

CORPORATE SECURITY AND CONFLICT OUTCOMES

A Dissertation

by

BENJAMIN K TKACH

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Chair of Committee,	Quan Li,
Co-Chair of Committee,	Ahmar Tarar
Committee Members,	David Boyle
	Michael Koch
Head of Department,	Robert Harmel

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## ABSTRACT

This dissertation investigates the effects of private security firms (PSFs) on conflict outcomes. PSFs are corporations that are publicly or individually owned that provide security services for hire. Security services include, but are not limited to, logistics, technology development, and combat support. Since the 1950s, and particularly since the 1990s, PSFs have become increasingly present in global conflicts. The theory proposed in this dissertation begins by adopting the framework of the state as a firm that trades services for rents. I propose that PSFs' influence conflict based on corporate structure, competition and transparency. The empirical analysis examines PSF operations in the U.S.-Iraq conflict. Insurgent attacks and civilian casualties capture the level of violence and are used as proxy measures of law and order. Expanding the role of non-state actors in conflict by identifying and incorporating economic determinants of PSFs' involvement provides several avenues for future investigation.

## DEDICATION

To my incredible wife and family whose love and support made this possible.

## ACKNOWLEDGEMENTS

I was told by a wise friend that finishing a PhD program is about persistence. There is little doubt that his piece of advice is true. However, I found that finishing the program required an extensive support network. I want to extend my gratitude to many whose support contributed to my scholarly development. Though I am not able to adequately express my full appreciation to each person that has assisted in this process, I wanted to acknowledge a few individuals.

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## CHAPTER I

### PRIVATE SECURITY FIRMS IN IRAQ: AN INTRODUCTION

How has privatization of security influenced conflict outcomes? Throughout much of the 19<sup>th</sup> and 20<sup>th</sup> centuries, national governments centralized coercive capacity within state militaries (Avant 2000). Existing research has shown a steady increase in the number and employment of private security firms (PSFs) over the last five decades due to expansion of global market demand for private security (Avant 2005; Dunigan 2011; Singer 2003).<sup>1</sup> Rapid market expansion during the 1990s resulted in no less than two hundred different instances of private security firms (PSFs) conducting operations between 1995 and 2004 (Avant 2005). Despite the increased rate of PSF employment following the end of the Cold War, little systematic research has been conducted.<sup>2</sup>

The key issue is whether the privatization of security has fundamentally changed how actors in the international system seek security. PSFs represent a transition in the provision of services and personnel as states, non-governmental organizations and international organizations utilize PSF services. The privatization of security influences the interdependence between state security policies, while simultaneously introducing additional actors that provide that security. Privatization has afforded opportunities for

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<sup>1</sup> One potential starting point for modern PSFs was 1967 when Colonel David Stirling formed the company WatchGaurd International to train forces for Persian Gulf states. The United States first privatized the training of foreign defense forces in 1975 when it awarded Virginia-based Vinnell Corp a \$77 million contract to train the Saudi Arabian National Guard. However, by some accounts, U.S. employment of PSFs for logistical support dates to U.S. operations in Korea. In 1951 DynCorp's international predecessor, Land-Air, Inc., was award the Contract Field Team (CFT) contract to provide skilled aircraft technicians to provide maintenance support for Air Force locations (Isenberg 2009). DynCorp has maintained the Contract Field Team (CFT) contract continuously since then and has also expanded to all military branches

<sup>2</sup> For a brief discussion of the lack of quantitative research into PSFs see (Lily 2002).

multinational corporations (MNC), intergovernmental organizations (IO), and non-governmental organizations (NGO) to participate in security operations. The privatization of security, or more accurately the recognition of private actors' involvement in security operations, builds from an underlying assumption of international politics—that national states with conflicting policy preferences can resolve issues by using military force. The rise of PSFs affords actors opportunities to seek security when state actors are unwilling or unable to provide the required protection against violence. In order to better understand the interdependence between entities that provide security and the actors who seek it, this dissertation focuses on the influence of PSFs on conflict outcomes. This dissertation studies the link between the provision of security, the state, and firms.

PSFs are rational profit motivated corporations that are publicly traded or individually owned companies who provide security services for hire. The range of services provided by PSFs includes, but is not limited to the following services: tactical combat operations, logistical support, strategic planning, intelligence gathering, and technical assistance. PSFs are not mercenaries but legal entities that continue to expand services and clientele in response to increasing global demand (Mandel 2002; Singer 2002, 2003). The theory proposed in this dissertation challenges basic distinctions between states and firms that are found in the literature. Theoretically, states have largely been treated as the sole provider of domestic and international security. The theory expands the role of non-state actors by emphasizing principal-agent and political economic characteristics of firms. This dissertation explores firm specific characteristics

including corporate structure and transparency levels as well as international market conditions to examine the influence of PSFs on conflict outcomes

*Why the Question Is Important*

The theoretical implications stemming from this research are important for the international relations literature. First, the dissertation is a systematic analysis of PSFs; a non-state actor that falls outside the traditional terrorists, rebels, peacekeepers, non-governmental organizations (NGOs), multinational corporations (MNCs), and international organizations (IOs). The emergence of the new phenomena has been shown to systemically influence conflict duration across various spatial and temporal domains (Akcinaroglu and Radziszewski 2012). This dissertation focuses on developing phenomena in international relations to identify the conditions under which PSFs influence conflict outcomes. Because PSFs are amassing more influence as both provider and employer of security services in areas once dominated by the state, the theoretical and policy implications of the research extend beyond PSFs.

