In an atmosphere of "doing more with less," and in light of substantial

downsizing in government at all levels, managers are hard-pressed to divert employees from mission requirements to training.

Third, privatization requires an appropriate organizational structure for support and implementation. At issue is the compatibility of the traditional hierarchical /bureaucratic structure with the privatization approach. Some scholars identify a requirement for both an organizational and analytical structure that includes commissions and staff offices sufficient to support the decision process described above (Chi, 1998; Wallin, 1997). Guislain states that the government must organize itself in such a way that it is flexible and responsive to its external environment so that it can most efficiently and effectively utilize external resources for the production of its goods and services (Guislain, 1997). In an empirical study of networks of community mental health organizations, Provan and Milward found that centralized integration with proper incentive structures, monitoring systems, and a core agency with sufficient resources and strong external control are prerequisites for networks to function effectively (Provan and Milward, 1995).

The issue of networks is particularly fascinating in relation to the management implications of privatization. The increasingly complex service production/privatization structures require increasingly complex contract vehicles, which require increasingly sophisticated management responses, which require more highly trained managers – all of which increase transaction cost and raise accountability issues. As the inter-relationships among service providers become more complex and convoluted, requirements are harder to document and become more vague and complex, which often results in a negotiated contract process rather than a simpler, low-bid process. The scale and scope of privatization efforts involving networks often result in more complex contract types that are more difficult to administer and shift a

higher percentage of risk from the contractor to the government. Coupled with the lack of resources and the questionable institutional support structure for privatization discussed earlier, the scope of the challenge to public managers from privatization becomes clear. Milward and Provan provide a sobering concept for further consideration – although there has been a worldwide movement towards government procurement of services, there is little evidence that governments or academics know much about managing networks (Milward and Provan, 2000). This reality provides a large challenge to Public Administration in general and the management of privatization in particular, and should provide a focus for needed research in the privatization management arena.

It is difficult to summarize what the Public Management literature really says about the management of privatization as it is so diverse and not always conclusive, except for the complete agreement that management is a key element of a successful privatization effort. Rainey complains that too many questions are asked and not enough answered and urges scholars to begin trying to answer their own questions and move to a theory-building mode (Rainey, 1993). Articles are appearing about the failings of NPR and reinvention, and the shortcomings of privatization (Kettl, 1994; Wallin, 1994; Prager, 1996; Siegel, 1999; Thompson and Ingraham, 1996). These articles support the Public Management view that privatization should not be used as a universal approach, but as a contingency approach.

3.3 Legitimacy Literature

Legitimacy arguments have been consistently raised since the appearance of the bureaucratic institutional structure during the Progressive era, and have increased in intensity since the demise of the politics/administration dichotomy in the 1940s. Privatization compounds

the legitimacy issue by pushing down the service production function, and sometimes even part of the provision function with its attendant accountability and responsibility -- key issues surrounding privatization in relation to the field of Public Administration -- down one layer from the bureaucracy.

O'Connell believes there is little understanding of the roles and responsibilities of the private sector and government, and that this lack of understanding will lead to a dismantling of a structure of responsibility and accountability, not the building of one. He recommends an examination of size and financial capability of prospective service providers and a reasonable assessment of what each provider can achieve. He warns that service delivery remains a government responsibility no matter what vehicle is used for service provision (O'Connell, 1996).

Moe adds the concept of the sovereign to the legitimacy discussion and states that a sovereign cannot remain sovereign if it assigns some of its attributes to a private party, as the government does when it gives the provision of products and services to the citizenry to a contractor, or agent. He questions whether the actions of a private party are backed by the "full faith and credit of the Treasury" as the sovereign's are, and wonders how the powers of the sovereign are wielded or not wielded by a third party. Finally, he discusses the concept of accountability and states that the lines of accountability are weakened when the government contracts with a private party to provide products and services to the citizens (Moe, 1987). Gilmour and Jensen take the argument a step further. They claim that contracting the service provision function to the private sector may allow the government to escape responsibility for actions that a private party takes, and which are endorsed by the government. Additionally, they

state that citizens may lose some of their rights under the Constitution when they are dealing with a commercial, private entity rather than the government (Gilmour and Jensen, 1998).

Kettl points out that public and private organizations have very different values that support very different cultures. In the private sector the emphasis is on profit and control while in the public sector the emphasis is on consensus, compromise and values such as equity. Since privatized programs are still public programs, the government's goals must remain primary (Kettl, 1988). O'Connell describes the conflicts between governmental and non-profit sector goals and charges the reinventing government movement with confusing our concept of who will be responsible for better services, and for the coordination and accountability of increasingly dispersed systems (O'Connell, 1996). Further, he appears to call for a clarification of the roles of the participants in the privatization process and is joined in this call by Moe, who wants to see an assignment of functions to private and public sectors (Moe, 1994). Responsibility and accountability need to be allocated to the participants in a way that protects the rights of the citizenry and the public interest. While the words come easily, the task of accomplishing such a synthesis appears light years away based on the state of current research and theory in this area. Although the concepts of accountability and responsibility have been clearly debated in the literature, and there appears fair agreement among Public Management and traditional Public Administration scholars about the issues, the inability of the field as a whole to integrate accountability and responsibility into evolving concepts related to structure and management preclude meaningful resolution.

In another very traditional argument, some scholars contend that a legally based public administration is premised on public law concepts like sovereignty and democratic accountability, rather than pragmatic concepts like performance, as others have suggested (Moe,

1988; Gilmour and Jensen, 1998). Gilmour and Jensen develop their concept of democratic accountability for public servants by examining a network of constitutional, statutory and other legal limits that act to constrain bureaucrats' behavior. Privatization becomes problematic when the same statutory and legal limits do not apply to private actors, even though public functions are delegated to them with attendant discretion, and the chain of accountability that exists in the traditional administrative bureaucracy is broken (Gilmour and Jensen, 1998).

Moe contends that many of the reinventing government reforms and the Gore initiative in particular, are based in a profound misunderstanding of the rule of law that supports the administrative management concept in traditional Public Administration. While the traditional Public Administration paradigm holds that the presidency is central to the management of the executive branch and accountability of the hierarchy travels through departments, through agencies and ultimately to the president, the entrepreneurial paradigm devolves management responsibility to the lowest possible level and assigns managerial accountability to the citizen/customer based on performance results – a position that Moe rejected six years earlier in his 1988 exchange with Bozeman (Moe, 1994).

Finally, cutback management beliefs have generated concern among many traditional Public Administration scholars about the "hollow state" (Milward), "government by proxy" (Kettl), or "third party government" (Salamon) and any serious examination of the issue must contend with the impact of increased privatization on the nature of government itself, including a drain on government expertise, loss of the government's ability to provide adequate oversight to the vast network of contracts that are in place, and the total underestimation of the true costs of this contracting network, including the transaction costs of contract administration and quality monitoring and the opportunity costs of unexamined options. Congress has recently shown signs

of an increasing concern with the size of the contracted/privatized workforce, a shadow workforce that Paul Light has estimated as nine times the size of the federal workforce. In March of 2000, Congress implemented Section 343 of PL 106-65 that requires government contractors to report to a centralized location the number of employees working on each federal contract. Congressional concern often translates into legislation, a topic which will be examined next in the political framework.

3.4 Political Literature

Trends in Public Administration that led up to the Reinventing Government movement and the recommendation by the NPR to adopt the entrepreneurial paradigm were discussed earlier. During that timeframe some political events occurred that have also had an important impact on the use of privatization. Kettl examines the development of the contracting out trend for the last 40 years, noting that as early as the 50s, local and state level contracting out increased as a response to federal projects like the construction of the interstate highway system and urban renewal, and again in the 60s and 70s in response to social programs, especially at the local level. The tax revolts of the 70s, such as Proposition-13 in California, also increased the use of privatization as states and local governments looked for ways to control cost while maintaining or increasing levels of service (Kettl, 1993; Gill and Rainey, 1997). The Reagan administration ushered in the devolution concept and "new Federalism" that decreased federal funds for sub-governments. Recession, an increase in demand for government services, new spending requirements, population growth in the urban centers, and dysfunctional tax systems were among the many reasons that state and local governments felt extreme fiscal pressures in the 80s and into the early 90s (Kodrzycki, 1998; Gill and Rainey, 1997).

Kodrzycki examines the privatization movement between 1987 and 1992 with interesting results for the political framework. She determines that the privatization movement actually slowed slightly during this timeframe, based on some political realities like an increased awareness of some of the shortcomings of privatization, the improving fiscal condition of some local governments, and local decisions to discontinue services. Her work also provides some interesting insights into the interaction of the privatization decision and politics. Kodrzycki looks at a number of studies that examine how non-economic factors impact the privatization decision and argues that politicians actually make privatization decisions by balancing political costs and benefits. While politicians accrue the benefits of political patronage and labor union support when services are provided in-house, they also pay a political price if the costs of in-house provision are high and the service is inefficient. She also contends that because privatization is politically based and politics are different from place to place, the experiences of specific jurisdictions will be different, and she identifies a political contingency that recommends the use of privatization when top politicos want to use it based on an ideological belief that a function belongs in the private sector, or because the government can not meet demand for a required good or service (Kodrzycki, 1998). Her argument provides a challenge to those who believe that the economic explanation for privatization is sufficient as the economic argument does not account for political implications and the political impetus to act.

Numerous other authors cite the importance of political considerations to the privatization decision throughout the privatization literature. Kettl describes privatization and the reinvention movement in terms of a reelection strategy for the Clinton administration and the political capital gained from citizen perceptions of a less costly, more efficient government operating with fewer federal employees, even though the concepts of “doing more with less” are

badly conflicting. He also raises a critical political issue that often goes unnoticed but that has tremendous ability to impact not only the specific implementation of privatization initiatives, but the reinvention movement as a whole, by identifying one of the failings of NPR as a lack of explicit strategy for dealing with Congress. While Congress publicly embraces the reinvention movement and privatization efforts, they jealously protect their constituents and favored programs in committee and in unobserved riders to complex bills (Kettl, 2000).

Wallin argues that contracting out fits the bill politically and supports the anti-big-government, anti-public-employee and anti-public-employee-union themes espoused by both the Republican leadership and the citizens at large. He draws the conclusions that proponents of privatization have to promote their agenda to overcome bureaucratic intransigence, union opposition, and partisan politics; and legislative involvement may provide an important check and balance on overzealous privatization, by studying the Massachusetts privatization experience and the political interaction of a Republican governor eager to privatize and a Democratic legislature responsive to the wishes of state employees (Wallin, 1997).

An examination of the literature surrounding the political dimension of privatization underscores the complexity of the issues surrounding the movement, especially when considered in conjunction with the other frameworks. The frameworks have provided a diverse context to examine contacting. While many trains of thought have been discussed, one thread remains nearly constant throughout the dialogue – the importance of competition. We turn now to the methodology used to examine competition and answer the questions raised in the study.

CHAPTER 4

METHODOLOGY

4.1. Data

The Department of Defense Form 350 (DD 350), "Individual Contracting Action Report," (Oct 2003) database is the primary source of data for this study. The DD 350 database collects data on all contract actions for all contracting organizations within the department structure, including the Army, Air Force, Navy, Marines and all defense agencies. The population of contract actions for this study is very large and includes approximately 437,000 contract actions in fiscal year 2002, 545,000 actions in fiscal year 2003, and 634,000 contract actions in fiscal year 2004; each contract action entry line includes 92 fields, such as type of action, extent of competition, socio-economic programs, dollar amount of the award, etc. The database is compiled by fiscal year and this study examines Fiscal Year (FY) 02 – 04 data. This time span was selected for a number of reasons. First, the political leadership remained stable over the selected three year period. Second, although the Department of Defense has traditionally changed the format of the DD350 database slightly from year to year, often adding or deleting a category or two, in 2005 the department began transitioning to another database to capture contracting information – Federal Procurement Data System – New Generation (FPDS-NG). The change is material enough to make comparisons across the two databases very difficult.

4.2 Hypotheses

It is difficult to develop hypotheses relating to the theories under examination in this study, many of which are untested and unproven. The impact that the industry characteristics have upon competition is also unknown. This study is an exploratory exercise meant to identify promising areas for further study, rather than answer the myriad questions raised by the examination itself.

H1: The variation in the level of competition for government contracts is related to industry, contract size, contract type, and statutory exemptions.

H2: The level of competition, measured by number of offers, varies by industry.

4.3 Variables

The dependent variable that is examined in this study is competition, measured by the number of offers received. There are four independent variables: industry; contract type; statutory exemptions, operationalized as the statutory exemptions to the Competition in Contracting Act; and size of contract, measured by dollars obligated. All variables are categorical, which means that the variable consists of at least two categories[1]; O'Sullivan and Rassel define categorical variables as nominal and ordinal variables (Sullivan and Rassel, 1995). A nominal variable is an unordered variable, while an ordinal variable has an intrinsic value that allows it to be ordered.[2]

[1] The dependent variable in this study is number of offers received, which consists of four categories: 0-1 offers; 2-5 offers; 6-20 offers; and 21-999+. The independent variable, contract type, consists of five categories: General Services Administration contracts; fixed price contracts; cost contracts; time and materials contracts; and labor contracts. The statutory exemptions independent variable consists of six categories: full and open competition; one source; urgency; particular sources; authorized by statute; and other. The contract size independent variable consists of three categories: $0-100K; $100-500K; and Over $500K. The independent variable, industry, consists of ten categories, each of which represent an industry within the DoD marketplace.

[2] In this study the dependent variable, number of offers, and independent variable, contract size, are ordered categorical variables as it is possible to distinguish that 0-1offers is less than 2-5 offers, which is less than 6-20

Because there is no existing model to recommend variables or to study competition within the military context of the defense industries, there is not a strong theoretical basis to select the variables for this study. There are many data fields associated with the DD350 database used in this study that are reasonable candidates to become variables and that exacerbates the problem of variable selection. In an informal survey of Department of Defense contracting personnel, practitioners identified contract type, statutory exemptions to the Competition in Contracting Act, and contract size as the variables they believe impacted the level of competition the most. Bivariate analysis (crosstabs) is used to analyze the relationship between each of the independent variables and the dependent variable to establish whether or not a relationship exists between the two variables.

The DD350 database displays the number of offers from 0 to 999+[3]. Because of the very large sample size (approximately 93,000 contract actions), there is a large population of possible continuous responses when performing an analysis, or responses that increase in small, predictable increments such as numbers. Because it is predictable that there would be a very high range among the responses in such a population, it is predictable that the results of analysis might not be meaningful. For this reason, the variables are created as categorical dependent and independent variables, rather than continuous variables. Numerous categories are examined and tested and it is determined that four categories are appropriate. The 0-1 offers category distinguishes between no competition at all and one sole offer. The 2-5 and 6-20 categories

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offers and so on. Looking at the contract size variable, clearly $0 – 100K is less than $100K - $500K, which is less than Over $500K. The independent variables contract type and statutory exemptions are unordered categorical variables as there is no obvious way to determine the appropriate order of fixed price contracts in relation to cost contacts, or the one source exemption in relation to the urgency exemption.

[3] Clearly, no contracts can result from 0 offers. The DD 350 database reports orders against GSA contracts as having 0 offers even though they were awarded competitively and can have a number of offers. The ten defense industries have the following number of 0 offers: Aircraft, 119; Construction, 203; Electronics, 3,217; Health, 681; Space, 51; Food, 8; Services, 4,112; Ships, 963; Vehicles, 89; and Weapons, 26. These numbers correspond to the percentages of GSA orders by industry found in Table 5.14 on page 118.

further distinguish the amount of competition. The 21-999+ category identifies those contract actions that are highly competitive. There is a trade off associated with the use of categorical data for the dependent variable – there is a big difference between knowing the exact number of offers versus knowing that the number of offers falls into the 2-5 or 6-20 category. However, the use of categorical variables facilitates the ability to structure the analysis in such as way as to provide meaningful results.

The DD350 database includes 12 contract types: fixed price redetermination; firm-fixed price; fixed price, economic price adjustment; fixed price incentive; fixed price award fee; cost plus award fee; cost; cost-sharing; cost plus fixed fee; cost plus incentive fee; time and materials; and labor hour. It is predictable that some of the contract types will be used very rarely and in very specific circumstances. All of the cost contract types have the same underlying characteristics as do the fixed type contracts. The decision to collapse all cost contract types into one cost contract category and all fixed price contract types into a fixed price category simplified the analysis without sacrificing the integrity of the data. Four of the five contract types within the contract type category are cost, fixed price, time and material, and labor hour. A description of contract types can be found in Chapter 5 beginning on page 115.

The General Services Administration awards many long-term, multiple-award contracts, or “schedules,” for literally millions of commercial items and services. The schedules aim to get the best price available for the government based on high-volume buying. All government agencies, and sometimes their contractors, can use the schedules, and the Department of Defense is a prolific user. Although the schedules are associated with the same four types of contracts listed here in the contract type category (fixed price, cost, time and material, and labor hour) the DD 350 database cannot determine which of the four contract types are associated with

individual buys off of the GSA schedules. Since purchases off of the GSA schedules represent roughly 10 percent of all purchases across all industries and are such a significant piece of the Department of Defense business, GSA contracts were added as the fifth contract type category.

The DD350 database includes 13 authorities to exempt contract actions from the Competition in Contracting Act: unique source; follow-on contract; unsolicited research proposal; patent or data rights; utilities; standardization; only one source – other; urgency; particular sources; international agreement; authorized by statute; authorized resale; national security; or public interest. The first six (unique source; follow-on contract; unsolicited research proposal; patent or data rights; utilities; standardization; only one source – other) are authorized under one exemption in the Federal Acquisition Regulation (FAR) and are collapsed into one category, called one source, for that reason. Authorized by statute and authorized resale are also authorized under one exemption in the FAR and are collapsed into the authorized by statute category. The thirteen authorities in the database are collapsed into seven categories which are distinguished from another category, full and open competition. The full and open competition category identifies contract actions that do not limit competition in any way. Descriptions of all seven categories of statutory exemptions are provided in Chapter 5 on pages 113-114.