Second, this dissertation highlights the increasing importance of PSFs support to national militaries. In the case of the U.S. in Iraq, Singer (2007) argues it was impossible for the U.S. not to employ PSFs in the Iraq War and in future U.S. military operations. PSFs have thoroughly integrated into the U.S. military to such a degree that PSFs failure to provide services reduces operational capacity (Gansler and Lycyshyn 2012; Grasso 2010; GAO 2008b); however, Dunigan (2011) argues that PSFs that operate professional and provide the contracted service may improve military effectiveness and operational capacity. PSFs are not a U.S. centric phenomena as the

United Nation's is becoming dependent on PSFs services in peacekeeping operations (Ostensen 2011) and other countries follow the privatization trend ( Uttley 2005; Walker and Whyte 2005). Yet, PSFs that fail to operate professionally may directly contribute to violence, as Blackwater's Nisour Square incident demonstrated in Iraq (Scahill 2008). PSFs may also indirectly contribute to violence by failing to uphold professional standards—such as Titan's alleged participation in torture at Abu Graib (Brinkley 2004; Cushman 2013). As other countries and organizations follow the privatization trend, the relationship between PSFs and military effectiveness is likely to expand in the future.

Third, developing political economic explanations of PSFs involvement and effectiveness in conflicts contributes to the burgeoning literature on PSFs. The economic consequences of PSFs involvement in conflict have implications for the PSFs, the employers, and local populations. PSFs pursue profits while employers seek service provision efficiency and savings, which creates a principal-agent dynamic in security provision. For local populations, PSFs represent potential security and violence, as PSFs have been involved in successful stability operations (Brooks 2000; Mandel 2012) but have been suspected of illegal activities (Akcinaroglu and Radziszewski 2012; Howe 1998; Leander 2005; Musah 2002). Economic pressures continue to influence the provision of security, changing the role of the state and national militaries in conflict environments (Avant 2004; Mandel 2001). As national military continue to seek perceived financial savings through privatization (Carmola 2012; Worthington 2012), the increased importance of economic determinants of PSF conflict involvement are

likely to shape national policies, PSFs conflict involvement, and international conflict (Abrahamsen and Williams 2006).

Fourth, the analysis focuses on U.S. operations in Iraq and generates several policy implications. First, publicly traded firms are shown to outperform individually (privately) owned firms. Second, firms that face competition out-perform those that do face competition. Finally, firms that are more transparent by providing information on operations out perform more secretive firms. Given these broad conclusions, why did the U.S. Department of Defense hire more individual firms than publicly traded firms, not target competitive service sectors and not hire transparent firms? DoD PSFs policy has largely been shaped in the absence of systematic analysis of contracting in contingency operations (Berrios 2006; Karpoff, Lee, and Valaria 1999). The demand for security services in Iraq far outstripped DoD capacity to manage PSFs effectively (Cancian 2008; DiNapoli 2012; GAO:2008c; Grasso 2010; SIGIR 2004b). DoD's inability to systematically implement policy reduced oversight capacity and created conditions where PSFs have incentives to shirk contracted obligations in order to maximize profits (Brown 2011; CWTC 2011; SIGIR 2009). The research shows that PSFs are not a panacea. For states that continue to shift funding to private actors, the research results suggest that the potential financial gains achieved by employing PSFs may not outweigh the costs.

Fifth, examining the role of the public administration of PSFs in conflict zones establishes connections with international relations and public management literatures. In the U.S. context, considerable work has examined the military as a bureaucracy with

divergent goals and objectives from the president or congress (Allison 1969; Allison and Halperin 1972; Carlsnaes 1992; Sabrosky, Thompson, and McPherson 1982). Allison (1971) establishes the bureaucratic and organizational approaches to demonstrate that governments are not rational unitary actors. In his view, governments are a conglomeration of existing organizations with semi-standardized procedures and programs that influence decision making. Principal-agent problems develop in the creation and implementation of policy, innovation and procurement of national militaries (Avant 1993; Horowitz 2010).

However, the principal-agent dynamics between the president and the military are likely to be less severe than the divide between PSFs and the military due differences in objectives (Bruneau 2011). Unlike national militaries, PSFs have multiple employers and objectives as well as their primary motivation are profit. International relations literature has yet to incorporate PSFs into the literature to the same degree PSFs have integrated into the battlefield. The public management literature, however, has a vast amount of research on privatization of government services<sup>3</sup>, but has only initiated the exploration of security privatization (Goerdel working). The integration of both research area extends the theoretical and policy implications beyond PSFs in Iraq by developing a new framework to address a developing phenomena.