The contract size variable is measured by dollar amount and the DD350 database reports an exact dollar amount. While it is possible to use a continuous variable based on the exact amount of the contract reported in the database, similar to the case of the number of offers variable discussed above, the range of continuous responses would be very large and it is predicted that the results of the analysis might not be meaningful. For this reason, three dollar categories are created: $0-100K, representing fairly non-complex purchases; $100-500K; and

over $500K, representing purchases that are made using more complex processes including negotiated procedures.

4.4 Methodology

Due to the very large population of data in the study a 10 percent random sample is used to examine the data. To perform the analysis by industry, individual contract actions within the database are divided into ten categories that represent the ten defense industries under analysis. Data from all three fiscal years are combined within the appropriate industry category. For some portions of the analysis, all random samples are combined into a pooled sample and are not divided by industry. A contingency table analysis is performed for all of the independent variables and the dependent variable, number of offers. A visual examination of crosstab results is adequate to determine if the independent variables (industry, contract type, statutory exemptions and contract size) are related to the dependent variable (competition) and independently impact the number of offers. Contingency table analysis is sufficient to provide a conclusion whether or not to reject the null hypothesis for Hypotheses 1 and 2.

When using cross-tabulation, Meier and Brudney recommend calculation of a percentage difference between the high and low percentage points within each category of the dependent variable; the percentage difference is an indication of strength of relationship between the independent and dependent variables (Meier and Brudney, 1997). A higher percentage difference represents greater strength of relationship. This study reports the difference between the high and low percentage points of 0-1 offers, 2-5 offers, 6-20 offers, and 21-999+ offers in relation to industry, contract type, statutory exemptions, and contract size. The analysis also discusses the range in percentage points within each category of the dependent variable other

than the high and low endpoints to show the extent to which the impact on the dependent variable fluctuates.

The research for this study produced a large amount of descriptive data, which provide a great deal of information about what really happens in the Department of Defense procurement arena. The analysis begins with an examination of descriptive data by variable and by industry to see if trends or patterns are discernable in the data, or if there is evidence to support conclusions drawn about the relationship between variables established by the contingency table analysis.

CHAPTER 5

ANALYSIS AND RESULTS

5.1 Contingency table analysis

In this chapter the results of data analysis provide the basis for discussion within the four frameworks described earlier. Contingency table analysis supports the determination to accept or reject the hypotheses developed in this study. Contingency table analysis, or cross-tabulations, is a common method used to analyze relationships between ordinal and nominal variables, such as those used in this study (Meier and Brudney, 1997). Table 5.1 shows the four categories of the number of offers variable by percentage in relation to the ten industries under examination in this study. The difference between the high and low percentage by industry within each of the four categories (0-1 offers, 2-5 offers, 6-20 offers, 21-999+ offers) is calculated and reported as the percentage difference, which identifies the strength of the relationship between two variables (Meier and Brudney, 1997). A larger percentage difference indicates a higher impact by the independent variable upon the dependent variable, number of offers.

The 0-1 offers category has a percentage difference of 41.5 percentage points among all industries. The electronics industry has the highest percentage of 0-1 offers at 56.7 percentage points and the food industry has the lowest percentage of 0-1 offers at 15.2 percentage points (56.7 percentage points - 15.2 percentage points = a percentage difference of 41.5). This result can be stated that overall, industry appears to make a difference of 41.5 percentage points in the

number of 0-1 offers. The ships, aircraft, space and weapons industries have the second to fifth highest instance of 0-1 offers, making them some of the least competitive industries in the category. Among these four industries there is a percentage difference of 6.9% among 0-1 offers

Table 5.1 Contingency Table Analysis (Number of Offers by Percentage within Industry)

Industry	Aircraft	Ships	Vehicles	Weapons	Space
Number of Offers					
0-1 Offers	54.5 %	55.7 %	33.7 %	48.8 %	51.8 %
2-5 Offers	39.1 %	37.9 %	53.7 %	39.6 %	29.6 %
6-20 Offers	6.1 %	5.6 %	11.9 %	9.6 %	8.1 %
21-999+ Offers	0.3 %	0.8 %	0.7 %	2.0 %	10.6 %
Total	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %
	(n = 9322)	(n = 5285)	(n = 2430)	(n = 982)	(n = 4708)
Mean Number of Offers	2.22	2.59	4.33	5.13	28.97
Industry	Construction	Electronics	Food	Healthcare	Services
Number of Offers					
0-1 Offers	30.3 %	56.7 %	15.2 %	19.7 %	45.5 %
2-5 Offers	43.6 %	36.1 %	69.3 %	77.2 %	40.3 %
6-20 Offers	22.5 %	6.5 %	15.6 %	2.7 %	10.9 %
21-999+ Offers	3.6 %	0.7 %	0 %	0.3 %	3.3 %
Total	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %[4]
	(n = 11646)	(n = 11380)	(n = 3700)	(n = 8053)	(n = 39339)
Mean Number of Offers	5.13	3.48	3.39	3.49	7.03

[4] Percentages shown in the total column for all tables may slightly exceed or be slightly less than 100% due to the rounding process.

[ships (55.7 percentage points); aircraft (54.5 percentage points); space (51.8 percentage points) and weapons (48.8 percentage points)]. Although the percentage difference among these four industries in 0-1 offers is not as great as the percentage difference across all industries, the results make the point that industry impacts the number of 0-1 offers to differing degrees. These four industries are high-tech, defense-related providers and the expectation would be a lower level of competition within them. Additionally, based on the size of the portion of each industry that supports the Department of Defense as well as the number of offerors within the industry as described in Chapter 2, three of the five industries (ships, aircraft, and weapons) are fairly small industries, supporting an expectation of less competition than larger industries. Size of industry is further discussed on page 84.

Electronics has the highest rate of 0-1 offers at 56.7 percentage points and services has the sixth highest rate of 0-1 offers at 45.5 percentage points, a somewhat surprising finding considering the vast size and huge number of providers within both industries, which would support an assumption of more competition. Data rights issues and the large amount of proprietary information associated with electronics may provide one explanation for the high number of 0-1 offer purchases within the industry. It is possible that service contracts are being justified for limited competition or sole source award based on a “follow-on” basis where the government justifies the lack of competition because it saves money or garners other benefits from keeping the contractor who previously performed the contract. Additionally, the General Services Administration (GSA) schedules include a large number of vendors from the services and electronics industries and are frequently used – 28.5% of all contract actions in the electronics industry are awarded on GSA contract vehicles and 10.2% of all contract actions in the services industry are awarded on GSA contract vehicles. Although GSA contract awards are

considered competitive and generally entail more than 0-1 offer, that information is not captured by the database used in this study.[5] The remaining four industries (construction, vehicles, food and healthcare) have the fewest number of 0-1 offers. These industries have a correspondingly low percentage of use of GSA contract type and are the most competitive. The construction, food and healthcare industries are vast in scope and have a large number of suppliers, which would support an expectation of more competition.

In the 2-5 offers category, the healthcare industry at 77.2 percentage points and food industry at 69.3 percentage points have the highest instance of 2-5 offers, which is the most often used category of the four. That would make healthcare and food highly competitive industries, which is a reasonable expectation based on the very large size of the industries and the commercial nature of the goods purchased. The eight remaining industries range from 29.6 to 53.7 percentage points in 2-5 offers, a difference of 24.1 percentage points; overall, the category has a percentage difference of 47.6 percentage points, the largest range in the four number of offers category, with a high of 77.2 percentage points in the electronics industry and a low of 29.6 percentage points in the space industry. This fact is significant because it shows that even the industry with the lowest percentage points within the category (29.6) gets 2-5 offers for almost a third of all actions.

The 6-20 offers category has a percentage difference of 19.8 percentage points, from a high of 22.5 percentage points in the construction industry to a low of 2.7 percentage points in the healthcare category. The literature review describes the construction industry as vast with a

[5] The DD350 database used in this study categorizes all GSA contract awards as having 0-1 offers. "GSA contract" is listed as a contract type because the DD350 database cannot distinguish actual contract types among GSA contracts although in reality GSA contracts consist of the same four contract types as those in use for the Department of Defense for this study. The percentage of use of GSA contracts across all industries is 10.1%, with a high usage of 28.5% in the electronics industry and a low usage of .2% in the food industry for a range of 28.3%. Industries with a high number of GSA actions will appear less competitive than they really are.

very large number of suppliers, many of them small companies, which is consistent with a high number of offers. Additionally, GSA schedules are not readily available for construction supplies and the industry only awards 1.7% of total actions on GSA contracts. As discussed earlier, GSA contracts are characterized as having only 0-1 offers for purposes of this study. Since the construction industry awards so few GSA contracts, there are more actions available for the other three categories of number of offers. The next four highly ranked industries in this category (food, vehicles, services, and weapons) cluster within a percentage difference of only 6 percentage points in the 6-20 offers category. Two of the industries (food and services) are very large while two (vehicles and weapons) are smaller, industrial companies. The literature review describes the industrial companies as having a robust second and third-tier structure to provide spare parts and this provides a reasonable explanation for a percentage of 6-20 offers that is equivalent to that of much larger industries.

Only the space industry has over 10% of all purchases in the 21-999+ offers category, which is surprising and hard to explain. It is paradoxical that the industry with the lowest overall rate of competition should have the largest instance of actions that are highly competitive with 21-999+ offers. This anomaly begs for further examination to provide an explanation for the results. There is a percentage difference of 10.6 percentage points within the 21-999+ category, the smallest percentage difference of the four categories.

Results of this analysis clearly show a relationship between industry and number of offers that is sufficient to reject the null hypothesis for Hypothesis 1 and Hypothesis 2. The percentage differences in all categories of the number of offers variable in relation to industry establish a statistical relationship among the independent and dependent variables. Additionally, the range

in percentage differences among industries within each category of number of offers demonstrates that the difference in competition varies by industry.

The next category, statutory exemptions, captures the usage of restricted or limited competition. Although the intent of statute and regulation is clear as to the preference for full and open competition, the mission of the Department of Defense and military operations often make it difficult to meet that intent. Table 5.2 provides the results of contingency table analysis of the relationship between the statutory exemptions variable and the dependent variable, competition, expressed as number of offers.

Table 5.2 Contingency Table Analysis (Number of Offers by Percentage within Statutory Exemptions)

Statutory Exemptions	Full & Open Competition	One Source	Urgency	Particular Source	Authorized by Statute	Other
Number of Offers						
0-1 Offers	35.4 %	79.3 %	69.9 %	20.5 %	88.1 %	83.8 %
2-5 Offers	50.3 %	19.6 %	25.9 %	20.6 %	9.9 %	14.8 %
6-20 Offers	12.3 %	1.0 %	3.1 %	11.0 %	1.8 %	1.3 %
21-999+ Offers	2.0 %	.0 %	1.2 %	48.0 %	.1 %	.0 %
Total	100.0 %	100.0%	100.0 %	100.0 %	100.0 %	100.0 %
	(n = 76912)	(n = 9189)	(n = 780)	(n = 953)	(n = 4708)	(n = 532)

With the exception of the particular source category, an examination of the table shows that the number of offers consistently decreases from category to category. It is reasonable to have a very high number of 0-1 offers as shown in Table 5.2 as the use of statutory exemptions limits or restrains competition. The authorized by statute category includes the 8(a) Program, a

Small Business Administration-sponsored program for socially and economically disadvantaged small business owners that teaches them how to compete for, win, and perform government contracts. In addition to the 8(a) Program, the authorized by statute exemption allows non-competitive contract awards to the Federal Prison Industries; non-profit agencies for the blind or severely disabled, such as the National Industries for the Blind, and the Ability One Program for the severely handicapped; awards to disabled-veteran-owned, small businesses; and awards to small businesses located in Department of Labor-designated hub zones. The high percentages in this category can be ascribed to the Department of Defense agencies' desire to support the programs.

The particular source category has sparse usage in general and in accordance with the prescription at FAR 6.302-3 is only used in very specific circumstances when the government awards a contract to a particular source as a means to reach an end. A discussion of particular source can be found on page 113. There is no apparent explanation for the results in the 0-1 and 21-999+ offers categories for the particular source category of the statutory exemptions variable. Contrary to the results in the other five categories of the exemption, particular source represents the low margin in the 0-1 offers category with 20.5 percentage points, and the high margin in the 21-999+ offers category with 48.0 percentage points. Even though the particular source exemption can be used to limit rather than restrain competition, the high number of very competitive actions is surprising and suggests further research to find an explanation.

The 0-1 offers category has a percentage difference of 67.6 percentage points; the 2-5 offers category has a percentage difference of 40.4 percentage points; the 6-20 offers category has a percentage difference of 11.3 percentage points; and the 21-999+ offers category has a percentage difference of 48.0 percentage points. Overall, the statutory exemption variable

appears to impact the number of offers by 56.3 percentage points (the high of 67.6 percentage points within the 0-1 offers category – the low of 11.3 percentage points within the 6-20 offers category = the percentage difference for the statutory exemption variable). The range in percentage differences among the four categories of the number of offers variable show that the relationships to statutory exemptions differ in strength and provide sufficient support to reject the null hypothesis for Hypothesis 1, which states that the variation in the level of competition for government contracts is statistically related to statutory exemptions.

Table 5.3 provides the results of contingency table analysis of the relationship between the contract type variable and the dependent variable, competition, expressed as number of offers.

Table 5.3 Contingency Table Analysis (Number of Offers by Percentage within Contract Type)

Contract Type	GSA Contract	Fixed Price	Cost	Time & Material	Labor Hour
Number of Offers					
0-1 Offers	100.0 %	35.9 %	39.5 %	40.0 %	70.8 %
2-5 Offers	0 %	50.3 %	48.2 %	31.8 %	21.7 %
6-20 Offers	0 %	11.7 %	8.3 %	21.8 %	7.2 %
21-999+ Offers	0 %	2.2 %	4.0 %	6.4 %	.3 %
Total	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %
	(n = 9356)	(n = 75175)	(n = 6010)	(n = 2173)	(n = 360)

A visual examination of Table 5.3 shows a wide range within the categories of the dependent variable. In the 0-1 offers category, the table shows a high of 70.8 percent 0-1 offers when using labor hour contract type and a low of 35.9 percent 0-1 offers when using fixed price

contract type. Within the 0-1 offers category contract type appears to make a difference of 34.9 percentage points.[6]

It is noteworthy that the three highest percentages of 0-1 offers are in the labor hour, time and material, and cost contract types respectively. The Federal Acquisition Regulation (FAR) at Part 16.6 states that time and material, and labor hour contracts can only be used when the scope of the work, length of the contract, or cost cannot be estimated with any degree of confidence. The FAR prescribes cost-reimbursement contracts when the cost of the contract cannot be estimated with the accuracy required to support a fixed price contract type. In an environment of uncertainty about the requirement, it is reasonable to expect that many contractors will not want to compete and the number of offers will be low. Certain kinds of work lend themselves to cost, labor hour, and time and materials contract type such as research and development, engineering, and maintenance. It is often reasonable to justify sole source, follow-on contracts for this type of work as the government can garner savings and efficiencies by keeping the same contractor or the contractor may have proprietary information that justifies the use of a statutory exemption to competition for the follow-on contract. Both of these situations are consistent with the high percentage of 0-1 offers found in the contract types under discussion.

In the 2-5 offers category, the table shows a high of 50.3 percent 2-5 offers when using fixed price contract type and a low of 21.7 percent 2-5 offers when using labor hour contract type. Within the 2-5 offers category contract type appears to make a difference of 28.6 percentage points. There are more offers in the 2-5 offers category than in any other category. It makes sense as a function of sheer mathematics that if the other three contract types, excluding GSA, were associated with the highest percentage in the 0-1 offers category and fixed price the

[6] GSA contracts are shown in the table as generating 100% of offers in the 0-1 category. As explained earlier, this result is based on an anomaly in the way the database reports contract type for GSA contracts. The GSA percentage was not considered in the calculation of percentage difference for this analysis.

lowest that fixed price would be higher in the 2-5 offers category. Additionally, the type of work associated with fixed price contract type lends itself to clear specifications, a known time frame, and ease of cost estimation – characteristics that would encourage more contractors to bid.

In the 6-20 offers category, the table shows a high of 21.8 percent 6-20 offers when using time and materials contract type and a low of 7.2 percent 6-20 offers when using labor hour contract type. Within the 2-5 offers category contract type appears to make a difference of 14.6 percentage points. In the 21-999+ offers category, the table shows a high of 6.4 percent 21-999+ offers when using time and materials contract type and a low of .3 percent 21-999+ offers when using labor hour contract type. Within the 21-999+ offers category contract type appears to make a difference of 6.1 percentage points. It is difficult to explain why there is such a large disparity between the percentages of 6-20 and 21-999+ offers in the time and materials (high), and labor hour (low) categories as they are essentially the same contract type and are used in the same situations – one includes labor and material and the other only labor. It could be a function of a lower number of contracts overall in the categories 6-20 offers and 21-999+ offers.

Results of the analysis show that contract type appears to have the largest impact in the 0-1 offers category at 34.9 percentage points. Within the remaining number of offers categories the impact steadily declines from 28.6 percentage points in the 2-5 offers category, to 14.6 percentage points in the 6-20 offers, and 6.1 percentage points in the 21-999+ category. A visual examination of Table 5.3 illustrates that even within the four categories of the number of offers variable there is a large range of percentage points by contract type. The data show a relationship between the independent and dependent variables. The results of this examination allow us to reject the null hypothesis for Hypothesis 1, which states that the variation in the level of competition for government contracts is statistically related to contract type.

When discussing contract size, it is possible to conceive of two possibilities – a larger contract size, measured by dollar amount of the contract, would attract more competition as it offers the opportunity for more profit; and a larger contract size would inhibit competition as fewer offerors would have the wherewithal to perform very large contracts. Table 5.5 provides the results of contingency table analysis of the relationship between the contract size variable and the dependent variable, competition, expressed as number of offers.

Table 5.4 Contingency Table Analysis (Number of Offers by Percentage within Contract Size)

Contract Size	$0-100K	$100K-500K	Over $500K
Number of Offers			
0-1 Offers	41.1 %	47.7 %	48.3 %
2-5 Offers	47.4 %	37.2 %	32.4 %
6-20 Offers	10.1 %	11.2 %	13.3 %
21-999+ Offers	1.4 %	3.9 %	6.0 %
Total	100.0 %	100.0 %	100.0 %
	(n = 70070)	(n = 16346)	(n = 6658)

Examination of Table 5.4 shows that there is a great deal of consistency among all four categories of the dependent variable: the $0-100K category has a percentage difference of 7.2 percentage points; the $100-500K category has a percentage difference of 15.0 percentage points; and the Over $500K category has a percentage difference of 3.2 percentage points. Across all categories, contract size appears to have an impact of only 11.8 percentage points on the number of offers.