Finally, the data collected for this project represents an additional contribution to the field. The historical involvement of PSFs has been overlooked by scholars despite

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<sup>3</sup> For a review of the literature see, Brown, Potoski, and VanSlyke (2006), Eggers and O'Leary (1995), and Meier and OToole (2009).

growing recognition of their conflict importance. Considering the expectation that reliance on PSFs is only expected to increase (CBO 2008; Stationary Office 2002), access to systematic data on PSFs is likely to increase in the future.

### *Dissertation Outlines*

The remaining chapters are self-contained essays on PSFs. Each chapter provides a selective literature review and theory to address specific research questions. The three PSF characteristics examined are corporate structure, market competition and firm transparency. In chapters II and III, I utilize panel data to aggregate firms by province in Iraq while chapter IV uses the firm as the unit of analysis. Each chapter provides a more thorough discussion of the methods and data employed in the analysis.

The following section provides brief theoretical sketches of each chapter and a review of the results. Chapter II explores how the influence of corporate structure influences PSFs' impact on conflict outcomes. National governments that employ PSFs face the dilemma that PSFs are profit-maximizing agents that have incentives to shirk contractual obligations and operate under incomplete contracts. Incomplete contracts, and PSFs operating outside military institutions, reduce the oversight capacity of the government. Corporate structure, whether the firm is publicly traded or individually (privately) owned, potentially mitigates the effects of incomplete contracts. Publicly traded firms provide more information than individually owned firms, which reduces contract uncertainties and oversight costs which improves performance resulting in lower levels of violence. The results show that publicly traded firms are associated with reduced violence while individually owned firms are associated with increased violence levels.

Given the general confusion of contracting procedures in Iraq (see below) and that both types of firms provide similar services, it is unlikely that there is a selection bias.

Robustness tests, including utilization of armed contracts and Iraq wide samples, confirm the results.

Chapter III explores the influence of international competition and contract structure on PSF performance. PSFs that face competition and under-perform or fail to uphold contractual obligations can be replaced with a competitor. Thus, the more competition a PSF faces, measured by number of bids pre contract, the more likely the firm is to perform optimally. Contract structures contain mechanisms that influence how PSFs are compensated for services and the degree to which performance is rewarded. Neither contract structure nor competition is determined by the type of service provided by the firm. The results show that PSFs with performance incentives provided by the market or contract structure are associated with decreased violence levels in Iraq. However, firms that do not face these pressures have no effect or demonstrate increased violence levels.

Finally, chapter IV explores the information asymmetries that develop between employers and PSFs. In conflict environments, the behavior of PSFs is often unobserved by the employer. This problem is compounded by the destruction of infrastructure, weak government institutions, and conflict environment volatility. When information asymmetries are high, PSFs are able to shirk contractual obligations without penalty. Firm transparency—information provided voluntarily by the firm on operations—is based on business calculations of the firm and varies. PSFs face competing influences to

provide information. In some cases, highlighting successful operations improve market presence while in other situations, identifying the location of personnel may place them in danger. The results indicate that transparency is associated with improved performance as measured by decreases in levels of violence.

The following sections frame the remaining dissertation chapters by providing the context that generated the conflict conditions. A thorough conceptualization of PSFs and differentiation from mercenaries is provided next. Then, a brief review of U.S. privatization policy and privatization efforts during the U.S.-Iraq War is provided. Finally, I conclude with a brief discussion of the implications for the research of the chaotic Iraqi conflict.

### *Conceptualizing Private Security Firms*

PSFs are defined as publicly or privately owned corporations that provide legal military services based on contracts to other entities. By focusing my conceptualization of PSFs on corporate structure, this project utilizes both contracts and firms as units of analysis. Furthermore, by developing a new conceptualization of the firm, this project incorporates key characteristics of PSFs that other studies have ignored. The term private indicates that services are not directly provided by a government (national militaries) or government agencies. PSF include both publicly traded and individually owned companies.<sup>4</sup> Kellogg, Brown & Root Services and Booz Allen Hamilton are publicly traded PSFs that provide logistical and technical support while Executive Outcomes and

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<sup>4</sup> I use 'individually owned' compared to 'privately owned' in order to avoid confusion that private military companies are divided between the two corporate structures.

Sandline are individually owned PSFs made (in)famous through the provision of combat services. AirScan, another individually owned PSF offering airborne surveillance services, provides non-lethal support. Military services are not limited to physical protection, logistics, and technical expertise, as firms provide services ranging from simple meal preparation to owning and operating unmanned aerial vehicles. The range of services includes, but is not limited to direct combat operations, armed operation support, military training, logistics, intelligence, and site protection. All forms of service will be studied in this project.

The scholarly literature has produced numerous conceptual definitions to capture private actors that provide military and security services. The initial focus on firms such as Executive Outcomes and Blackwater prompted scholars to utilize PSFs to distinguish the actors in a conflict. In this context, military services applied to offensive maneuvers undertaken by the firms. Yet, many of the non-state actors that support military operations do not provide offensive military capabilities. In order to develop a clear distinction between mercenaries and private actors, this dissertation utilizes PSFs to denote those firms that provide legal military and security related services.<sup>5</sup> The conceptualization used intentionally draws parallels to other multi-national corporations. For example, the company Global Rescue has held service contracts with Texas A\&M University Qatar and the U.S. Department of Defense. In each case, Global Rescue

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<sup>5</sup> Private security firms is consistent with Dunigan (2011) and Akcinaroglu and Radziszewski (2012) conceptualization of private security companies (PSC) and private military and security companies (PMSCs).

supplies emergency airlift services. PSFs allows for flexibility in firm structure, services, and clients in order to address the changing nature of security services.