The data show that the vast preponderance of contracts at all dollar amounts attract 0-5 offers. The percentage points drop off considerably in the 6-20 offers category and again in the

21-999+ category. The consistency of results and the low percentage difference within the categories and across contract size as compared to the contract type, industry, and statutory exemptions variables indicate that contract size does not impact competition as much as the other variables do. The results of this examination allow us to reject the null hypothesis for Hypothesis 1, which states that the variation in the level of competition for government contracts is statistically related to contract size, but overall, the contract size category as measured by the dollar amount of the contract does not provide much explanatory value.

The results of all four contingency table analyses support both Hypothesis 1 and Hypothesis 2 – data show that all four independent variables are related to competition, the independent variable, and that competition varies by industry. Examination of the data also shows a significant variation in percentage points across all categories of the independent variables, not just between the high and low endpoints of each category. Statutory exemptions and industry have a very significant impact upon competition at 56.3 percentage points and 37.0 percentage points respectively. Clearly, these variables are important in the study of competition, which is a key element of successful privatization, and deserve further study. At 28.5 percentage points, contract type has less impact on competition than statutory exemptions and industry, although the impact is still fairly significant. Of the independent variables in this study, only contract size, with an 11.8 percentage point impact on competition, appears to have a small and maybe insignificant role in the privatization debate. That determination remains to be made when the variable is further tested.

5.2. Descriptive Analysis

Qualitative data generally provide more in-depth and detailed information than quantitative data do (O'Sullivan and Rassel, 1995). The literature review in Chapter 3 describes the breadth and depth of the privatization discussion as it relates to Public Administration. Descriptive data help to explain what really happens in Department of Defense contracting. It also provides information that is useful to analyze within the four frameworks used in this study in order to draw additional conclusions about the topic of privatization in the Department of Defense, and to identify topics that should be studied further.

5.2.1. Economic Framework:

The most obvious relationship between competition and theory occurs within the economic framework. Competition is the central value that theorists claim creates cost savings and other efficiencies. Microeconomic theory creates an assumption of perfect competition and looking at how competition behaves across the ten industries in the study provides insight into the reasonableness of that claim. Table 5.5 shows the percentage of full and open competition by all industries combined, and by individual industries. Under conditions of full and open competition, there are no restrictions on competition – anyone can bid or propose against the government's requirement. An examination of the data shows that no industry attains 100 percent full and open competition, or pure competition, negating the assumption that pure competition exists in the marketplace – at least in the Department of Defense marketplace during the years 2002-2004. The healthcare industry comes very close to perfect competition with a 99.3 percent usage of full and open competition procedures. The lowest rate of full and open competition, 49.2 percent, occurs in the aircraft industry, representing a range of 50.1 percent

across the ten industries in the study and reconfirming the hypothesis that the level of competition varies by industry. Overall, the Department of Defense sustained an 82.6 percent usage of full and open competition procedures over the three fiscal years under examination – a surprisingly high number considering the amount of discussion in the media and in Congress about the lack of competition in government contracting.

Table 5.5 Percentage of Usage of Full and Open Competition by Industry

	Full and Open Competition
All Industries	82.6
Aircraft	49.2
Ships	73.9
Vehicles	73.7
Weapons	73.1
Space	77.6
Construction	84.2
Electronics	82.9
Food	89.5
Healthcare	99.3
Services	87.3

Healthcare stands alone as an industry where almost all contract actions are fully and openly competed, at a rate almost 10 percent higher than the next lowest industry. The argument can be made that healthcare is the same for the military as it is for the rest of the general population, and the healthcare industry is vast, so there is little reason to limit competition. Also, there appears to be little need for the military to engage in research and development efforts within this industry, so the vast majority of what the military buys within this industry could be classified as commercial items.

What might explain the low ranking of aircraft in the full and open competition category, with a percentage of usage that is 24.7 percent lower than the next highest ranked industry (ships)? There is one plausible explanation. The Department of Defense agencies have programs for specific aircraft that are generally awarded to one contractor. Newspapers often report on fierce competitions for specific aircraft, such as the F-22, in the timeframe leading up to contract award. When the initial contract is awarded the contractor is responsible for producing a specific number of aircraft within a specified period of time. Within such a program, all of the follow-on contracts within the program for future production will be awarded to the contractor who won the original award, and they will be on a non-competitive basis. Also, spare parts and maintenance for the aircraft may be awarded to the Original Equipment Manufacturer (OEM) on a non-competitive basis as well. It is noteworthy that the six lowest ranking industries (aircraft, ships, vehicles, space, weapons, and electronics) in the percentage of use of full and open competition category are manufacturing industries. The Department of Defense purchases a large quantity of maintenance and spare parts to support purchases made within these industries, and often determines that the OEM is the only source who can reasonably provide them.

The observations above provide some explanations for the level of full and open competition within the defense industries based on what we know about the ten industries from the literature review in Chapter 2. What insights can theory provide to the discussion on full and open competition? Can theory provide any explanations for the study results that relate to full and open competition?

There has been much discussion in academic literature about the value of Transaction Cost Theory as a mechanism to explain the broad concept of privatization, an approach favored by Brown, Potoski and Van Slyke (2005) and Brown and Potoski (2003a, 2003b, 2003c, 2005).

Some tenets of Transaction Cost Theory provide an excellent foundation to continue the analysis of full and open competition. Four concepts are particularly pertinent and frame the discussion. The first concept is that transaction costs increase when the contract mechanism becomes more complex and as the number of providers increases (Williamson, 1975). Study results are examined to see if there is any evidence that complexity impacts the level of full and open competition and if an impact exists, if it is reasonable to ascribe the results to increased transaction costs in accordance with Williamson's theory. The second and third concepts state that transaction costs increase as information asymmetry increases (Thompson 2000b; Rainey, 1997) and as asset specificity increases (Williamson, 1981). Study results and information about the industries found in Chapter 2 form the basis for analysis focusing on information asymmetry and asset specificity and their relationship to the amount of full and open competition within the defense industries.

Transaction cost theory would predict that when transaction costs rise due to the complexity of the contract vehicle and an increased number of providers, more providers make the rational decision to not enter into the transaction and the rate of full and open competition goes down. Table 5.6 shows the ranking of industries by usage of cost contracts to operationalize Williamson's concept of "contract complexity", and industry size and percentage of number of offers to operationalize Williamson's concept of "increased number of providers." Although neither of these operationalizations represents a comprehensive development of either of Williamson's variables, it provides an idea about the potential for a relationship between Williamson's concepts in the Department of Defense data. For purposes of this analysis, industries were assigned a designation of small (S), medium (M) or large (L) based on the information found in the industry descriptions in Chapter 2. The food, healthcare, construction,

electronics, and services industries are designated as large industries. Not only are the large-designated industries described as "vast" in the literature, with some of them representing a substantial portion of the Gross Domestic Product, but these industries have little or no portion of themselves dedicated solely to the military market. The Department of Defense competes directly with other all other consumers in the marketplace for goods and services in the "large" industries. In contrast, the industries designated as "small" (weapons, ships, aircraft, and vehicles) represent only the military part of the industry where few or no other consumers compete in the marketplace. For example, the entire automobile industry represents a "large" industry. This study, however, examines the specialized land combat vehicle, or military sector of the industry, which is a small portion in relation to the commercial sector of the industry that includes sales of privately owned vehicles to the general population. Only one industry (space) is designated as "medium" based on the fact that the military competes not only within the specialized military sector of the industry, but also within the commercial sector.

Table 5.6 Complexity and Percentage of Offers

Industry	Industry Size	Use of Cost Contracts (High to Low)	Percentage of Number of Offers (2-20)	Rank by Number of Offers (2-20) (High to Low)
Space	M	23.6%	37.7%	10
Services	L	11.4%	51.2%	5
Ships	S	6.6%	43.5%	8
Weapons	S	6.3%	49.2%	6
Electronics	L	4.4%	42.6%	9
Aircraft	S	2.2%	45.2%	7
Construction	L	2.0%	66.1%	3
Vehicles	S	0.9%	65.6%	4
Food	L	0.0%	84.9%	1
Healthcare	L	0.0%	79.9%	2

Table 5.6 shows a roughly inverse relationship between complexity, as measured by use of cost contracts, and percentage of offers from 2-20, suggesting validation of Williamson's concept that increased complexity creates increased transaction costs, theoretically causing some number of offerors to choose to not participate in the transaction, and lowering the rate of competition. While this is a very simplistic explanation in theory for what is certainly a far more complex explanation in practice, it is a reasonable one and deserves further exploration. While the result of this simple analysis provides some food for thought, further analysis is necessary to test Williamson's concept. Size of the industry may not be a good measure for number of providers, and other concepts such as an increase in information asymmetry or asset specificity may confound the results and are not controlled for here.

Table 5.7 Characteristics of Information Asymmetry by Industry

	High technical complexity	Few prime contractors	Many small-business primes	Multi-tiered industries
By industry	Aircraft Electronics Vehicles Weapons Services Space Healthcare* *(in some sectors)	Aircraft Electronics* Vehicles Ships Weapons Space * (in the semi-conductor sector)	Construction Healthcare Food Services	Aircraft Electronics Vehicles Ships Weapons Services Space

Next, the information asymmetry concept is examined in relation to the study results by industry to see if there is a reasonable expectation that transaction costs could either increase or decrease by industry and impact competition. Table 5.7 lists four characteristics, as identified by

transaction cost theorists, within an industry that might increase information asymmetry and lists the industries where the characteristics reside, as explained in the industry descriptions in Chapter 2.

It is reasonable to expect that industries which involve high levels of technical complexity or rapid technological advances would have a high level of information asymmetry. In these industries, individual participants' level of understanding about information provided about the transaction is dependent upon such things as technical savvy or sophistication, competency, currency, experience, etc. The Future Combat Systems in the vehicles industry; and the developing technology surrounding non-lethal weapons and energetics in the weapons industry, are examples of extremely complex transactions that involve integration, analytical, technical and support functions. There is little expectation in such an environment that everyone's understanding of a complex transaction would be exactly the same. The difference in the level of understanding might generate additional questions that the government has to answer, differences in the quality of proposals, additional evaluation of proposals, and longer negotiations, all of which would raise transaction costs for both parties to the transaction.

All of the industries that have high technical complexity also have few prime contractors, with the exception of the healthcare industry. A small prime vendor base is often very competitive, as seen in the aircraft and space industries, and the competitors generally have a high level of understanding of the transactions in their industry, including the technology and politics surrounding them. It is easier for the government to communicate with a small number of offerors, and the expectation is that participants who remain competitive in this environment have the requisite skill set to understand what the government is trying to communicate. In this situation, there is an expectation of fewer questions, competitive proposals, and shorter

evaluations and negotiations. When these conditions exist and information asymmetry decreases, transaction costs on both sides of the transaction should be mitigated within this environment. In relation to the six industries in table 5.7 who share the characteristics of high technological complexity and few prime vendors, it is hard to say whether an individual participant's transaction costs will increase or decrease. The discussion above, however, shows that the probability is high that one or both of the characteristics discussed above (high technical complexity, and few prime vendors) will impact the level of transaction costs in some way.

In contrast to the situation above, the possibility of information asymmetry is high within industries that have many small business primes, as some small businesses will be less sophisticated than others about both their own industries and the government contracting process itself. As the skill set varies across participants, transaction costs will accrue to those who have a lower understanding of the transaction than others. In other words, it is reasonable to expect that information asymmetry will exist and transaction costs will increase for some participants in an environment with many small business primes. It is also reasonable to expect that the government will have higher transaction costs under this scenario. As numerous participants with different levels of understanding continue through the contracting process they will likely ask more questions, requiring a higher level of effort for the government to respond. It is likely that the information asymmetry will cause some disparity in the quality of proposals requiring additional evaluation and negotiation, and causing higher transaction costs.

It is also reasonable to assume that information asymmetry will exist in multi-tiered industries, where second and third-tier subcontractors provide supplies and services in support of prime contractor efforts. In tiered arrangements subcontractors can be expected to have varying skill sets and different levels of understanding of the transaction. Often, knowledge of the

transaction will not come directly from the government, but from the prime contractor as second-hand information. Since the subcontractor's understanding of the transaction will directly impact the information he provides to the prime, it is reasonable to expect that the information asymmetry will have a significant impact upon the quality of the prime contractor's proposal requiring additional time and resources to evaluate and negotiate, as noted above, and increasing transaction costs for all parties.

Based on the discussion above, it is not unreasonable to assume that information asymmetry exists in the marketplace where the Department of Defense buys its goods and services, and to differing degrees based on certain characteristics within individual industries. Further, there is nothing in the data or study results that is incompatible with the notion that information symmetry increases transaction costs, which may negatively impact the level of competition if they are high enough. In fact, a brief examination has shown that within the scope of this study, reasonable arguments can be made to support the accrual of transaction costs for all parties to the contract agreement.

Table 5.8 Characteristics of Asset Specificity by Industry

	Site specificity	Physical asset specificity	Human asset specificity	Dedicated assets	Time specificity
Industry	Shipbuilding Vehicles Space Aircraft Electronics Food Services Construction	Electronics Vehicles Weapons Space Aircraft Services Food	Aircraft Space Electronics Vehicles Shipbuilding Weapons Healthcare Services Construction Food	Aircraft Shipbuilding Weapons Space	Electronics Food Services

The next tenet of transaction cost theory under examination states that when asset specificity increases transaction costs increase as well. Table 5.8 lists five characteristics of asset specificity, as identified by transaction cost theorists, that exist within the industries under examination and which may impact transaction costs. McGuiness considers asset specificity a condition that exists when assets have a higher value to a specific transaction than they do in any other context or environment (McGuiness, 1994). Williamson adds that such assets are unique and/or specialized (Williamson, 1975, 1981, 1985). The applicability of the five characteristics to the industries are examined below, followed by an examination of the data from this study to see if the data support or negate the principles of asset specificity described by scholars.

The analysis begins with the first three characteristics, which were identified by Williamson (Williamson, 1983). He describes site specificity as a condition that is present when a resource exists at a certain location and is difficult or very costly to relocate. Joskow introduced the notion that site specificity also exists when buyers and sellers locate their assets close to each other (Joskow, 1988). Looking at Williamson's definition, it is evident that all of the manufacturing industries (shipbuilding, vehicles, space, aircraft, space, and electronics) will have some degree of site specificity as the manufacturing plants, production lines, etc. are expensive, immobile, fixed assets. In the construction industry, the need to move heavy equipment reasonably increases transaction costs. Many military bases are located in remote areas, increasing the transaction costs of moving equipment to construction sites located there. The fluctuating cost of natural resources and building supplies, and the need to transport them to construction sites indicates site specificity within the industry and impacts transaction costs. In the food industry, site specific characteristics such as climate and soil type impact producers' ability to grow different crops. Weather events such as drought or flood can also add to site

specific transaction costs. As the military relies more and more on contractors to travel with the troops, feed them on the battlefield, and maintain weapons, vehicles and other systems, it can be argued that site-specific transaction costs within the services industry are increasing. Some transaction costs associated with sending service personnel to Iraq or Afghanistan include increased transportation, training, insurance, and subsistence costs.

Joskow's notion of site specificity accruing when participants to the transaction locate assets close to each other can be clearly seen in the Department of Defense industries. The four shipyards that support the shipbuilding industry – Portsmouth, Pearl Harbor, Puget Sound, and Norfolk Naval Shipyard – are collocated near large military bases. If naval bases consolidated or closed, a possibility with the Base Realignment and Closure initiative, the cost of relocating a shipyard would be prohibitive. A more likely outcome would be the closure of the shipyard, which would increase transaction costs for all players in the industry and negatively impact the level of competition. In the United States, the vehicle industry is located in Detroit. The US Army located its Tank and Automotive Command (TACOM), which is responsible for the oversight of the combat vehicle sector, in nearby Warren, Michigan. While this decision could increase transaction costs for the Army, it could also mitigate other costs associated with the location of its command. In the space industry, many participants locate offices and manufacturing plants in and around the National Aeronautic and Space Agency (NASA) facilities located in Houston, Huntsville, and Cocoa Beach. Before a launch of the space shuttle, for example, news reports often comment on the difficulty involved in moving the shuttle from a nearby hanger to the launch pad. It is interesting to note that operating costs would increase dramatically if the shuttle were not located near the launch pad, but transaction costs accrue by establishing it nearby creating a situation where participants clearly need to understand both their

operating costs and transaction costs to make the rational decision called for by microeconomic theory. In the food industry, many participants locate processing plants close to the growing centers to increase freshness and facilitate distribution, a logical decision that increases site specificity. An example, within the seafood sector, is that many of the fishing vessels have the processing capability aboard the vessels to clean, flash freeze, and store the catch. It is clear from the discussion that site specificity has tremendous application within the Department of Defense industries. Physical asset specificity is examined next to see if it has the same large impact on the Department of Defense industries as site specificity.

Williamson defines physical asset specificity as the need for specialized tools or systems that are designed for a specific purpose (Williamson, 1983); Joskow adds the concept that physical asset specificity refers to an investment in tools or equipment that have a low value outside of the specific environment where they are used (Joskow, 1988). When discussing physical asset specificity it is useful to note that some of the supplies manufactured for the Department of Defense in the manufacturing industries have their genesis in items that are sold commercially and are then modified for military use. If specialized equipment is needed, or the production line changed to implement the modification, the purchase of those assets and actions taken to modify the end items would create physical asset specificity. There are many examples within the Department of Defense marketplace of commercial items that are modified for military use. The aircraft industry uses commercial airframes for planes needed for medical evacuations and fits them with emergency medical and transport equipment. Military passenger planes use commercial airframes and fit the seats facing the rear of the aircraft – a modification that makes air travel safer, but that the industry perceives would not be palatable to the general public. In the electronics industry, approximately 97 percent of the goods and services produced

are for the commercial market. Radio equipment provides an example of an item within the electronics industry that might be modified for military use. At the point where technology, the manufacturing process, or specifications change to support the military mission, the industry incurs additional transaction costs through the creation of physical asset specificity.