Focusing on PSFs' corporate structure allows this study to overcome existing research limitations. By failing to identify the difference in corporate structure and how that structure influences effectiveness, existing research fails to address the economic characteristics of PSFs. Existing typologies of PSFs are instead organized by the unit of analysis. Research by Singer (2003) and Kinsey (2006) is based on the services provided by the firm. Singer (2003) creates three different categories of firms—those that provide combat services, consulting, and logistical support—Kinsey (2006) based his classifications of PSFs on the distinction between “the object to be secured” and the “means of securing the object.”<sup>6</sup> While both scholars rightly focus on the type of services provided, they fail to incorporate how firm variation influences firm effectiveness.<sup>7</sup> Finally, using contracts as the unit of analysis, Avant (2005) establishes distinctions between PSFs based on the type of security, internal (domestic) or external (foreign), which is provided.<sup>8</sup> However, studies organized around contracts cannot provide insight into whether PSFs' influence on the conflict outcome was due to the services provided or the type of firm provides these services. Because of the limitations in existing research, conceptualization in this dissertation focuses on the corporate

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<sup>6</sup> At the international level, the two classifications act as axes that differentiate firms based on the lethality of the services provided. One innovation of Kinsey's typology is that the classification of firms is conditioned by whether the client is public (state governments) or private (corporations, NGOs, etc).

<sup>7</sup> I will also utilize the types of services provided to examine effectiveness.

<sup>8</sup> Internal security services range from site security (Blackwater, now Academia Services, in Iraq. Site security can also include the provision of personal security guard such as Dyno Corp protection of Afghan president Hamid Karzai to intelligence gathering (Open Source Solutions).

structure of the firm which, consequently, allows examination at both firm and contract levels of analysis.

PSFs operate within an international market. Advanced democracies supply and employ the bulk of PSFs. Though the U.S. and U.K. are home to the largest group of PSFs, countries such as Australia, Belgium, France, Germany and Israel are also major players in the expanding international market. Avant (2005) outlines additional firms from countries including Angola, Canada, Italy, Russia, South Africa, Iraq, Hungary, Kuwait, Netherlands, New Zealand, Romania, Hong Kong, Turkey, and Sweden. The international market for military services has grown dramatically: the estimated revenue in 1990 was 55.6 billion while estimated industry revenue in 2003 was over \$100 billion (Singer 2003, 8). The largest employer on the London Stock Exchange is Group4Securicor (G4S), which operates in over 100 countries and forms a prominent role in international aviation security (Abrahamsen and Williams 2011). Because PSFs are based largely on corporate profit motivations, contract fulfillment and reputation are critical for firms to secure market share.

The international market place also creates opportunities for PSFs to operate in politically sensitive areas where national forces are limited.<sup>9</sup> One such example occurred during the Clinton administration's involvement in Kosovo in the early 1990s. The political climate—simmering public outcry from botched operations in Somalia in 1993 and regional instability (Burk 1999; Klarevas 2000)—made U.S. deployment of forces

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<sup>9</sup> For corporations, PSFs provide services that are not available from other sources. Corporations and other non-state actors have few of the 'audience' concerns of governments.

political infeasible (Kinsey 2006). As a consequence, Military Professional Resources Inc was contracted to assist in training Croatian forces. Consequently, Croatian forces were able to promptly reduce the territory controlled by Serbian forces from approximately 30 percent to 4 percent (Avant 2005, 103). Moreover, PSFs have expanded to include water based services such as vessel protection and coastal patrols. These services largely developed in response to the Somali (Mineau 2010; Onuoha 2009) and Asian ports (Liss 2009), though many problems may still arise when employing private actors to perform traditional maritime state functions (Burger 2009). Because some operations are conducted in international waters, PSFs have expanded into areas beyond direct state control, but the role of private actors in these areas remains largely undefined. In sum, PSFs developed as a consequence of market requirements. Both states and non-state actors utilize PSFs as they provide services that states are either unable or unwilling to provide. By corporatizing security, firms are able to improve efficiency while engaging employers in legal, contractual obligations.

#### *Mercenaries versus Private Security Firms*

In the modern context, mercenary forces are not, strictly speaking, PSF. Legal definitions were developed by the international community to counter the employment of mercenary forces. The Additional Protocol I to Article 47 of the Geneva Convention (1977) lists the following 6 criteria that define mercenaries (Geneva 1977).