In relation to Joskow's interpretation of physical asset specificity, there are numerous examples within the Department of Defense industries of items that are specific to military action, and the equipment, plants, technology, etc. associated with producing them have little application outside the military environment. The description in Chapter 2 of the military fixed-wing, rotorcraft and military jet engine sectors within the aircraft industry provides an excellent example of physical asset specificity. Similar situations can be found in the vehicle industry in relation to tracked and other combat vehicles. Tanks, the Army's Stryker Vehicle, and the Marine Corps' Expeditionary Fighting Vehicle represent a high level of physical asset specificity. Existing high-tech weapons systems, and emerging systems, non-lethal weapons, and energetic weapons all reflect physical asset specificity. In all of the examples mentioned here, transaction costs accrue because production equipment and manufacturing facilities have little value outside of the military environment. The F22 production line at the Lockheed Martin plant in Marietta, Georgia, would be expensive to convert to a commercial application, if it could be converted at all. The same is true of the production lines and equipment that create vehicles and weapons. It is difficult to think of another use for the equipment and facilities found in the four shipyards that create battleships, another industry with apparent high rates of physical asset specificity.

Although it is easy to explain and understand how the industries described above exhibit physical asset specificity some industries other than the heavy manufacturing industries also

display physical asset specificity. Although the electronics industry has a heavy manufacturing component like the industries discussed so far in relation to physical asset specificity, so much of the electronics industry is commercial (approximately 97 percent) that it might be assumed that physical asset specificity would not have as great an impact on the electronics industries as other industries, even though it exists to some extent. Within the services industry, a non-manufacturing industry, many organizations exist to maintain the vehicles, weapons, aircraft, ships, etc. used exclusively by the military. These organizations must invest in both specialized equipment and facilities in order to provide their services. The discussion above about site specificity and the fishing vessels fitted with equipment and facilities necessary to clean, freeze, and store fish as they are caught also provides an example of physical asset specificity – the fishing vessel has little value outside of the fishing venue and could not be transitioned easily for other uses within the food, or any other, industry. The demise of the family farm and advent of the huge, corporate-run farms creates physical asset specificity as these organizations require large amounts of mechanization to manage and support production.

This discussion has shown that physical asset specificity and site specificity have great application within the Department of Defense contracting environment. We will see if the trend continues with human asset specificity, the next characteristic to be examined.

Williamson says that human asset specificity exists when a transaction requires highly specialized physical or mental skills that cannot be transferred to another environment easily (Williamson, 1983). Joskow adds that human asset specificity exists when specialized skills are developed as people learn by doing (Joskow, 1988). In the industry descriptions in Chapter 2 virtually every industry was described as challenged with pending retirements and a lack of

ability to hire and retain qualified personnel, even those industries facing over-capacity and under-utilization issues.

Following the logic in an earlier discussion, it stands to reason that in those industries where there is high physical asset specificity because the technology and equipment used in those industries are highly specialized and not easily transferable, the skill set required to use the technology and equipment is also highly specialized and not easily transferable, which equates to human asset specificity. Industries such as space; aircraft; vehicles; the systems, energetics and non-lethal weapons sectors of the weapons industry; the nuclear sector of the shipbuilding industry; and the technology development function of the electronics industry require very highly trained and educated personnel to perform research and development tasks, and manage complex production processes. A large number of Ph.D.s, scientists, engineers, mathematicians, and other professionals populate these high technology industries and their expertise is not easily transferable. An engineer working in the space industry who is responsible for designing satellites would have a difficult time transferring to the vehicle industry and designing tanks, although the position title for both jobs might be the same or similar, reflecting a high degree of human asset specificity. Healthcare professionals such as doctors and nurses are highly valued within their industry, but do not have the same high value outside of their area of expertise. Researchers who work to effect breakthroughs in medical treatment, or develop drug protocols to treat disease do not have highly mobile skill sets. Both of these groups represent human asset specificity within the healthcare industry.

It is easy to understand the existence of human asset specificity in high-tech, highly complex, research and development oriented, and manufacturing industries, but it may not be as evident in others although it does exist to some degree. The services industry employs many

personnel with expertise that is specialized and not easily transferable. In the military marketplace, mechanics who work on aircraft, land combat vehicles, or ships; consultants with knowledge of military processes; and engineers and architects who provide specifications for military projects meet that description. The construction industry is made up of highly specialized and trained engineers and architects, who design the projects that the tradesmen within the industry build or complete. Although not as highly trained or educated as the professional group, the tradesmen have skill sets that are specialized and not easily transferable. A plumber could not easily pave a road or put on a roof any more than an electrician could easily build the infrastructure to carry water throughout a factory – both require specialized skills sets and represent human asset specificity within the construction industry. The food industry includes highly trained and educated personnel who perform tasks such as research and development to create disease-resistant crops, and design systems to safeguard the food supply – skill sets that are specialized and not highly transferable. The industry also includes many uneducated laborers who perform tasks such as planting and picking crops, which are transferable skills. The food industry also has personnel who fall somewhere in between the two groups. Those personnel have a skill set that it is not easily transferable, is specialized, and is garnered through experience, a quality that Joskow describes in his definition of human asset specificity.

The construction and food industries provide good examples of what Jaskow meant when he said that human asset specificity exists when specialization of skills is created when people learn by doing. Tradesmen in the construction industry and workers in the food production industry such as fishermen and farmers learn by doing. Tradesmen often take part in apprentice programs to learn a specific skill, and the value of that skill increases as their experience and

expertise increase. Farming is not an exact science and the knowledge that comes with the experience gained from farming successfully through a severe drought or insect infestation is invaluable. Fishing is similar in that an experienced fisherman who understands the migratory patterns of the fish he seeks to catch, and can successfully pilot a large boat through rough seas has an advantage over less experienced fishermen. Both examples show that human asset specificity develops based on experience, in addition to education and training, and can exist in any of the industries under examination in this study.

In addition to the distinction that Joskow made to Williamson's definition of human asset specificity, he introduced another characteristic of asset specificity. Dedicated assets exist when the seller makes investments based on an expectation of a large amount of trade with one buyer (Joskow, 1988). There are many examples of dedicated assets among the ten industries that make up the defense industry. A shipyard that has the capability to produce a nuclear submarine, and builds one, can only expect to sell it to the Navy. All of the facilities, tooling, dyes, etc. that support the production of the nuclear submarine represent dedicated assets. The same can be said for any of the equipment produced or services provided by any of the industries when they are used exclusively by the military – weapons and munitions, land combat vehicles, combat ships and aircraft, unmanned vehicles, a missile defense system, meals ready to eat (MREs), etc.

Malone, et al introduced the final characteristic of asset specificity under examination -- time specificity. They define time specific assets as those that must be delivered to the buyer in the transaction within a specified, relatively limited time frame (Malone, et al, 1987). It is obvious that the food industry must consider transaction costs based on time specificity as food is a consumable asset. Producers within the food industry must take whatever steps are necessary to ensure that their goods reach the market fresh. In the earlier example of the fishing vessel with

processing capability aboard, which created physical asset specificity, the fish caught on the vessel are time specific assets which have no value if they are not delivered to the marketplace timely. The rapid pace of technological development in the electronics industry can be considered to cause time specificity. Producers within that industry have a short period of time to get competitive products to market as new models are introduced frequently, reducing shelf life and bringing on early obsolescence. Even though the Department of Defense only represents 3 percent of business for the entire electronics industry, that amount of business represents a great deal of money. For example, the US Army is Dell Computer's single largest customer. If Dell does not remain competitive by timely bringing products to market it could lose the Army's business at a great cost to the organization. The service industry often has timeframes that they need to meet as part of a transaction. For example, in maintenance agreements for hospital equipment service providers might have to ensure that maintenance personnel are available for on-site repairs within one hour of equipment failure. In this circumstance transaction costs based on time specificity exist because maintenance personnel have a very short window of time to respond to the need and their value will decline in the form of a discounted price for their services if they do not meet the required timeframe. Since many of the contractors who do business with the Department of Defense provide maintenance services for equipment in diverse industries (aircraft, healthcare, weapons, ships, electronics, vehicles, healthcare, space, construction) it is reasonable to expect that time specificity is a widespread form of asset specificity that must be considered when determining transaction costs.

The preceding discourse shows that it is highly likely that transaction costs exist within the Department of Defense marketplace to some extent across all of the industries. There is some support in the literature and the data that they do not exist uniformly across industries. It is not

unreasonable to conclude that the heavy manufacturing industries in particular have a high incidence of transaction costs. Although the discussion above provides many plausible explanations for information asymmetry and asset specificity to exist in almost all of the industries, they appear more likely to appear within the manufacturing industries. Those industries also have the lowest rate of competition, measured by the number of offers between 2 and 20, in the Department of Defense as shown in Table 5.6 on page 85. The data show that 5 out of the 6 lowest ranked industries for competition overall (space, electronics, ships, aircraft, and weapons) are manufacturing industries. This finding is consistent with Sclar and Coase's claim that transaction costs can negate the cost of using the vehicle in the first place. If in fact participants in the privatization process recognize a high level of transaction costs, they may choose not to compete in the marketplace and the rate of competition will go down, which may be the case in the manufacturing industries.

Like Transaction Cost Theory, Public Choice Theory also focuses on forces that negatively and positively impact competition. As explained earlier, public choice theorists offer competition and the market as the way to remedy government failures. Markets are created by separating policy making from service provision. In turn, this separation creates the market in the form of buyers and sellers of the goods and services that the government needs (Schwartz, 1994). Along with the creation of the competitive marketplace come the benefits associated with it such as cost savings and efficiency.

E.S. Savas has written extensively about privatization, making a large contribution to the body of literature and echoing many of the sentiments of the micro-economists and public choice theorists. Consistent with Public Choice Theory, Savas believes that competition is the critical element that ensures successful privatization, and that competition can and should be fostered

Table 5.9 Functions Contracted Out in Indianapolis

Public Works	Transportation	Information Technology	Public Safety	Admin	Parks	Social Services
Abandoned vehicles	Airport operation	Computer and data network services	Bike patrol	Copying	Concessions	Welfare-to-work assistance
Asbestos abatement	DOT Lab		Jail expansion	Courier service	Golf academy	
Billing – trash collection	Paratransit		Photo finishing	Facility security	Golf courses	
Billing – sewer services	Parking enforcement			Graphic arts	Janitorial	
Hazmat emergency response	Parking meter collection and counting			Light towing	Landscaping	
Lab services	Public transit			Microfilm-ing	Pedal-boar rentals	
Solid waste burning	Snow plowing			Window washing	Pool operation	
Recycling	Street maintenance				Portable toilets	
Sewer maintenance	Vehicle maintenance				Tree nursery	
Street sweeping					Tree removal	
Trash collection					Velodrome operations	
Wastewater treatment						
Waste solvent management						
Street repairs						
Vehicle repairs						

Source: Office of the Mayor, Indianapolis[7]

[7] Savas, Emanuel S., 2005. *Privatization in the City: Successes, Failures, Lessons.* Washington, D.C.: CQ Press, p.52.

carefully even though there are transaction costs associated with doing that. He believes that competition leads to lower costs and prices, higher productivity, innovation, and a higher quality level of service. He has stated that, "Contracting has been found to be superior to in-house service provision in general, but it does not follow that contracting will be advantageous in every single case. Prudent contracting of appropriate services under competitive conditions, preceded by a careful study to gauge the potential benefits and followed by effective monitoring, is the key

Table 5.10 Contracted Functions in Indianapolis by Department of Defense Industry

Services			Construction
Abandoned vehicles	Parking enforcement	Microfilming	Asbestos abatement
Billing for trash collection	Parking meter collection and counting	Window washing	Hazmat emergency response
Billing for sewer services	Public transit	Concessions	Street repairs
Lab services	Snow plowing	Golf academy	
Mass burning of solid waste	Street maintenance	Golf courses	
Recycling program	Vehicle maintenance	Janitorial services	
Sewer maintenance	Computer and data-network services	Landscaping	
Street sweeping	Bike patrol	Pedal-boat rentals	
Trash collection	Jail expansion	Pool operations	
Wastewater treatment	Photo finishing	Portable toilets	
Waste solvent management	Copying	Tree nursery	
Vehicle repairs	Courier service	Tree removal	
Airport operation	Facility security	Velodrome operations	
DOT Laboratory	Graphic arts	Welfare-to-work assistance	
Paratransit	Light towing		

to success."[8] Savas understands that privatization does not always succeed and lists a litany of situations when it will not, echoing comments made earlier by other scholars about

[8] Savas, Emanuel S., 2005. *Privatization in the City: Successes, Failures, Lessons.* Washington, D.C.: CQ Press, p.160.

specifications, contract management, competition, etc.(Moe, 1987; Kettl, 1993; Rainey, 1997; Siegel, 1999; Chi, 1998; Wallin, 1997; Hodge, 1996; Handler, 1996; Prager, 1994; Sclar, 2000; Starr, 1987).

In his most recent book, Savas examines privatization in nine American cities – Indianapolis, Phoenix, Philadelphia, Charlotte, Atlanta, Washington, D.C., New York, Chicago, and Milwaukee. A comparison of his results with the results of this study is enlightening. Table 5.9 lists the functions that were contracted out in the city of Indianapolis and included in the Savas study.

Table 5.10 assigns the functions in Table 5.9 to the ten industries that represent the Department of Defense marketplace. The Department of Defense procures many of the same services that are procured in the city of Indianapolis.

All but three of the functions contracted out in the city of Indianapolis would fall into the services industry if contracted for in the Department of Defense; the remaining three functions would fall into the construction industry. The construction industry was ranked third highest of the Department of Defense industries for the level of competition as measured by 66.1 percent of offers between 2 and 20; the services industry was ranked sixth with 51.2 percent of offers between 2 and 20. This level of competition does not appear to be consistent with the high level of competition that Savas recommends for successful contracting out, and he clearly touts the Indianapolis experience as a resounding success. Further examination of the functions shows that many of them represent simple and straightforward activities that can be readily defined which lend themselves to the fixed-price contract type described in Chapter 5 on page 116. Other findings from this study show that within the construction industry, fixed price contracts were used for 95.0 percent of contract actions; within the services industry 74.0 percent of contract

actions were awarded using fixed price vehicles. Considering the size and complexity of Department of Defense contracts, and as noted earlier, the percentages of use of fixed price contracts are surprisingly high within the department. If the city of Indianapolis has smaller and less complex contract vehicles than the Department of Defense, it is reasonable to assume a high use of fixed price contract vehicles, which would attract more competition. This explanation provides a reasonable explanation for the success of the privatization program and an important lesson learned for other organizations to follow.

The story is similar in Phoenix, Arizona over a 15 year period from 1979-1994. Table 5.12 shows a list of 34 contracts awarded during this timeframe in public-private competitions. All of the functions listed in the table as services would be categorized as services if procured in the Department of Defense, with the exception of street repair which would be categorized as construction. Table 5.11 shows that 30 of 56, or 53.6 percent of contracts awarded were for landscape maintenance, a simple, easily defined service that lends itself to the fixed price environment. Savas documents the savings claimed for these and similar type contracts in Phoenix from 1979-2003 in the amount of $23.8 million, based on increased efficiency and higher quality of service due to competition. In fact, it is possible that the type of functions contracted for, and the contract type chosen to procure them created an optimum environment for competition thereby increasing the chances for success and savings through the privatization effort (Savas, 2005). Selecting candidates for privatization that lend themselves to the appropriate contract type may be one way that competition can be fostered as Savas recommends.

The story is the same in Chicago, Charlotte, Milwaukee, Atlanta and Washington, D.C. Non-complex services represent the largest percentage of contracts awarded; some minor

construction projects are also privatized. In addition to services and construction awards, Philadelphia privatized two requirements that would be categorized as healthcare procurements if procured in the Department of Defense[9]. Data from this study show that the healthcare industry has the overall highest percentage of full and open competition in the Department of Defense at 99.3 percent, the second highest percentage of offers between 2 and 20 at 79.9 percent, and a 91.5 percent usage of fixed price contracts. These results create a reasonable expectation that privatization should be successful in the healthcare industry.

Table 5.11 Contracts Awarded from 1979-2003 in Public-Private Competitions in Phoenix

Service	Contracts won by private firms	Contracts won by city agencies
Ambulance service	0	1
Ambulance billing	1	0
Data entry	0	1
Fuel distribution	0	1
Instrument maintenance	0	1
Landfill operation	1	0
Landscape maintenance	23	7
Public defender	1	0
Refuse collection	7	5
Senior-housing management	0	1
Street repair	0	2
Street sweeping	0	2
Water billing	1	0
Water meter repair	0	1
TOTAL	34	22

Source: Robert Franciosi, *Garbage In, Garbage Out: An Examination of Private/Public Competition by the City of Phoenix* (Phoenix: Goldwater Institute, 1998), 5.[10]

[9] Savas, Emanuel S., 2005. *Privatization in the City: Successes, Failures, Lessons.* Washington, D.C.: CQ Press, p.76.

[10] Savas, Emanuel S., 2005. *Privatization in the City: Successes, Failures, Lessons.* Washington, D.C.: CQ Press, p.67.

Savas examines privatization in New York City in great depth as the city has an extensive privatization program that included contracts, vouchers, divestitures, deregulation, etc. In 2002, New York City had over 20,000 contracts representing expenditures of over $6B, or 15 percent of the city's annual budget.[11] An examination of the contracts awarded as privatization initiatives show similar results to the other municipal governments that Savas examines in his study. Table 5.12 shows the number of contracts awarded by industry in 2002. It is interesting to note that no construction contracts are mentioned in the list. The vast majority of contracts are services contracts and the city of New York procures many of the identical services that the military procures for its installations, family programs, etc. The multi-billion dollar scope of these contracts makes them more analogous to the Department of Defense experience than some of the other cities. The large number of contracts suggests that the true, city-wide requirement is highly splintered, although the very large number of contracts in some of the contracted service areas suggest that they are broken out in fairly small, less complex contract vehicles that lend themselves to be written as fixed price type contracts. It would be very interesting to see how many offers per contract action New York City is getting within the service category/industry and the contract type used to procure these services. Such an analysis would provide some insight into the behavior of competition in another marketplace, and a reasonable comparison to validate or dispute the results of this study.

In addition to Savas' work, there is another study in the literature that may provide some opportunity for comparison to the results of this study. Graeme Hodge performed a meta-analysis of 28 studies to examine cost savings accruing to privatization efforts in five nations during the

[11] Giuliani, Rudolph W., 2000. "Reforming New York City." In Andrisani, Paul J., Hakim, Simon and Leeds, Eva, Ed. *Making Government Work.* New York: Rowman and Littlefield, p. 164.

Table 5.12 Contracts Awarded in New York City in 2002 by Industry

Number of Service Contracts in NYC in 2002	Number of Healthcare Contracts in NYC in 2002
IT maintenance (2,197)	Homecare services (129)
Vehicle maintenance and repair (402)	AIDS services (116)
General maintenance and repair (1,599)	Mental hygiene services (309)
Printing (474)	Hospitals contracts for prison health care (14)
Community consultants (258)	Visiting nurse services (1)
Finance and investing (57)	
Security services (216)	
Office temporary services (600)	
Cleaning services (404)	
Maintenance for foreclosed properties (30)	
Transportation of pupils (430)	
Other transportation (non mass transit) 279	
Protective services for adults (10)	
Children's charitable institutions (71)	
Child welfare services (302)	
Day care of children (583)	
Head Start (167)	
Homemaking services (10)	
Homeless family services (308)	
Homeless individual services (146)	
Bank charges for public assistance accounts (19)	
Other social services (68)	
Economic development (65)	
Employment services for public assistance recipients (87)	
Legal Aid Society (2)	
Subsidies to cultural institutions (648)	
School contracts for handicapped children (291)	
Course development and training for city government employees (507)	
Maintenance and operation of infrastructure (433)	
Payments to private agencies for federal programs (2,369)	
Education and recreation services for youths (1,185)	
Professional services (4,502)	
Other personal and technical services (1,176)	

timeframe 1974-1995. The studies in the meta-analysis looked at numerous services including waste management, school transport/busing, refuse collection, manpower training centers, property tax assessment services, hospital services, cleaning, bus transport, waste water treatment, police services, computer network management, domestic support services, general municipal services, and hospital management – all of which would be procured in the Department of Defense within the services or healthcare industries. Many of these services represent requirements that are non-complex and easily defined – a prerequisite for the fixed price contract type. Hodge found that overall there was a cost reduction associated with contracting, and within the refuse collection and cleaning functions there was a strong statistical association with cost savings. Within other functions, however, the statistical association with cost savings could have resulted from chance (Hodge, 1996). These findings are not inconsistent with the notion that competition varies across functions and industries, and that choice of function to privatize and/or contract type can impact the level of competition and therefore cost savings. As with the Savas study, it would be beneficial to know the number of offers generated and the contract types used in the 28 studies that Hodge reviewed. Both variables are examined under the management framework that follows.

While some of the findings in this study do appear compatible with some of the arguments that provide the theoretical underpinnings for privatization, what of the counter arguments? Elliott Sclar believes that competition is difficult to maintain, a supposition supported by the finding in this study that competition varies by industry. That finding also supports Sclar's contention that competition in and of itself does not ensure the success or failure of a privatization effort (Sclar, 2000). Even in the least competitive industries in the Department of Defense, as measured by number of offers, clearly there are many successful privatization

efforts. Finally, he notes the importance of transaction costs and laments that they are often not considered when effecting the make or buy decision. The results of this study show that there could be many transaction costs associated with the defense industries with lower levels of competition as measured by number of offers, making transaction costs very germane to the competition discussion.

In a 2001 examination of the Indianapolis privatization initiatives consisting of numerous articles written by diverse academicians and public servants, the editors draw the conclusion that in fact the Indianapolis privatization experience from 1992-1999 was not all that it was cracked up to be by politicians and the media alike (Ritchie and Kennedy, 2001). Their examination of the facts shows that cost savings were grossly overstated and not supported by data, and in fact municipal debt in Indianapolis increased during the timeframe under examination because city administrators incurred debt to pay operating expenses to support the privatization efforts. Refuting the claim that the city of Indianapolis was run efficiently and effectively during this period, Ritchie and Kennedy assert that debt and crime increased; the citizenry was not happy with the level and quality of the services provided; the experience was polarizing; and there was tremendous confusion surrounding service provision based on a lack of clarity surrounding roles and responsibilities. Additionally, in accordance with the concerns of many scholars already noted in this study, they found that there was a lack of planning and analysis to support the decision to privatize or not; no consistent contracting process used to award contracts; contract awards were not always competitive, and sometimes represented patronage and created monopolies; internal controls were lacking; and accountability and transparency of government was lost. They ended their work with the conclusion that many had reached before them – the make or buy decision is very complex and should involve a thorough

analysis of the circumstances surrounding it. In addition, it is necessary to have standardized procurement processes, and a methodology to manage the contract after it is awarded – all management issues. Ritchie and Kennedy's conclusions are very different from those drawn by Savas in his study of the Indianapolis experience (2005). The discrepancies between the two points of view need to be resolved to foster a clear understanding of what really happened in Indianapolis, information that would be very enlightening to practitioner and theorist alike.

A final concept to consider under the economic framework is that of quasi-markets. Lowery describes the markets that provide public goods as services as "quasi-markets" and defines three types of market failure -- failure in market formation, failure by preference error, and failure by preference substitution (Lowery, 1998). Failure by preference error and failure by preference substitution are more appropriate for discussion under the legitimacy framework, but failure in market formation will be discussed here. Lowery contends that markets fail to form because markets in contracted services are often monopolistic or oligopolistic, not competitive. The literature review in Chapter 2 provided many examples of oligopolistic industries – vehicles, ships, the small arms sector of the weapons industry, the jet engine sector of the aircraft industry, and the launch provider sector of the space industry. Barriers to entry and insufficient demand provide two explanations for the development of a non-competitive environment. In Chapter 2, Anderson and Belt describe the electronics industry as having extensive barriers to entry based on the high capital requirements needed to build a production facility (Anderson, 2004; Belt, 2005). The vehicle industry is described as having few prime contractors and an increasingly complex environment where even the prime contractors are subcontractors to a lead integrator (Barnhart, 2004). Additionally, since it is a heavy manufacturing industry there are high capital requirements for entry into the industry, a significant barrier. Chapter 2 lists insufficient demand

as a challenge in six industries -- the rotary sector of the aircraft industry; the weapons systems; and small arms sector of the weapons industry; and in the vehicle, ships, and space industries. The lack of demand has led to overcapacity in these industries, which in and of itself provides a disincentive for others to join the industry. Five of the six industries have the lowest rate of competition overall, measured by the number of offers between 2 and 20 (see Table 5.6 on page 85) and are heavy manufacturing industries – space, electronics, ships, aircraft and weapons. These are the same industries found to have the highest levels of asset specificity discussed earlier in this chapter. The vehicles industry has the fourth highest competition rate in the Department of Defense, measured by the number of offers between 2 and 20 (see Table 5.6 on page 85), and is also a heavy manufacturing industry. There is no obvious reason to explain why the vehicle industry is more competitive than the other five. It is significant enough to say that contingencies such as barriers to entry and underutilization appear to create quasi-market failures that impact competition, and they do not appear to act uniformly across industries.

To summarize the analysis so far, study results support the concept that transaction costs within specific industries may impact competition. An examination of the Savas and Hodge studies supports the concept hypothesized in this study that competition and successful privatization results vary by industry. The concept of failure in market formation is consistent with the results of the study and the industry descriptions found in the literature reviews. The preceding analysis shows the economic framework to be a valuable perspective to use to examine privatization and tells part of the story about what happens in Department of Defense contracting. The rest of the story lies ahead as the analysis shifts to the management framework

5.2.2. Management Framework:

The economic framework focuses on the very existence of full and open competition – it is available or it is not. Individual private sector organizations within the defense industries make decisions about whether or not to compete for government business based on transaction costs and other economic rationale. The management framework shifts the focus to the quality of the competition. During the contracting process, government contracting personnel make decisions that impact the level or amount of competition, as measured by the number of offers received. Study results relating to contract type, statutory exemptions, and industry size are discussed under the management framework. Some of the same theories examined in the economic framework are used to continue the analysis of competition in Department of Defense contracting.

As reported earlier, study results show that none of the defense industries operate under conditions of perfect competition. Government contracting personnel invoke statutory exemptions to the Competition in Contracting Act (CICA) to justify the use of non-competitive procedures. The Federal Acquisition Regulation (FAR) at Part 6.302 discusses the circumstances when use of "other than full and open" can be used: when there is only one responsible source and no other supplies or services will satisfy agency requirements; during a time of unusual and compelling urgency; under an environment of industrial mobilization, when exercising an engineering, developmental, or research capability, or expert services and only one particular source can meet the government's requirement; when a non-competitive action is authorized or required by statute, as is the case with the Federal Prison Industry, 8(a) Program and under Hub-Zone and Veterans legislation; when authorized by international agreement; when it is an issue of national security; and when it is deemed to be within the public interest. The first four

exemptions represent categories under the statutory exemption variable. The remaining exemptions account for only .6 percent of the usage of the statutory exemptions and are consolidated into an "other" category for purposes of this study.

The statutory exemptions category generates much Congressional ire. Newspapers are full of articles questioning the use of "no-bid" contracts. There are still daily references in national newspapers to such infamous contracts as the Halliburton contract awarded when the Department of Defense first entered Iraq, and the contracts awarded by the U.S. Army Corps of Engineers in the wake of Hurricane Katrina. The Federal Acquisition Regulation (FAR) at Part 6.303 requires government contracting officers, the people who actually obligate government funds by signing the contract, to justify the use of non-competitive contracts through a fairly stringent "justification and approval" process. Some exemptions require a very high degree of scrutiny. FAR 603-7 identifies the approving official for the public interest exemption for the Department of Defense as the Secretary of Defense; in the defense agencies the approval authority resides with the Secretaries of the Army, Navy, and Air Force, and the authority may not be re-delegated.

Despite the clear preference in the FAR and Congressional intent for full and open competition, there are many instances when that is not feasible in the Department of Defense. Table 5.13 represents the percentage of offers within the six categories of statutory exemptions to the Competition in Contracting Act by industry. What accounts for the disparity in the usage of competition across industries? Why does the healthcare industry compete almost all of its actions while the aircraft industry competes just half of its actions? Why do some industries use statutory exemptions at much higher rates than other industries? Analyzing these questions through the lens of the management framework provides some answers.

Table 5.13 Percentage of Use of Statutory Exemptions by Industry

Statutory Exemptions	Full and Open	One Source	Urgency	Particular Sources	Authorized by Statute	Other
All Industries	82.6	9.9	.8	1.0	5.1	.6
Aircraft	49.2	45.4	2.6	.9	1.1	.8
Ships	73.9	20.9	2.5	.4	2.2	.0
Vehicles	73.7	21.9	2.1	.3	1.9	.1
Weapons	73.1	18.5	1.5	2.1	3.3	1.4
Space	77.6	17.6	1.2	2.2	.5	.9
Construction	84.2	1.2	.6	.1	13.5	.4
Electronics	82.9	11.7	1.0	.4	3.4	.6
Food	89.5	.0	.1	.6	9.8	.0
Healthcare	99.3	.2	.1	.1	.2	.0
Services	87.3	4.5	.5	1.8	5.2	.7

The aircraft industry has the highest percentage of usage of the one source statutory exemption of all industries at 45.4 percent for all actions – more than double the next highest industry (vehicles). The use of the one source exemption is consistent with the explanation in the economic framework about the lack of full and open competition in the aircraft industry due to the decision to select the Original Equipment Manufacturer (OEM) for spare parts and maintenance. In order to limit competition to the OEM for spare parts and maintenance, contracting personnel must invoke one of the statutory exemptions to CICA. Whereas the manufacturing industries were the six lowest ranking industries in the percentage of “full and open” competition category, they are the six highest ranking industries in the “one source” category, in almost exact reverse order.

The four lowest ranking industries in this category (services, construction, food and healthcare) are non-manufacturing industries. Within these industries the Original Equipment Manufacturer issue should not be a factor to the extent that it is in the manufacturing industries. FAR 6.302-1(a)(2)iii provides that follow-on contracts for specialized services may be procured

under the one source authority if a competition would result in duplication of cost or unacceptable delay to the government, which explains the 3.4 percent higher use of one source for the services industry than the next lowest non-manufacturing industry. The remaining three industries (construction, food, and healthcare) have very low percentages of use.

The urgency exemption has a very small range of 2.6 percent among all industries and is not a heavily used category across the Department of Defense. The media has reported extensively about the Army Corps of Engineers' usage of the urgency exemption to competition in the clean-up effort after Hurricane Katrina, which presents a good example of the way the exemption would be used within that industry.

The particular source category also has sparse usage and in accordance with the prescription at FAR 6.302-3 is only used in very specific circumstances when the government awards a contract to a particular source as a means to reach an end. One such situation exists when the government awards a contract to a particular source in order to keep a company in business to ensure that a sufficient industrial base exists to support a mobilization, if that becomes necessary. In another situation the government could award a contract to a particular source to develop or maintain a desired capability in engineering, or research and development. Finally, the exemption can be used to acquire the services of an expert or neutral party to participate in an on-going or anticipated dispute or litigation. There is a very small range of 2.2 percent among all industries in this category.

There is a 13.6 percent range in the authorized by statute category among all industries. The construction industry has the highest percentage of usage in this category. The construction industry is a large supporter of the 8(a) Program, a Small Business Administration-sponsored program for socially and economically disadvantaged small business owners, that teaches them

how to compete for, win, and perform government contracts. There are many 8(a) contractors in the construction industry, as well as in the food, services and electronics industries, the next three highest ranked industries.

In addition to the 8(a) Program, the authorized by statute exemption allows non-competitive contract awards to the Federal Prison Industries; non-profit agencies for the blind or severely disabled, such as the National Industries for the Blind, and the Ability One Program for the severely handicapped; awards to disabled-veteran-owned, small businesses; and awards to small businesses located in Department of Labor-designated hub zones. All industries have offerors who participate in these programs and the percentages in this category can be ascribed to the Department of Defense agencies' desire to support the programs.

The "other" category includes three exemptions that allow Contracting Officers to restrict competition in the name of national security and the public interest, and when an international agreement requires it. There is only a 1.9 percent range in this category across all industries. Only two categories (space and weapons) had over 1 percent usage, although three exemptions were pooled together in this category. It is not unreasonable to expect that the space and weapons industries would be the greatest users of exemptions such as national security and public interest.

Next, we will turn to the contract type variable to see if study data representing the percentage of contract type within each industry shed any light on Department of Defense management practices. Contract types are defined at the Federal Acquisition Regulation (FAR) Part 16. The determination concerning the type of contract that is appropriate for an individual action is made by the Contracting Officer, the person authorized to award a contract, to protect the government's interests and incentivize the contractor, and is a function of risk. We can consider risk as moving along a continuum. At the fixed price end of the spectrum the

government is able to define its need clearly and the contractor assumes the preponderance of cost and schedule risk. At the cost end of the spectrum the government cannot define required tasks clearly or identify historical workload data, and the government assumes the preponderance of cost and schedule risk.

A fixed-price contract is not adjusted on the basis of the contractor's actual cost experience in performing the contract. The contractor prepares his bid on the basis of anticipated contract costs plus profit. The contractor might make more profit or less profit as a result of his ability to control costs. Fixed price contracts are typically used if comprehensive workload data and a firm Performance Work Statement (PWS) can be provided to prospective offerors. This contract type places maximum risk and full responsibility for all costs and resulting profit or loss on the contractor. It provides maximum incentive for the contractor to control costs and perform effectively and imposes a minimum administrative burden upon the contracting parties.

Cost reimbursement contracts allow a contractor to be paid for his actual costs incurred, plus profit that is calculated from a predetermined methodology. They are often awarded in cases where there is inadequate workload data, no firm Performance Work Statement (PWS), or for a first-time effort where services have not been contracted for in the past. A cost contract may be adjusted as a result of changes in the work to be performed under the contract as long as work is within the scope of the contract or the additional work required is negotiated. Most cost reimbursement contracts must include a fee arrangement. In a cost-plus-fixed-fee arrangement the contractor receives his actual costs plus a fee that is fixed at time of award based upon estimated costs agreed to during negotiations. The fee cannot be adjusted based upon his actual costs because then he would have no incentive to control costs. There are also incentive fee arrangements that encourage contractors to exceed performance objectives and control costs in

order to receive more profit. Risk is higher for contractors in a fixed price contract than it is in a cost contract, where the government assumes a larger portion of risk. It is extremely difficult for the government to develop clear specifications for many requirements, especially in the service arena, a reality that increases contractor concerns about entering into fixed price contracts with the government in all but the clearest and simplest of requirements. It is easier to write clear specifications in some industries than it is in others.

Time and material and labor hour contracts are very similar to cost contracts and offer decreased risk to the contractor. FAR 16.601(b) states that a Contracting Officer can award a time and materials contract "when it is not possible at the time of placing the contract to estimate accurately the extent or duration of the work or to anticipate costs with any reasonable degree of confidence." Under this type of contract the government only pays for direct labor and the actual cost of materials. The labor rate is "loaded" or "burdened" meaning that elements of cost such as wages, overhead, general and administrative expense, and profit are included in the rate. Time-and material contracts are often referred to as "level of effort" contracts because there is no final product or deliverable associated with their use. In 2004 the Office of Federal Procurement Policy attempted to ban the use of time-and-material contracts for commercial items but Congress intervened with verbiage in the 2004 Defense Authorization Act that allowed the practice to continue. A labor hour contract is very similar to the time-and-materials contract with the exception that the government does not pay for material costs, and only pays for labor hours. Under time-and-materials and labor hour contracts there is little incentive for contractors to control their costs. Many people feel that time-and-material and labor hour contracts are overused and not managed appropriately, placing the government at a higher level of risk than is

acceptable. Since the risk to the government is high in this environment the FAR restricts the use of these contract types.