- a) Is specially recruited locally or abroad in order to fight in an armed conflict;
- b) Does, in fact, take a direct part in the hostilities;
- c) Is motivated to take part in the hostilities essentially by the desire for private;

- gain and, in fact, is promised, by or on behalf of a Party to the conflict, material compensation substantially in excess of that promised or paid to combatants of similar indent ranks and functions in the armed forces of that Party;
- d) Is neither a national of a Party to the conflict nor a resident of territory controlled by a Party to the conflict;
  - e) Is not a member of the armed forces of a Party to the conflict; and
  - f) Has not been sent by a State that is not a Party to the conflict on official duty as a member of its armed forces

Debate continues as to whether the above definition is sufficient to prosecute an individual as a mercenary.<sup>10</sup> The definition is worded to exclude foreign military personnel integrated into the armed forces of another state (i.e. the French Foreign Legion or the 'Wilde Geese').<sup>11</sup> Additionally, individuals motivated by ideology or religion and those not directly involved in combat are left outside of the mercenary label. As will be seen, private security firms provide services that are critical to combat operations without necessarily exposing individuals to conflict. However, even after the United Nations' General Assembly adopted more strict language concerning mercenaries in the International Convention against the Recruitment, Use, Financing, and Training of

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<sup>10</sup> For a review of the existing argument see (Carmola 2010)

<sup>11</sup> The historical development of mercenary forces dates back to ancient civilizations, particularly Egyptian and Roman cultures. Mercenary forces experienced incremental evolution following the conclusion of the Hundred Years War between France and Britain as Italian city-states enlisted foreign forces to protect their trade interests (Thomson 1996). The economic prosperity of Italian city-states provided governments with the opportunity to employ mercenary forces thus avoiding problems associated with arming their citizenry while providing quick, efficient fighting forces (Jay 1996). The French Revolution and the Napoleonic Wars effectively ended mercenaries on land. Mercenary forces at sea dwindled in the second half of the 19<sup>th</sup> century as the English privateer system was replaced with state naval forces (Stark 1987).

Mercenaries, the lack of differentiation between mercenaries and PSFs has led to limited prosecutions (Singer 2003b). Modern PSFs, however, typically actively separate themselves from mercenary labels and tactics by adopting corporate business models, publicly conducting affairs, and informing governments of operations.

PSFs are conceptually and theoretically distinct from mercenaries, despite similarities in employment activities because of their corporate structure. For example, Table 1 lists six characteristics—organization, motives, recruitment, service, competition and transparency level—that distinguish mercenaries from PSFs. First, mercenaries consist largely of temporary or ad-hoc groupings of individuals while PSFs have permanent corporate structures. While mercenaries are often formed without business infrastructure, PSFs have corporate headquarters similar to other MNCs. Second, mercenaries are motivated by individual, short-term gain. PSFs are motivated by corporate profit. This distinction does not eliminate individual employees of PSFs to be motivated by individual gain, but individuals are not the primary actors in PSFs. Third, mercenaries often recruit individuals covertly, given the international criminalization of being a mercenary. While PSFs recruitment is public and legal. Fourth, the scope of services by mercenaries versus PSFs is considerably different. Mercenaries operate exclusively as providers of combat services while PSFs have few limitations in offered services.<sup>12</sup> Fifth, PSFs operate in a globally competitive open market. Mercenaries tend

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<sup>12</sup> Singer (2003) lists the following seven distinguishing characteristics of mercenaries: individuals must be foreign, independent from a national force, short-term economically motivated, recruited through oblique ways, organized into ad-hoc groupings of individual soldiers, and focus exclusively on combat services. This project focuses on the legal provision of military services.

to only operate in specific regions where limited national and international presence reduces the enforcement of laws. Finally, the level of transparency varies between PSFs and mercenaries. For PSFs, transparency is a business calculation that may or may not influence profitability whereas mercenaries almost exclusively shroud operations in secrecy.

**Table 1 Characteristics of Private Security Firms and Mercenary**

Characteristic	PSFs	Mercenaries
Organization	Publicly or Individually Owned Corporations	Temporary and Ad-hoc
Motives	Corporate Profits	Individual, Short term
Recruitment	Public, Legal Advertisement	Covert, Illegal
Services	Combat, Logistics, Support	Exclusively Combat Services
Competition	Multiple Competitors, Global	Limited, Regional
Transparency	Dependent on PSFs' business calculations	Opaque, Obfuscate Operations

Corporate structures distinguish PSFs from mercenaries. Mercenaries and auxiliaries are not considered private security firms, though several firms operate as default 'guns for hire'. Modern PSFs are corporate entities that operate within the established economic system. The historical development of mercenary forces dates back millennia while PSFs are a relatively recent addition to the battlefield.<sup>13</sup>

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<sup>13</sup> One evolution of mercenary forces dates back to the conclusion of the Hundred Years' War between France and Britain. After the signing of the Treaty of Bretigny in 1360, Europe was inundated with thousands of individuals with military skills. Foreshadowing the market development that would centuries later follow the conclusion of the Cold War, soldiers were largely unwilling to abandon their trade. Market demand for companies (small units of soldiers) of private military skills quickly developed in Italian city-states (Thomson 1996) but was not sustained. The economic prosperity of Italian city-states provided governments with the opportunity to employ mercenary forces, thus avoiding problems associated with arming their citizenry while providing quick, efficient fighting forces (Jay 1996, 17).

The importance of technological change is evident in the development of modern private security firms. Unlike mercenaries, PSFs typically export specific, highly specialized skills—not combat capabilities. Moreover, the development of civil administrations, expansion of contract regulations, and nascent development of the citizen-soldier concept contributed to the diminished role of mercenary forces on the battlefield (Avant 2000). Mercenaries were almost the exclusive provider of state forces during the 17th century (Howard 2009), but the French Revolution and the Napoleonic wars effectively ended mercenaries on the battlefield for the next hundred years.<sup>14</sup> The historical development of mercenary forces highlights one critical aspect of PSFs: PSFs have developed and flourished during a time period when national governments, particularly democracies, have largely consolidated the use of force. The development and continued growth of the industry is puzzling considering the lack of mercenary employment over the last two centuries.<sup>15</sup>

#### *U.S. Security Privatization and Defense*

The U.S. has pursued the most aggressive privatization of military and security services than any other country. Privatization in the modern U.S. military began when training contracts were awarded to Virginia-based group Vinnell Corp in 1975 to assist in training Saudi Arabian National Guard units. Some scholars, however, have argued

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<sup>14</sup> The use of private forces at sea mirrored the decline of mercenaries on the battlefield. The English system of privateers that supported the growth of empire during the 18<sup>th</sup> century diminished during the 19<sup>th</sup> century but did not completely disappear, however (Stark 1987).

<sup>15</sup> The rise of PSF represents an alteration to both the profits and monopolies of force of the state. It is unlikely that states have ever possessed a true monopoly of violence as the creation of state security has historically been a combination of public efforts (national armies) and private endeavors. History is replete with instances of states employing mercenaries.

that the start date of privatization in the U.S. actually dates back to Civil War (Wilson 2006) or potentially the Revolutionary War (Epley 1990).<sup>16</sup> This section explores U.S. efforts to privatize military services in contingency operations.

Ideological shifts that occurred under the Reagan administration do not account for the emphasis on privatization in national security. The U.S. was utilizing the market to supply national security capabilities prior to WWII.<sup>17</sup> However, the technological requirements of the modern battlefield and the volume at which PSFs are employed has changed. These critical changes are clarified in the following introduction from the (DoD 2001) manual for “Contractor Support in Theater of Operations:”

The use of civilian contractors for support within the US military is not new. Up to World War II, support from the private sector was common. The primary role of contractors was simple logistics support, such as transportation, medical services, and provisioning.

As the Vietnam conflict unfolded, the role of the contractor began to change. The increasing technical complexity of military equipment and hardware drove the Services to rely on contractors as technical specialists, and they worked side by side with deployed military personnel.

The increased technological requirements—or burdens—of the modern battlefield precipitated increased PSF employment. The rapid increase in privatization, however, is largely due to shifts in perceptions of soldiers and capabilities.

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<sup>16</sup> Clive Whyte (2005) note that individuals participating in foreign military excursions are regulated by the Foreign Enlistment Act of 1870 and Part VI of Terrorism Act of 2001.

<sup>17</sup> Arguably, except for the key attribute of corporate structure, the international use of privateers functioned as PSFs dating back to Francis Drake. Privateers operated under the protection of their monarch requiring letters of permission to capture enemy vessels. Yet, privateers were exclusively privately owned and operated. After taxes, remaining profits gained from the sale of captured booty were divided amongst the ships' owners.

The 1990s witnessed expansion in the use of security contractors similar to other government sectors (Camm 2012). The U.S. government commissioned numerous reports and analysis on the potential of privatization to be more monetarily efficient (Defense Science Board 1996, GAO 1997b; GAO 1998; GAO 2009). The initial investigation of PSFs cost-effectiveness was highly contentious as Halliburton was provided with the initial contract to conduct the analysis (Scahill 2007). By the time Donald Rumsfeld became Secretary of Defense in 2001, privatization was already a common practice in the U.S. military (Minow 2004; Rumsfeld 2002). The collusion between the private sector and the government reduced the legitimacy of many privatization efforts. In particular, the significant discrepancy between contractors and U.S. military personnel salaries in Iraq and Afghanistan generated unrest within the military (Kelty and Schnack 2012). The continued U.S. dependence on contractors is likely to persist, even with the draw downs in Iraq and Afghanistan, as the U.S. has expanded contractor supported operations in Africa, Asia and South America (Nevers 2012).

The U.S. has led the globe in identifying non-core military billets (jobs) where PSF employment provides potential benefits. Partly as a result of the financial and material burden imposed by individual soldiers, PSFs have increasingly become an economical option.<sup>18</sup> Non-core military jobs, which have included various professions ranging from mail services to pilot training, are increasingly the domain of private

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<sup>18</sup> According to the military compensation calculator, a service provided by the Office of the Secretary of Defense, the average per year costs for enlisted personnel are \$62,689 while officers average \$137,435 (DoD 2011).

security firms. However, the distinction between core and non-core jobs continues to diminish due to the near exponential increase in contracts—DoD entered into over 3,000 contracts with U.S. military firms with an estimated value of over \$300 billion (Singer 2003b). For example, embassy protection was once the domain of the Marine Corps, yet private contractors secured much of the 'Green Zone' in Baghdad. Despite U.S. recognition of numerous problems associated with war time contracting (CWTC 2011), the U.S. continues to lack a published doctrine for private military usage (Pincus 2004). The lack of clarity between operational roles of contractors and national forces confounds existing international competition for contracts.