Table 5.14 provides a listing of the five contract type categories [General Services Administration (GSA), fixed price, cost, time and materials, and labor hour] by percentage of usage and industry. A sixth category, “Other”, was generated for the healthcare industry as the very small percentage of usage in all categories combined other than fixed price was extremely small.

Table 5.14 Percentage of Use of Contract Type by Industry

Contract Type	General Services Administration (GSA) Contract	Firm Fixed Price	Cost	Time and Materials	Labor Hour	Other
All Industries	10.1	80.8	6.5	2.3	.4	
Aircraft	1.3	95.0	2.2	1.5	.0	
Ships	2.1	88.8	6.6	2.5	.0	
Vehicles	3.6	95.2	0.9	.3	.0	
Weapons	2.6	89.7	6.3	1.3	.0	
Space	5.4	64.4	23.6	5.1	1.3	
Construction	1.7	95.0	2.0	1.1%	.2	
Electronics	28.5	64.6	4.4	2.3	.1	
Food	.2	99.8	.0	.0	.0	
Healthcare	.1	91.5	.0	.0	.0	8.5
Services	10.2	74.0	11.4	3.7	.8	

The General Services Administration (GSA) awards unfunded, priced, five-year contracts with three five-year options, for commercial goods and services. These contracts, known as “schedules,” are available for use by the entire federal government. The contracts are funded when individual orders are placed against the schedule by government agencies. The schedules are awarded as different contract types such as fixed price, cost, time and materials, etc. When an

agency awards an action against a schedule, however, the contract type is not always apparent. For this reason the DD350 database used in this study cannot distinguish contract types of GSA purchases and the database lists the contract type as a GSA contract.

It is often easier for a Department of Defense contracting officer to obligate dollars against a GSA schedule, as opposed to a stand alone contract, making it an attractive option for busy government contracting personnel. Purchases against GSA schedules are automatically characterized as competitive buys in the DD350 database as the schedules themselves are competitively awarded. Contracting personnel are encouraged and sometimes required to introduce further competition among schedule holders when making individual purchases.

The electronics industry has the largest percentage of purchases against GSA contracts, not surprising when one considers the vast number of commercial items that the Department of Defense purchases within the industry – computer hardware, software, and maintenance; telecommunication equipment; etc. The services industry also has a high usage of GSA contracts, consistent with a large offering of goods services within the industry that the Department of Defense procures – consulting, base operations, food services, facilities maintenance, etc. The space industry makes 5.4 percent of purchases in the GSA contract category. A fair number of commercial items are available within this category as the industry itself was described as having a large commercial sector. There may also be a reasonably high availability of GSA schedules for the types of purchases that are made within the highest ranked industries.

The next five highly ranked industries (weapons, vehicles, ships, construction, and aircraft) cluster together as many of the items purchased within these industries, with the exception of construction, would be non-commercial items that were developed for military use.

It is also possible that the commercial products and services that these industries do buy are not available on GSA schedule. Some characteristics of the construction industry might negatively impact their availability on GSA schedule including the difficulty of pricing a construction schedule due to varying Davis-Bacon labor rates at different locations, vast numbers of small businesses who would want to be on the schedules, and the FAR requirement to solicit some types of construction under sealed bid procedures.

Finally, the food and healthcare industries award virtually no contracts through GSA schedules. Although many commercial goods and services such as cooking equipment and utensils are associated with the types of purchases within the food industry that the Department of Defense makes, a very large proportion of those purchases involve perishable items needed to feed the troops. It is likely that these purchases for materiel associated with the industry are made on stand alone contracts issued by the Department of Defense agencies, and that the availability of schedules for these items is limited on GSA schedule, if they exist at all. Since the healthcare industry provides many commercial items and services to the military such as hospital equipment, medical supplies, equipment maintenance, etc. based on the lack of usage it is reasonable to assume that GSA schedules are either not widely available to provide these goods and services, or are not attractive vehicles to government Contracting Officers.

A look at Table 5.14 tells us that government contacting personnel exercise good management skills when they use a high percentage of fixed price contracts in most industries to keep the preponderance of risk on the contractor. The majority of industries award over 80 percent of their contracts as fixed price. The range within contract type categories is an indication of the risk represented within each industry and the discussion below may provide some insight into the differences in the way industries operate in the competitive environment.

Not surprisingly, the food industry has the highest number of fixed price contracts as a percentage of their total buys. The Department of Defense agencies are clearly able to define their need within this industry and articulate it to their industry providers, who can then provide reasonable price proposals to the government, supporting the use of fixed price contracts.

The next three highest ranked industries are vehicles, aircraft, and construction. Construction deals with many "knowns" compared to other industries, such as the size of the structure being built or maintained, the materials needed, the cost of materials, etc. so a result in the 95th percentile for fixed price usage is not surprising. As discussed earlier, with some exceptions construction contracts are required to be solicited under sealed bid procedures and the resulting contracts awarded as fixed price. Compared to the construction industry, the next two highly ranked industries face more "unknowns," but the high usage percentage of fixed price contracts has a reasonable basis. Although many of the goods purchased within the vehicle and aircraft industries represent developmental items for military use, such as tanks and fighter aircraft, once the item has been developed and the testing and production parameters are known, the follow on purchases can reasonably be made in the fixed price arena. For example, during the early days of an Air Force program to develop 500 fighter jets, numerous cost contracts might be awarded to develop concept ideas from industry, provide a prototype, execute first article testing, and perform a production run. If the first production run consists of 50 jets purchased with a cost contract, the information gleaned from the production of the first 50 jets will be used to hone the requirement, provide work load data, etc. so that the government can move the follow-on production runs for the next 450 fighter jets to a fixed price contract. At any given point in time within the vehicle and aircraft industry it is not unreasonable to assume that as a percentage of total buys, there are fewer developmental items purchased and far more follow-on items

purchased and this logic supports the high usage of fixed price in these industries. Spare parts used to repair and maintain aircraft and vehicles represent a very large part of Department of Defense buying in these industries, and facilitate the use of fixed price contracts.

The healthcare industry makes 91.5 percent of its purchases in the fixed price environment and 8.5 percent of purchases in an "other" category, which combines all of the different contract types under examination in this study.

The weapons and ship industries cluster together in the fixed price category. The same argument made in the aircraft industry to explain the high use of fixed price contracts can be made here – follow on production purchases can be made as fixed price contracts. Additionally, both of these industries were described as having robust second and third-tier vendor bases. Generally, when second and third-tier vendors provide follow-on support, they do so in a competitive environment in which the government owns the specifications and makes them available equally to all potential offerors.

The next highest ranked industry, services, awards 74.0 percent of its contracts in the fixed price contract category A logical explanation for the lower usage of fixed price is that it is often difficult to define requirements within the service arena. Often, the customer does not really know what he wants, or has no idea how to go about defining the need. Workload data are often inaccurate and is hard to project into the future considering the high operational tempo of the Department of Defense and the constant change facing the services. During the timeframe of this study, the Department of Defense has managed the Global War on Terror, the war in Iraq, rebasing of units from overseas locations to domestic locations, and a total Army restructuring. Budgetary pressures add to the uncertain environment as it is often very late into the

procurement process before customers have a good idea as to whether or not they can afford the services that they are trying to define.

The industries with the lowest percentage of fixed price contracts, electronics and space, each award 64.6 percent of their contracts using fixed price contracts. Their equality at the bottom of the fixed price category is somewhat deceiving, however. When combined with GSA schedule use, 93.1 percent of contracts awarded in the electronics industry are accounted for, versus only 69.8 percent of contracts in the space industry. As we will see shortly, the space industry utilizes far more cost contracts than the electronics industry, which creates a much different risk posture for the government within that industry than it does in the electronics industry.

To a large extent, the percentage of use of cost contracts is roughly opposite the use of fixed price contracts. Space and services, lowly ranked in the use of fixed price contracts, are ranked 1st and 2nd in the use of cost contracts. The same reasons provided above for the space and services industries' lack of use of fixed price contracts explains the use of cost contracts. Weapons and ships are the 3rd and 4th highest users of cost contracts which is consistent with their ranking of 6th and 7th in the fixed price category.

The electronics industry is ranked 5th in use of cost contracts, but was 9th in ranking on the use of fixed price contracts. When use of fixed price contracts is combined with the use of GSA contracts, over 93 percent of the electronics industry awards are in the non-cost contract arena, which is consistent with a ranking of 5th in the cost category.

The next three industries (aircraft, construction and vehicles) are ranked 6th, 7th and 8th in the cost contract category, which is compatible with the rankings of 2nd, 3rd and 4th in the use of fixed price contracts. The food and healthcare industry percentage of use of cost contracts is at

0.0 percent, which earns these industries the 9th and 10th rankings. Since the food industry awarded over 99 percent over its contracts using a fixed price contract type, there is less than 1 percent to share in all of the other contract types. In the healthcare industry, only 8.5 percent of all contract awards are available for non-fixed price contracts, earning it a low ranking in the cost contract category.

The space and services industry led the percentage of use of time-and-materials contracts, consistent with their high ranking in the cost contract category and low ranking in the fixed price category. These contracts are often used in high risk, developmental contracts, where the government is unsure what the end result of the contractor's efforts will be, or when it is unknown if a concept or task can be done at all – an environment that we can assume exists in the space industry, especially in the development of new technology in the military sector of the industry. The newspapers often report on buys surrounding technology such as the "Star Wars" missile defense system, or the unmanned drones that the military agencies hope to use in war and drug enforcement scenarios. Within the services industry, the government sometimes hires contractors to augment a particular function for a specific length of time to avoid having to bring on permanent government employees, and this is often accomplished under a time-and-materials contract. Additionally, the government's inability to define its need well in the service arena facilitates entry into the time-and-material category by default since it is much easy to buy a level of effort than it is to develop a requirement that will support a fixed price contract type – not a sound practice, but one that does occur.

Four industries are bunched together (ships, electronics, aircraft, and construction) followed by two more industries with a range of 1 percent (vehicles and weapons), and these percentages are compatible with the results that have already been discussed for these industries.

The food and healthcare industries are ranked lowest in the percentage of use of time-and-materials contracts and that is also consistent with their very high usage of fixed price contracts. The only usage of note in the labor hour contract category is within the space and services industries, and those percentages are very low and are consistent with the percentage of cost contract and time-and-materials contract usage within these industries.

Finally, we examine the data generated in the size of contract variable, which consist of three categories: $0-100K; $100-500K; and over $500K. Table 5.15 provides the usage of dollar categories across industries.

Table 5.15 Percentage of Use of Contract Size by Industry

Contract Size	$0-100K	$100K-500K	Over $500K
All Industries	75.3	17.6	7.2
Aircraft	69.5	20.3	10.2
Ships	81.0	14.9	4.1
Vehicles	71.5	20.7	7.9
Weapons	62.5	23.9	13.5
Space	60.0	23.9	16.1
Construction	71.9	19.8	8.3
Electronics	75.3	17.1	7.6
Food	80.0	14.4	5.6
Healthcare	89.3	9.6	1.1
Services	74.9	18.0	7.1

The $0-100K category has a high usage percentage of 89.3 percent in the healthcare industry and a low of 60 percent in the space category. The ships industry was the second highest ranked industry in the $0-100K category. Since very few actual ships are produced in any given year, the explanation for these results might be that parts, maintenance and repair work, and other low cost items required to maintain the national fleet represent the bulk of items purchased

in the Department of Defense. Although the media report frequently on multi-million and billion dollar procurements made by the Department of Defense, the reality remains that the majority of purchases in the department are found in this low dollar range.

In the $100-500K category, the space industry has the highest percentage of actions and the healthcare industry has the lowest. In the over $500K category, the highest percentage of high dollar purchases is in the space industry and the lowest is in the healthcare industry. In the contract size variable, each industry behaves exactly the same way, with the preponderance of actions in the 0-$100K category, the next highest percentage of actions in the $100K-500K category, and the lowest number of actions in the over $500K category.

The results by industry in the over $500K category are ranked in a nearly inverse relationship to the results in the $0-100K category, which makes a great deal of sense. If a high percentage of purchases within an industry are for low dollar amounts it stands to reason that there will not be a great deal of resources left over to support a high percentage of high dollar buys as well. The reverse is true for the industries with a low percentage of low dollar buys – there are more resources available to support a higher percentage of high dollar buys. Beyond the statements above, a visual examination of the rankings provides little illumination. Although the three highest ranked industries are manufacturing industries where single systems or products can cost in the hundreds of millions or billions of dollars, two of the lower ranked industries represent programs that cost in the millions (vehicles) or even billions (ships) of dollars as well.

Examination of the data provides support for the position that government employees spend a great deal of time and effort making management decisions that affect the quality of competition and impact the level of competition within industries. It is noteworthy that over the three years under examination, 80.8 percent of contracts were awarded as fixed price where the

level of risk that the government assumes is low. To be able to award fixed price contracts, the government must be able to define requirements sufficiently to ensure that offerors are willing to assume higher risk than that associated with other contract types, and the large percentage of fixed price contracts suggests that the government is able to do just that.

Other evidence of managerial ability by government employees includes the judicious use of statutory exemptions to competition used within the Department of Defense contracting environment. Study results show that 82.6 percent of all contracting actions under examination were awarded under conditions of full and open competition, an outcome desired by the Department and Congress. Considering the industry descriptions presented earlier in this study and the nature of the work that the Department of Defense performs, a 9.9 percent rate of use of the one source exemption does not appear unreasonable. At 5.1 percent usage across all industries and all years, the authorized by statute exemption is the second most highly used exemption to the Competition in Contracting Act. To a large extent, use of this exemption allows the Department of Defense to meet its goals to award a percentage of contracts to certain socio-economic target groups, a smart management decision.

Understanding the competitive environment surrounding privatization is important to the management agenda. It is important for managers to know whether or not contract type, contract size, and statutory exemptions are positively or negatively associated with competition, and whether or not they can expect competition within a specific industry.

First, government managers have to execute make or buy decision and to do so they need to know in which situations or industries they can expect the highest levels of competition. It takes skilled contract management to make appropriate decisions about the type of contract to award, whether to award a large or small contract, and when and under what conditions to limit

or restrict competition. Second, if you believe the economic argument for privatization, the government can maximize resources by fostering competition to reduce cost and create efficiencies. Third, managing within a competitive contracting environment requires government managers to put a structure in place to effectively manage the competition associated with contracting out, and provide adequate oversight and contract administration. Fourth, government managers must be aware of the competitive environment within their areas of cognizance to ensure that contracting employees have the requisite understanding and skill set to maximize competition on their individual contract actions. Knowing the variables that have the highest correlation with competition, and the industries that promote broad competition can only help government employees to make informed and reasoned decisions.

The findings in the analysis under the management framework are consistent with the tenets of Public Management theorists, who believe that privatization requires excellent government management (Rainey, 1997), and government administrators need to have specific skills in contracting, finance, communication, personnel, business, teaming/partnering, negotiation, quality assurance, market analysis and risk management to manage privatization, (Eggers, Kettl and Diulio, 1995; Kettl, 1993; Rehfuss, 1990; NAPA, 1989). Combined with the analysis under the economic framework, a picture emerges of a very complex environment surrounding privatization in the Department of Defense. In order to manage privatization effectively, government employees must understand how the competitive environment varies from industry to industry. They have considerable discretion to make management decisions about the appropriate contract type to use, contract size, and the need to compete an action under conditions of full and open competition or utilize a statutory exemption. The mention of the

discretionary aspect of contract management is a large concern under the legitimacy framework and provides a good segue into that discussion.

5.2.3. Legitimacy Framework

As the discussion thus far has shown, competition and privatization are topics that are fully integrated into the Public Administration literature. In that light, it is important to understand the implications of competition and privatization for the legitimacy argument. The legitimacy scholars believe that service delivery to the citizenry is the sole responsibility of the government regardless of the vehicle that is used for service provision, and worry that transferring service provision to reside in the private sector will allows the government to escape responsibility at the expense of the citizens (O'Connell, 1996; Moe, 1987; Gilmour and Jensen, 1998). Moe warns that a sovereign cannot remain sovereign if it assigns some of its attributes to a private party, as the government does when it gives the provision of products and services to the citizenry to a contractor, or agent (Moe, 1987).

Principal/agency theory is concerned with the difference in goals between the agent and the principal and the impact that difference has on the outcome of the contract and the development of failures such as information asymmetry, which results in adverse selection and moral hazard (Kettl, 2000). Moral hazard occurs because the principal cannot determine if the agent performs at the level he was paid to perform; if the agent understands this dynamic he has little incentive to exert too much energy towards performance. This concept is consistent with the management literature in Chapter 3 that discusses the failure of government personnel to adequately manage and oversee contracts. Adverse selection occurs because the principal may not be able to tell if the agent is actually capable of doing the job that he is needed to do

(Eisenhardt, 1989). Again, the literature discusses the government's inability to adequately and clearly define its requirements, making a thorough evaluation of an offeror's capability to perform vague requirements quite difficult. As stated earlier, the development of incentives and sanctions for the principal to use to control the agent's behavior, and identifying a specific output as a deliverable for the contract are normally recommended to remedy the failures. This response provides an answer that is common under the management lens.

In a similar argument, Lowery describes the markets that provide public goods as services as "quasi-markets" and defines three types of market failure -- failure in market formation, failure by preference error, and failure by preference substitution (Lowery, 1998). Failure in market formation is discussed under the economic framework. Failure by preference error occurs when citizens don't have enough information to make discerning choices that provide them with goods and services that they really want; have insufficient information to make reasonable selections from a wide array of choices; are manipulated by advertising or political infighting; or are impacted by externalities. Failure by preference substitution occurs when the two parties to the production process (those who make the decision to provide the goods and services, and those who consume the goods and services) do not agree on what they want or need, and one of the parties substitutes their preference for the other party's. Congressional interference in the food, healthcare, weapons, and shipbuilding industries has been noted in the literature review in Chapter 2 and is discussed under the political framework analysis that follows. Certainly externalities cause a large impact within many of the defense industries, although they are unmeasured in this study. When requirements are not well defined, or in research and development situations where there are many unknowns, it is quite feasible to think that one party could substitute their preference for another.