PSFs operating in Columbia demonstrate the internationalization of the market for private security. Plan Columbia, legislation passed in 1999 to assist in Columbian anti-drug operations, was a U.S. \$7.5 billion to stabilize the government while limiting the deployment of U.S. troops (Singer 2003, 200). Funds from Plan Columbia were not required to be used by U.S. PSFs; rather, competition determined contract recipients. PSFs, however, were not limited in number or scope, as U.S. providers continue to support intelligence gathering, education, and police training. International competition for contracts and other employers' pursuit to provide security for business operations continue to inundate Colombia with PSFs. A case in point is British Petroleum's continued outsourcing of military training and logistics to the U.S. based firm DSL from 1992 to 1998 in order to protect oil infrastructure (O'Brien 1998). Operations associated U.S. Plan Colombia are available, but the lack of accountability in either the U.S. or the

international system as a whole limits the extent to which PSF involvement in Columbia can be completely identified.

U.S. employment of PSFs demonstrates two more general characteristics of PSFs—international competition and services expansion. U.S. dependency on PSFs when conducting military operations is reflective of the growing trend in production of military products and services. Brooks (2005) argued that globalization of military hardware production has a pacifying effect on the great powers; however, the consequences of global competition for the provision of military services are unknown. As the production and operation of military services continue to globalize, some scholars have argued that privatization is beginning to impinge on national sovereignty (Verkuil 2007).

#### *U.S. Privatization and Iraq: An Introduction*

The events leading up to the invasion of Iraq in March of 2003 urgently pushed the U.S. military into action. The pace of the political escalation and military buildup prior to the U.S. invasion elevated the importance of PSFs. Prior to the Gulf War in 1991, where the U.S. mobilized approximately 697,000 troops and 34 allied nations that supplied an additional 261,600 troops, the U.S. coalition in Iraq largely consisted of British and Australian forces totaling 47,000 personnel. The stark contrast in troop levels belies the major differences in the operations: the Gulf War's primary objective was to liberate Kuwait while the objective of the U.S-Iraq War was to facilitate regime change. War with Iraq followed the September 11th (9/11) attacks on the World Trade Center,

and the invasion of Afghanistan in November 2001 continues to condition the role of PSFs.

The 9/11 attacks altered the trajectory of the Bush Administration's foreign policy, as terrorism and the countries that sponsor terrorism were elevated as a major threat to U.S. national security. The resulting foreign policy, dubbed the Bush Doctrine, was defined in a series of speeches and policy maneuvers that precipitated the invasion of Iraq. President Bush's first address to Congress on September 20, 2001 initiated the process of broadly categorizing al Qaeda and the Taliban as terrorists and identifying their direct involvement in 9/11. President Bush adopted moral absolutism by re-defining countries with the following statement: "you're either with us or against us (Bush 2001)." It is within this moralistic framework that President Bush delivered the 2003 State of the Union address that famously designate Iraq, Iran and North Korea as the 'axis of evil'. The Bush Doctrine elevated the importance U.S. power projection nationalism, and democracy (Monten 2005) while simultaneously pursuing foreign intervention, pre-emptive war and unilateralism (Heisbourg 2003; Schmidt and Williams 2008). The dissonance in philosophic approaches between members of the Bush Administration's foreign policy team reflects uncertainty about the justifications for war with Iraq (Mann 2004).

The legal argument for the war in the Iraq centers on accusations of sponsoring terrorism and pursuing weapons of mass destruction (Schmitt 2002). The justifications for the war were played out to a largely skeptical international audience while the American public largely supported the initial invasion. The U.S. sought international

support at the United Nations for an invasion based on U.S. and U.K. intelligence reports that Hussein's regime had reconstituted its nuclear weapons program. Accusations from the Bush administration and supportive U.S. political atmosphere abounded concerning the potential threat Iraq's weapons of mass destruction (WMD) posed if held by the regime, or worse, if the regime passed the weapons onto terrorist organizations. Iraq's support of terrorism and pursuit of nuclear weapons has been well established (Pfiffner 2004). However, Iraq's pursuit of nuclear weapons ended following the Gulf War. Intelligence discoveries during the invasion confirmed little intention of re-establishing the program (Gellman and Pincus 2003).<sup>19</sup> Iraq was in possession of chemical weapons including anthrax, botulinum toxin aflatoxin and ricin; however, these stockpiles were not newly acquired or pursued in the period asserted by the Bush Administration (Cirincione, Wolfsthal, Rajkumar 2005, 329-361). Similarly, Iraq's sponsorship of terrorism was not definitively identified by the Bush Administration (AP 2003; MilbankPincus 2003; Sanger 2003), but instead remained intentionally vague (Novak 2003).

Debates surrounding the legal justification for the invasion were highly contentious. Domestically, political pundits excoriated one another over accusations of manufacturing evidence of anti-americanism. The debate brought together unlikely allies such as libertarian House Representative Ron Paul and liberal Senator Edward Kennedy. While proponents of the war included Vice President Dick Cheney and Senator Hillary

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<sup>19</sup> Pfiffner (2004) effectively debunks claims that Iraq sought nuclear material from Niger and purchased aluminum tubes.