If theorists are correct and these conditions occur in the marketplace, what are the ramifications of market failures such as information asymmetry, moral hazard, adverse selection, failure by preference error and failure by substitution error, and of the principal/agent relationship itself? As discussed under the economic and political frameworks, there is some evidence in the data that competition is impacted when these conditions occur. But there are many other considerations when looking through the legitimacy lens. Which set of values is used to evaluate the privatization decision or define the success of the privatization effort -- responsibility and accountability of the government or the need for the efficient and effective production of good and services to meet the citizen's needs? Is it reasonable for the government to share responsibility and accountability with the contractor, or escape it altogether as some authors claim, in the name of cost savings? Should the government be more responsive to the citizenry or to Congress if the goals of the two groups conflict regarding service provision?

Privatization raises all of these questions and there are no definitive answers. The debate continues in the literature. Contracting personnel in the Department of Defense must evaluate these issues and exercise considerable discretion to balance the diverse values. The addition of the legitimacy framework to the discussion adds context to the story of Department of Defense contracting. Broad issues such as agency and responsibility, accountability, and discretion go to the heart of Public Administration. It is not just the academicians who are concerned with these issues and the way discretion is wielded in the executive branch, however. Politicians are very concerned with the contracting process and the arena in which it is executed. We will finish the tale by examining some data under the political framework.

5.2.4. Political Framework

It can reasonably be argued that one explanation for the lack of perfect competition within Department of Defense markets is that a critical condition needed to attain perfect competition, as described by Marshall, is not met – many markets in the Department of Defense environment are highly regulated. As outlined in the industry descriptions, restrictive labor laws in the construction industry, government subsidies in the healthcare industry, significant Congressional meddling in the shipbuilding industry, strict oversight requirements in the weapons industry, government policy impact on the food industry, and a high level of Congressional scrutiny in the services industry inhibit the market's ability to reach the desired state of perfect competition, or to maximize competition as advocated in the Federal Acquisition Regulation (FAR).

The literature review in Chapter 2 discussed characteristics of the ten industries that make up the larger defense industry. Congressional interest and impact were noted in a number of industries including aircraft, construction, healthcare, shipbuilding, weapons, food, services and space. An obvious example of possible self-interested behavior exists in the healthcare industry. Knowlton comments that healthcare is an important reelection issue and for that reason Congress has not acted to restrict high levels of federal spending on healthcare (Knowlton, 2005). Within the space industry, Congress passed legislation to prevent the transfer of technology, a reasonable but self-interested act, causing a market failure when foreign sales dropped (Beck, 2000). Fortuitously, the government continues to launch military and other satellites in support of the wars in Iraq and Afghanistan which might serve a dual purpose of shoring up the space industry. Congress has always taken an active interest in the shipping industry; they passed

cabotage legislation [12] to establish a merchant marine in order to meet the nation's sealift needs, maintain experience among seafarers, maintain the industrial base, and provide surge capability for defense when necessary. Like the example in the space industry above, cabotage legislation appears to provide many benefits to the nation even though it was passed to protect national self-interest. Continuing the discussion of the ship industry, since shipyards are so vast and employ so many people, members of Congress who have shipyards within their districts tend to be very protective of shipyard interests (Wood, et al, 2004), and by so doing enhance their chances of reelection.

Two industries examined in this study are impacted by labor laws that require minimum levels of wages. The Service Contract Act applies to all service contracts over $2500 and is applicable across all industries that write service contracts, with an especially large impact on the service industry. The Davis-Bacon Act applies to contracts over $2,000 within the construction industry. Public Choice theorists might claim that Congress is acting in its own self-interest by passing these labor laws, and thereby garnering the support of the labor vote. Two other industries in this study are impacted by favorable treatment from the government in the form of subsidies – the healthcare and food industries. The subsidy in the food industry represents self-interested behavior as the industry has consistently had a trade surplus and providing foodstuffs to foreign nations represents a large part of the national foreign aid strategy (Ascunce, 2005), both of which are desirable outcomes for the nation.

Much of the Congressional behavior discussed above takes the form of legislative action. Public Choice Theory describes numerous market failures caused by such actions. The public choice notion of logrolling, or the vote trading that occurs when one politician supports another

[12] Cabotage was defined earlier as the transport of goods between two ports or places located in the same country. Here, cabotage legislation describes the network of statutes and regulations that regulate sea transportation within the borders of the United States. The Jones Act is the most well-known cabotage legislation.

politician's program in order to get support for his own, may be involved in the process of passing laws that impact the defense industry as described above – cabotage laws, the Davis-Bacon and Service Contract Act labor laws, legislation to avoid technology transfer, etc. Even though it is possible that logrolling does occur, the results from this study show no evidence of an impact on competition that can be detected by the measurements used in this study.

Rent seeking occurs when one group gets special treatment at the expense of another group (Tullock and Buchanan, 1965), and represents another government failure that Public Choice Theorists believe causes economic inefficiency through decreased competition/monopoly, and increased prices as a result. The literature review in Chapter 3 described two types of rent seeking. Market privilege rent seeking exists when market privileges are taken away from some and given to others; redistribution rent seeking occurs when wealth is redistributed (Gunning, 1963). Many companies, and even whole industries, create lobbies to search for opportunities to receive rent seeking benefits – a practice that is very common within the defense industries. In addition, many companies and defense industry organizations contribute to political campaigns to curry favor with politicians who might be in a position to confer rent seeking benefits. In essence, through these actions companies and organizations seek to make money by manipulating the political system.

Three examples of market privilege rent seeking were mentioned in the literature review in Chapter 2 -- the government subsidizes farmers in the food industry (Akuetteh, 2004) and provides government-subsidized facilities within the healthcare industry (Knowlton, 2005). When the government subsidizes, or protects, certain industries through cash payouts, tax advantages, government contracts, etc. it interferes with the operation of the free market, thereby creating a market failure with the potential to diminish or cancel out the benefits of competition.

It is interesting to note that the aircraft industry has asked for market privilege rent seeking benefits from Congress to mitigate the negative impact of the European manufacturers on the domestic industry in the rotary wing sector, but this protection has not been forthcoming (Bellizan, 2004). We see, then, that Congressional largesse in the form of market privilege rent seeking benefits is selective. In the weapons industry, Congress grants market privilege rent seeking benefits by approving certain firms to manufacture small arms and not others. There are three such firms in the small arms sector that benefit from this rent seeking to the exclusion of all other manufacturers in the sector.

Table 5.16 Usage and Ranking of Level of Competition and Full and Open Competition within Industries Showing Indicators of Market Privilege Rent Seeking

Industry	Percentage of Offers Between 2-20	Ranking of Level of Competition within all 10 Industries (High to Low)	Percentage of Full and Open Competition	Ranking of Full and Open Competition within all 10 Industries (High to Low)
Food	84.9	1	89.5	2
Healthcare	79.9	2	99.3	1
Weapons	49.2	5	73.1	6

Table 5.16 shows the number of offers between 2 and 20, the percentage of full and open competition and the rankings of each in industries where market privilege rent seeking has been noted in this study. The two industries which were identified as receiving subsidies, healthcare and food, boast the highest level of competition and use of full and open competition procedures

within the defense industries, an unexpected finding when considering the tenets of Public Choice Theory. The vastness of the healthcare and food industries may mitigate the effects of the market privilege rent seeking discussed here. When including the weapons industry, the results shown in Table 5.16 indicate a range ranging from the highest ranked to fifth ranked industry by level of competition and an even wider range from the highest ranked to the sixth ranked industry by the percentage of full and open competition. The results are inconclusive and show little evidence of a negative impact to competition due to market privilege rent seeking.

Redistribution rent seeking in the defense industries is exemplified by the preference given to certain socio-economic or otherwise disadvantaged groups for non-competitive government contract awards. Exemption five to the Competition in Contracting Act, "Authorized by Statute," at the Federal Acquisition Regulation at 6.302-5 allows contracting officers to award contracts non-competitively within the prescriptions of statute to the Federal Prison Industries (UNICOR), Qualified Nonprofit Agencies for the Blind or other Severely Disabled, Government Printing and Binding, small and disadvantaged businesses under the 8(a) Program, small businesses located in historically underutilized business zones (HUBZones) in accordance with the HUBZone Act of 1997, and small and/or small and disadvantaged, veteran-owned businesses in accordance with the Veterans Benefits Act of 2003. The percentage of usage of the Authorized by Statute exemption by industry is shown in Table 5.17 and provides a good measure of at least some of the redistribution rent seeking that exists within the Department of Defense industries

Table 5.17 shows that the percentage of use of the authorized by statute exemption varies by industry from a low of 0 percent in the healthcare industry to a high of 13.5 percent in the construction industry. There does not appear to be any logical connection between the percentage

of use of the exemption and the percentage of offers between 2 and 20, which represent the level of competition. There also does not appear to be any relationship between the percentage of use of the exemption and the size of the industry, mimicking results reported elsewhere in this study that find the impact of size of industry on competition to be minimal. While Table 5.17 provides some useful information, it is not a comprehensive measure of redistribution rent seeking in the defense industries. It is probable that other kinds of redistribution rent seeking occur as well.

Table 5.17 Percentage of Use of the Authorized by Statute Exemption, Level of Competition, Ranking by Industry, and Size of Industry

Industry	Percentage of Use of Authorized by Statute Exemption	Percentage of Offers Between 2-20	Ranking of Level of Competition within all 10 Industries (High to Low)	Size of Industry
Aircraft	1.1	45.2	7	S
Ships	2.2	43.5	8	S
Vehicles	1.9	65.6	3	S
Weapons	3.3	49.2	5	S
Space	.5	37.7	10	M
Construction	13.6	66.1	4	L
Electronics	3.4	42.6	9	L
Food	9.8	84.9	1	L
Healthcare	.0	79.9	2	L
Services	5.2	51.2	6	L

The learning point from this examination of rent seeking is that the assumption of a free, unregulated market held by microeconomic theory does not appear valid within the defense industries. The manipulations that occur under rent seeking interfere with the free operation of the marketplace and impact competition to some degree, as shown by the findings related to the authorized by statute exemption under the statutory exemption variable. The data show that the

impact to competition varies by industry, although it was not comprehensively measured by this study.

A related concept, regulatory capture, also represents government failure according to Public Choice theorists. The concept has many similarities to the self-interested and rent seeking behavior already described. Capture describes a condition where the players in the political process use their influence to obtain statutes and regulations that will benefit themselves (Stigler, 1971). Participants in the capture process often expend significant energy and resources to achieve their ends, taking part in such activities as lobbying, and contributing to political races. Examples of the benefits produced, in the form of subsidies, protective tariffs, etc. have already been described. There is no reason to think that capture does not exist in most or all of the defense industries. It can be expected that the data from this study would produce similar results as those shown in the analysis of rent seeking – the level of competition and percentage of use of full and open competition would vary by industry. The influence of capture on those measures remains unknown.

Free riding is the final government failure examined here that is described in Public Choice Theory. Free riding exists when people or organizations receive a benefit from something that they did not pay for, or otherwise earn. The classic example of free riding is national defense. Since national defense is comprehensive and non-exclusionary, even those who did not contribute to the national defense by paying taxes or serving in the military receive the benefit. The literature review in Chapter 2 did not describe specific examples of free riding within the defense industries. Alexander Volokh has introduced an interesting concept about free riding and privatization in his writings. He believes that within the context of privatization, private sector organizations can free ride when government agencies provide the majority of goods and

services within an industry or sector and lobby for legislation that not only benefits itself, but also private sector participants – the flip side of regulatory capture, if you will. Under this scenario, government itself spends energy and resources trying to get other government entities to act at its behest (Volokh, 2008). Using Volokh's interpretation of free riding, we can see that there may be many opportunities for free riding within the defense industries, although specific examples are not documented in this study and no analysis of the data by industry is performed.

The discussion under the political framework adds another layer to the fabric of Department of Defense contracting. While many of the concepts discussed here could have been discussed in another framework, especially the economic framework, the political lens allows the reader to understand just how complex the Department of Defense contracting environment really is. This chapter provides a wealth of information on competition and privatization. First, the amount of competition attained in the Department of Defense from 2002-2004 appears very reasonable considering the mission of the organization and the many demands placed on the department by the Global War on Terror, and wars in Iraq and Afghanistan. Second, the discussion shows that contracting personnel in the Department of Defense need to have a high level of skill to operate and succeed in this very complex environment, and that they are often faced with many important decisions that have been shown to impact the level of competition. Finally, much of the information in this chapter leads to conclusions and recommendations for further study, the topic that is discussed next.

CHAPTER 6

CONCLUSION

This study is undertaken to focus on competition, a critical element of privatization, to better understand how the availability of competition impacts the decision to privatize, and how management skills support the privatization decision and lead to more successful privatization outcomes. Competition is examined across ten industries that comprise the Department of Defense marketplace to see if a contingency such as the industry, choice of contract type, use of statutory exemptions to the Competition in Contracting Act, or size of the contract impacts the way competition behaves in the marketplace. The analysis uses four frameworks (economic, management, legitimacy, political) to examine and discuss the research issues. The concluding chapter examines the research agenda surrounding privatization in Public Administration. The discussion includes the strengths of the study and its contributions to the body of literature from a strategic and operational view, and the limitations of the study and implications for further research.

6.1 Privatization and the Research Agenda in Public Administration

Before the research agenda for privatization can be determined, it is critical to define the values and underlying rationale of research in Public Administration. Peters claims that Public Administration is divided among academics and practitioners as to whether the world of practice

or the world of theory should provide the rationale for understanding the discipline of Public Administration (Peters and Rockman, 1996). Some scholars believe that the development of pure theory for theory's sake is a valid approach (Bozeman, 1993), while others believe that theory should have some ability to explain how public managers need to manage as its main focus and that the goal of theory in public management is to help public managers use a framework to achieve their goals (Lynn, 1993). Still others believe that there is a middle ground, a position of balance -- Public Administration is an applied science; theory needs some applicability but must remain methodologically based (Rainey, 1993; Perry, 1993). While application must be a goal of theory, this study calls attention to the need for empirical testing to move the literature forward and move the field closer to a comprehensive theory of privatization. Each of the four frameworks used in the study has made contributions to this effort as the following discussion describes.

The study discusses topics that are central to the frameworks used in this study and to the discipline of mainstream Public Administration itself. The value of privatization as a topic of discussion for Public Administration may be its very breadth and depth. The fact that privatization touches disciplines such as economics, political science, organization theory, etc. intimates that it is comprehensive enough to provide lessons learned that are generalizable and as such have value in the theory-building realm. The study has shown that despite a 30 year trend of increased privatization, there is still no systematic understanding of the consequences that the use of contracting out have for the operation of government, a position that finds support elsewhere (Gill and Rainey, 1997).

This train of thought raises the issue of the research agenda in privatization literature, which is multi-faceted. Privatization initiatives provide researchers a virtual laboratory and

afford an opportunity to answer many questions and synthesize much existing theory – another of privatization's many contributions to the discipline of Public Administration at large. Researchers working in the privatization arena have access to a growing library of data that can be analyzed quantitatively and should provide answers about cost, level of competition, and timeliness, at a minimum, and provide an empirical basis for further discussion. It would be useful to define common metrics that have a wide application in the contracting environment, to measure variables like efficiency and facilitate comparisons among research efforts that span the wide range of privatization research efforts discussed in this study. In addition to quantitative analysis, privatization supports qualitative analysis like case studies, surveys and questionnaires. The descriptive data developed in this study provide much of the basis for analysis in Chapter 5. Bozeman and Rainey examine the limitations of the existing methodology used in the field, questions of representativeness and generalizability of existing research, and issues of internal validity, and take encouragement from research efforts that undergo and survive peer review, and converge with other research efforts across the social sciences (Rainey and Bozeman, 2000). Although Behn considers it problematic that these methodologies are not usually considered conclusive, and that true experimental conditions are almost impossible to replicate within this area of research, he believes that case analysis provides a description of the various contingencies that interact with an action to produce the desired results and offer a methodological alternative within the constantly changing managerial environment, and as such have value in the analysis of topics like privatization (Behn, 1993).

Finally, one of the most insightful questions that we might ask about privatization is how it might help bridge the gaps in theory. Are there any places in particular that it might help to integrate some of the theory? Privatization offers such an opportunity to astute researchers and

scholars. A future theory of privatization must integrate economic concepts such as competition and efficiency, management issues such as planning and contract administration, legitimacy issues such as responsibility and accountability, and political efficacy to help describe contingencies when contracting out is appropriate and has a high chance of success. Emerging Public Management theory provides a substantial opportunity for synthesis with privatization theory, as effective public management is key to the success of privatization efforts. An overarching privatization theory must be consistent with democratic theory and existing political and administrative institutions must be analyzed for compatibility with the privatization approach to the production of public goods and services. Such a privatization theory is not probable at any time in the foreseeable future – the broad application of the privatization movement provides almost unlimited contingencies to explain its success or lack thereof, based on the implementation of privatization in literally thousands of diverse governments across the country; and the current state of privatization theory in Public Administration today. While a privatization theory is not imminent, current research and theory in the privatization arena has tremendous value for both the academician and the practitioner. While theory is not at the point where it can explain or predict behavior in relation to privatization, as has been pointed out throughout this study and in the privatization literature, many pieces of the puzzle have been clarified and promising areas have been identified for further study.

6.2. Contributions to the Literature

As described in Chapter 3, the literature surrounding privatization is vast and establishes many research issues. Public Choice Theory and Transaction Cost Theory develop many concepts and raise a host of questions, many of which are critical to the privatization dialogue.

For example, Transaction Cost Theory examines the privatization decision itself and recommends that transaction costs be considered in the privatization decision as well as potential cost savings. Competition is a key concern throughout the privatization discussion and this study builds upon the existing literature and provides data concerning the level of competition in sthe Department of Defense, the largest buying activity in the world. In addition to establishing the amount of competition that existed in Department of Defense contracting from 2002-2004, the study examines the way competition behaves in relation to numerous contingencies and within contexts such as political action and management decisions.

First, the study establishes that competition varies by industry, and that contract type, statutory exemptions, and contract size are related to the level of competition as measured by number of offers. The results of the data analysis are sufficient to reject the null hypothesis for Hypothesis 1 and Hypothesis 2.

Second, the random sample of Department of Defense contract actions from 2002-2004 used in the study is very large (N = 93,074). Most of the existing literature concentrates on state and municipal contract actions which usually include a limited number of services industry and construction industry contract actions, including the Savas and Hodge studies discussed in Chapter 5. This study broadens the scope of analysis and includes industries that represent most if not all of the U.S. economy, and that have not been widely examined before. The resultant vantage point provides an opportunity to see how competition behaves in the different environments that exist in the defense industries.

Third, there is little existing research that focuses on variables other than cost savings, which are not usually computed under a standardized methodology, and quality of performance, which is subjective and hard to measure, and is also not studied under a standardized approach.

The independent variables used in this study that are related to the dependent variable are easy to define and measure and can be used to facilitate comparisons across research efforts.

Fourth, in addition to the results of the data analysis, the study generates a large number of descriptive statistics that provide useful information about contracting in the Department of Defense and provide the basis to analyze many concepts in existing literature that did not lend themselves to empirical testing for purposes of this study. For example, the study establishes that there is a high average rate of full and open competition (82.6 percent) across all industries in the Department of Defense. In addition, some of the statutory exemptions that are used to limit or restrict competition are used to implement social policy, serve the public interest, or in the name of national security. The study also determines that competition can be controlled and manipulated. Political activities such as log rolling, rent seeking and legislative activity, and management activities such as the decision to use a specific contract type or statutory exemption to competition impact the level of competition available for a specific contract action. This type of knowledge greatly increases our understanding of the competitive environment in the Department of Defense and adds to the ability to accurately analyze the literature surrounding privatization and apply it to Department of Defense privatization efforts.

Finally, the four frameworks used in this study support a more comprehensive examination and in-depth understanding of the material than a single framework would provide. The economic framework facilitated the examination of many concepts in Chapter 5, including specific government and market failures such as information asymmetry and asset specificity, transaction costs, failure in market formation, and an examination of some existing studies. Study results provide some support for these concepts. The literature review described many examples of conditions within individual industries that would cause transaction costs, and there

is some evidence in the data that industries with assumed high transaction costs had less full and open competition than industries with assumed low transaction costs. Additionally, the analysis of failure in market formation shows some support for the argument that defense industries with some evidence of failure in market formation appear to have lower rates of competition than industries where failure in market formation is not documented.

Although the economic framework is very valuable, there are difficulties associated with using it as the only lens to examine privatization. The assumption of the market-based approach to privatization that competition supplants the role of management -- if competition is available it will take only a small amount of oversight to adequately manage the resultant contract -- is problematic. This assumption is fairly simplistic and naïve and fails to address the need for strong management of the entire privatization effort. Using the management framework facilitates the ability to look at management decisions surrounding privatization including what type and size of contract to use, or whether or not to use statutory exemptions to limit or restrict competition, and to discuss concepts from existing literature. One such concept relates to organizational structure. A management implication of the analysis in Chapter 5 is that the traditional Public Administration structure (bureaucracy) might not be well suited for the management oversight of privatization required by the Public Management approach, a concept that has tremendous implications for the field at large. Unlike the generic management theorists, Moe believes that the concept of measuring managerial accountability to the citizen/customer based on performance results is a bad one and that the traditional structure is the best one to manage privatization (Moe, 1994). In order to facilitate strong management of the contracting function in a complex, contracted, external environment, a bureaucratic structure is necessary that is legitimized through traditional hierarchical channels, but is afforded sufficient discretion

through legislative and executive forbearance to maneuver in this complex environment and cooperate with the private sector partners who comprise the production networks for public goods and services. A valid reason for accepting the traditional structure is because that is what Public Administration theory can support at the present time – it is where we are (Kettl, 1994). As theory continues to develop, other structural possibilities may present themselves -- as Elinor Ostrom argues, there can be numerous institutional arrangements for a given contingency (Ostrom, Elinor, 1990).

The failure or inability to manage contracts, the lack of evaluation of privatization efforts, and the ineffective measurement of performance and savings have major cost and efficiency implications. It appears as if the reality of privatization implementation has outpaced this ability to provide managerial theory to support it, and this eventuality raises many concerns about accountability and responsibility. The legitimacy framework is used to examine those issues in the study and examines the concepts of agency theory, failure by preference error and failure by preference substitution. Again, there is some support in the data to show that these concepts occur within the Department of Defense contracting environment.

In an examination of issues like legitimacy and authority, the argument needs to be made that privatization has limits. In addition to the managerial/contingency constraints described earlier, privatization is subject to constraint as a matter of law, including advisory and assistant services of a managerial or decision-making nature that are the direct responsibility of agency officials, inherently governmental functions, and sovereign activities (Moe, 1996; Gilmour and Jensen, 1998; Sullivan, 1987). In a related argument, the traditional Public Administration scholars show concern for certain constitutional issues regarding the delegation of authority to private parties under a contracting arrangement based on differing legal positions of government

administrators and private parties. Gilmour and Jensen argue that while the rights of citizens are protected by the Constitution and public law in relation to actions performed by government administrators, the protection may disappear and rights may erode in relation to actions performed by private sector contractors who are subject to different rules that are often far less protective of the citizenry (Gilmour and Jensen, 1998). Continuing the argument even further, Sullivan contends that privatization immunizes both the government and private contractors from constitutional restraints (Sullivan, 1987).

Legitimacy represents a core value in Public Administration. In light of the centrality of competition in many topical issues in Public Administration, it is important to understand the place of competition in the legitimacy argument. First, government employees need to understand the availability of competition, the context of competition, and the costs and benefits associated with competition to assure they are all considered when making decisions about how to provide products and services to the citizenry. The study provided substantial information in these areas. Second, contracting officials use substantial discretion when making decisions about specific contracts. It is helpful to know what contract type is associated with the highest level of competition, or what industry has the highest level of competition to ensure that discretion is used in the most effective way possible – all information that the study provides. Third, contracting transfers responsibility and accountability from the government to the contractor. Government employees must ensure that a robust, competitive environment is present to ensure the availability of contractors who can perform responsibly at a high quality level and a reasonable cost.

What conclusions can be drawn from the examination of accountability and responsibility in relation to privatization initiatives under the legitimacy framework? It is clear that these

issues exist and that they require serious consideration when making the privatization decision. They underscore the need for effective and adequate management of privatization efforts and an institutional arrangement that provides a vehicle to locate accountability and responsibility at the level necessary to protect the rights of the citizens, the government and the private sector participant.

The economic, management, and legitimacy frameworks all bring a different perspective to the study. The political framework provides a very important lens to use to scrutinize privatization. Shleifer and Vishny discuss the concept of the helping hand model of government as what a welfare-maximizing government does in response to alleged market failures, and reject it as a false model that does not serve the public good. Instead, the authors focus on politics as the determinant of governmental decisions about privatization and develop a model that explains successful privatization in terms of control of political discretion (Shleifer and Vishny, 1998).

While there are numerous other examples in the privatization literature that document the ramifications of political action on the privatization decision, this discussion demonstrates that public administrators must not ignore politics at the time of the privatization decision or they may find, to their detriment, that they have selected a production option for public goods and services that is doomed to failure based on one or more political realities.

One such political reality is that competition is very important to the political argument and must be understood in the political context in addition to the context of the other three frameworks. Within the political framework, the study looked at number of offers across industries for all actions, and the Public Choice Theory concepts of logrolling, rent seeking, regulatory capture, and free riding. Descriptive data from this study show a likely impact on competition in industries with assumed incidences of these political activities.

Politicians advocate competition in order to maintain or increase the level of service provided and control cost as a function of keeping constituents happy, be good stewards of public funds, and get reelected. As politicians exhibit an increased awareness of the shortcomings of privatization they understand that there may be consequences if competition is not present, and costs rise and quality falls as a result. Politicians have to be increasingly savvy about the many contexts of competition and balance the political costs and benefits associated with competition or the lack of it. Congressional intent regarding competition is very clear as stated in the Competition in Contracting Act (CICA) – contracting personnel shall maximize competition to the greatest extent possible. For that reason it is important to know what variables are either positively or negatively associated with competition, and which industries provide the highest level of competition. While CICA intends to increase the level of competition it is important to note that specific legislation can impact the level of competition positively or negatively. The literature review in Chapter 2 discusses Congressional action such as tariffs, labor legislation, subsidies, and export restrictions, all of which can reasonably be expected to impact competition in some way. Finally, competition is a transparency and allocation of resources issue. Politicians who support competition will often be perceived as fair, while those who do not support competition may be perceived as playing favorites or of being unfair – an issue of political expediency.

6.3 Study Limitations and Recommendations for Further Research

While the study provided much valuable information, it tested a limited number of issues concerning privatization. Although the privatization decision involves some critical issues, the study raised many questions and answered a few. Within the management framework alone, such

questions include: What are the implications for training related to this need for new or updated skills? What are the costs associated with the training? How can the training be resourced economically and what do the training (transaction) costs mean to the cost-effectiveness of contracting as a viable approach? What are the ramifications to the successful management of privatization if government managers do not have the skills identified above? Are these skills different from those needed by private managers involved with privatization?

If training time and dollars are unavailable, government managers are left with some tough decisions: Should they divert resources from other uses to provide training for their managers in support of privatization? If resources are diverted, what are the opportunity costs of diversion and how do they impact the overall viability of contracting as an option? Will the failure to invest short-term resources to support privatization prove sufficient to undermine long-term returns from the process (Kettl, 1994)? Finally, broadening the argument, what are the ramifications for education in public policy and public administration programs?

Another interesting issue that is not discussed very much in the literature is a logical follow-on from the issues discussed in the management perspective – what are the contingencies under which a privatized good or service should be brought back for government production? If the decision to privatize was a poor one are there remedies available and under what contingencies can they be implemented? These issues will be raised in the research literature eventually as governments struggle with problematic contract vehicles and sub-standard performance under contract arrangements that were made under conditions that were not favorable to privatization in the first place, such as non-competitive contract awards. Further research is needed on the contingencies required for successful privatization, the skills required for public administrators to manage privatization, and the lessons learned available from the

results of on-going privatization efforts. Like the management framework, the other three frameworks used in the study generate questions that point the way towards further research.

The study timeframe may impact the ability to generalize the results over time. During the period 2002-2004, the nation was led by a Republican President and a Republican Congress who fully supported privatization initiatives and the use of full and open competition to the greatest extent possible. While the study timeframe controls for some significant on-going issues within the Department of Defense such as the Global War on Terror, war in Iraq and Afghanistan, rebasing of American troops stationed in Europe to bases in the United States, and the political administration, it is unclear if the results of the study would be replicable under a mixed or Democratic administration who did not support privatization to the extent that support existed in 2002-2004.

In relation to the ability to generalize the results of this study, it would be helpful to know if state and local levels of government go to the same lengths as the federal government to ensure that a condition of full and open competition is achieved in privatization efforts. While it is expected that different levels of government use the same contract types as those tested in this study, it is unknown if state and local governments subscribe to the use of the Competition in Contracting Act and the exemptions to that Act. If they do not, the predictive value of the variable has little value for state and local government. These are areas future research should address.

In conclusion, privatization changes the nature of government itself (Chi, 1993; Rainey, 1997; Moe, 1996 and1997; NAPA, 1989; Salamon, 1981; Mosher, 1980). In the search for efficiency, effectiveness cannot be forgotten. It is necessary to have a high level of competition not just to drive down cost and improve efficiency, but to serve the public interest by improving

the odds of awarding a contract to a provider who offers a reasonable cost, performs at a high level of quality, and is responsible and accountable to the goals set by the Department of Defense as the agent for our elected officials. It is clear from results of the study that competition can be controlled and manipulated. Public servants need to be aware of the competitive environment to ensure that the public interest is protected.

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APPENDIX A

GLOSSARY OF CONTRACTING TERMS

COMPETITION IN CONTRACTING ACT

The Competition in Contracting Act of 1984 (CICA), 41 U.S.C. 253, revised the FAR to encourage competition for the award of all types of government contracts. The purpose was to increase the number of competitors and to increase savings through lower, more competitive pricing. The elements of CICA are embodied in Part 6 of the FAR and apply to all solicitations for bids issued after April 1, 1985. The policy of the Act is that: Contracting Officers shall provide for full and open competition through use of the competitive procedure or combination of competitive procedures contained in this subpart that is best suited to the circumstances of the contract action. (FAR 6.101).The competitive procedures are "sealed bidding" (formerly termed "formal advertising") and "competitive proposals" (formerly termed "negotiating"). CICA requires that for all contract actions expected to exceed $25,000.00, the contracting agency must publish (synopsize) the proposed contracts in the Commerce Business Daily (CBD). Currently, these notices must be published at least fifteen (15) days before the issuance of a solicitation for bids. The agencies are also required to allow at least thirty (30) days response time between issuing the solicitation and receiving bids (sealed bidding) or proposals (competitive proposals) (FAR 5.203). The intent of the Act is to increase the number of bidders or proposers competing for government contracts by publicizing contracting opportunities.

CONTRACT

A “contract” means a mutually binding legal relationship obligating the seller to furnish the supplies or services (including construction) and the buyer to pay for them. It includes all types of commitments that obligate the Government to an expenditure of appropriated funds and that, except as otherwise authorized, are in writing. In addition to bilateral instruments, contracts include (but are not limited to) awards and notices of awards; job orders or task letters issued under basic ordering agreements; letter contracts; orders, such as purchase orders, under which the contract becomes effective by written acceptance or performance; and bilateral contract modifications.

CONTRACT ADMINISTRATION OFFICE:

A “contract administration office” means an office that performs--

(1) Assigned postaward functions related to the administration of contracts and
(2) Assigned preaward functions.

CONTRACT CLAUSE

A “contract clause” or “clause” means a term or condition used in contracts or in both solicitations and contracts, and applying after contract award or both before and after award.

CONTRACT MODIFICATION

A “contract modification” means any written change in the terms of a contract.

CONTRACTING

“Contracting” means purchasing, renting, leasing, or otherwise obtaining supplies or services from nonfederal sources. Contracting includes description (but not determination) of supplies and services required, selection and solicitation of sources, preparation and award of contracts, and all phases of contract administration. It does not include making grants or cooperative agreements.

CONTRACTING ACTIVITY

“Contracting activity” means an element of an agency designated by the agency head and delegated broad authority regarding acquisition functions.

CONTRACTING OFFICE

“Contracting office” means an office that awards or executes a contract for supplies or services and performs postaward functions not assigned to a contract administration office.

CONTRACTING OFFICER

“Contracting officer” means a person with the authority to enter into, administer, and/or terminate contracts and make related determinations and findings. The term includes certain authorized representatives of the contracting officer acting within the limits of their authority as delegated by the contracting officer. “Administrative contracting officer (ACO)’’ refers to a contracting officer who is administering contracts.

COST-REIMBURSEMENT CONTRACT

Cost-reimbursement types of contracts provide for payment of allowable incurred costs, to the extent prescribed in the contract. These contracts establish an estimate of total cost for the purpose of obligating funds and establishing a ceiling that the contractor may not exceed (except at its own risk) without the approval of the contracting officer. 16.301-2 -- Application. Cost-reimbursement contracts are suitable for use only when uncertainties involved in contract performance do not permit costs to be estimated with sufficient accuracy to use any type of fixed-price contract.

COST CONTRACT

A cost contract is a cost-reimbursement contract in which the contractor receives no fee.

FEDERAL ACQUISITION REGULATION (FAR)

The Federal Acquisition Regulation (FAR) is the principal set of rules in the Federal Acquisition Regulations System. That system consists of sets of regulations issued by agencies of the Federal Government of the United States to govern what is called the "acquisition process," which is the process through which the government purchases ("acquires") goods and services. That process consists of three phases: (1) need recognition and acquisition planning, (2) contract formation, and (3) contract administration. The FAR System regulates the activities of government personnel in carrying out that process. It does not regulate the purchasing activities of private sector firms, except to the extent that parts of it are incorporated into government solicitations and contracts by reference.

FIRM-FIXED PRICE CONTRACT

A firm-fixed-price contract provides for a price that is not subject to any adjustment on the basis of the contractor's cost experience in performing the contract. This contract type places upon the contractor maximum risk and full responsibility for all costs and resulting profit or loss. It provides maximum incentive for the contractor to control costs and perform effectively and imposes a minimum administrative burden upon the contracting parties. A single contracting officer may be responsible for duties in any or all of these areas. Reference in this regulation (48 CFR Chapter 1) to administrative contracting officer or termination contracting officer does not--

(1) Require that a duty be performed at a particular office or activity or

(2) Restrict in any way a contracting officer in the performance of any duty properly assigned.

GENERAL SERVICES ADMINISTRATION (GSA) SCHEDULE

A GSA schedule is an unfunded, five-year contract listing the prices the federal government has agreed to pay for a vendor's commercial products and services. The contract may be renewed for three five-year periods resulting in a 20-year contract if all renewals are executed. A GSA schedule contract is an official federal contract but it is not funded and it does not have products or services to deliver immediately. Funding occurs when an order is signed by a federal agency. There are 62 categories of commercial products and services that vendors may apply for a GSA contract under. Known as schedules, these categories cover everything from industrial products, vehicles, computers and office products, to most categories of professional services.

LABOR HOUR CONTRACT

A labor-hour contract is a variation of the time-and-materials contract, differing only in that materials are not supplied by the contractor.

OFFER

"Offer" means a response to a solicitation that, if accepted, would bind the offeror to perform the resultant contract. Responses to invitations for bids (sealed bidding) are offers called "bids" or "sealed bids"; responses to requests for proposals (negotiation) are offers called "proposals"; however, responses to requests for quotations (simplified acquisition) are "quotations," not offers.

OFFEROR

“Offeror” means offeror or bidder.

SOLE SOURCE ACQUISITION

“Sole source acquisition” means a contract for the purchase of supplies or services that is entered into or proposed to be entered into by an agency after soliciting and negotiating with only one source.

SOLICITATION
“Solicitation” means any request to submit offers or quotations to the Government. Solicitations under sealed bid procedures are called “invitations for bids.” Solicitations under negotiated procedures are called “requests for proposals.” Solicitations under simplified acquisition procedures may require submission of either a quotation or an offer.

TIME AND MATERIALS CONTRACT

A time-and-materials contract provides for acquiring supplies or services on the basis of—(1) Direct labor hours at specified fixed hourly rates that include wages, overhead, general and administrative expenses, and profit; and

(2) Actual cost for materials