Clinton, Congress acted in the October of 2002 authorizing President Bush to use force if the Hussein regime refused to halt pursuit of WMDs. The law passed the Senate with 77 votes, including 26 democratic Senators. Senator Chafee of Rhode Island was the lone Republican voting against the bill. Similar to the legal justification for the conflict, the circumstances of the vote and the meaning of the legislation remained a contentious issue for the involved individuals.

Internationally, the Bush Administration sent Secretary of State Colin Powell to the United Nations to pursue a resolution allowing the use of force. On February 5, 2003 Powell argued that Iraq was in violation of numerous U.N. resolutions and that failure to adhere to Resolution 1441 provided the legal authority for war. Resolution 1441 was passed in November of 2002 and cited no less than 8 other resolutions to which Iraq had failed to adhere since 1991 (United Nations 2002). Many interpretations of Resolution 1441 stopped short of granting use of force; instead the resolutions cited the need to resume weapons inspection and promised 'grave' consequences for failure. The U.N.'s failure to pass additional Resolutions, particularly the Security Council's failure to authorize the use of force, generated considerable international resentment against U.S. military actions. The dubious legal justification—*jus ad bellum*—heightened confusion over the legal role of firms in conflict zones which continues to persist today.<sup>20</sup>

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<sup>20</sup> Ethic confusion over the legal justifications of the Iraq War is confounded by the use of PSFs (Pattison 2008; Pattison 2010; Pattison 2012; Pattison 2010b) has investigated the application of just war doctrine finding that PSFs are an aberration, as they are neither mercenaries nor national militaries. The ethical justifications of employing PSFs have yet to be expanded to include both the employing country and country of operation in terms of challenges to sovereignty (Abrahamsen and Williams 2011; Kassebaum 1999)

### *Conclusion: Iraq*

The confused, indirect and unscripted events leading up to the invasion of Iraq in March of 2003 accurately describe policies governing contractors in Iraq. Reconstruction in Iraq was unique, as the National Security Presidential Directive-24 established DoD as the primary actor in reconstruction efforts—a role traditionally left to the Department of State. Camm (2012) argues that the dichotomy of funding particularly with DoD in charge of funding and civilians in charge of policy created disunity that plagued reconstruction throughout the conflict. The dissonance between military and civilian leadership was embodied by the hostility and policy divergence between Administrator of the Coalition Provisional Authority Paul Bremer and Secretary of Defense Donald Rumsfeld (Mitchell and Massoud 2009). Rumsfeld issued orders and directives to Bremer that often failed to incorporate conditions on the ground. The general lack of policy clarity and understanding reduced the effectiveness of operations and resulted in increases in financial waste (SIGIR 2007b).

DoD's limited experience with contracting in contingency operations convoluted the administration and oversight of private security firms. DoD's transition from weapons procurement to service contracting was rough, as the demand for services outstripped the military's organizational capacity (Berrios 2006; Karpoff, Lee, and Valaria 1999). The massive increase in the demand for services, coupled with the proclivity for corruption, contributed to an environment that was largely devoid of consistent rules and regulation for the utilization of contractors (Brown 2011; Cancian 2008; DiNapoli 2012; SIGIR 2006b) The Federal government has conducted studies to

improve the use of contractors in conflict environments though the affects of the changes are unknown (CWTC 2011; SIGIR 2009). The lack of oversight, however, establishes conditions that favor the study of PSFs. Because of the disorganization that pervaded the conflict, contracting procedures were haphazard and inconsistent. The lack of consistency reduces the likelihood of systematic selection in firms, services and locations. DOD's organizational practices were not sufficient for an organized, systematic utilization of PSFs. PSFs operated under a variety of contract structures, services, and locations based on the nature of the conflict and the demand for services. Systematic placement of certain firms based on the mechanisms investigated in this dissertation is unlikely.

In the following chapters, characteristics of PSFs and the international market are examined to identify PSFs' influence on conflict outcomes. Though the literature on PSFs has grown considerably following the wars in Iraq and Afghanistan, little empirical analysis has been conducted. This dissertation fills several voids in the literature, as it provides systematic analysis of PSFs that provide more than simply armed services—particularly important as the majority of firms provide such services. Additionally, the dissertation contributes to the debate on contracting public goods in an effort to identify what conditions increase PSFs efficiency. The per firm analysis provides clear and concise indicators of the utility of specific firms. Lastly, the theoretical frame of the dissertation is transportable to other conflict environments, as the focus on Iraq was primarily based on data availability. Thus, the theoretical and policy implications resulting from the dissertation provide a structure for future investigations.

CHAPTER II  
PRIVATE SECURITY FIRMS AND THE INFLUENCE OF CORPORATE  
STRUCTURE ON CONFLICT OUTCOMES

*Overview*

Does the corporate structure of private security firms (PSFs) influence conflict outcomes? Employers' inclusion of PSFs in conflicts generates a dilemma for government employers as PSFs are profit-maximizing agents contracted to provide services outside established military structures. Contracts provide the legal structure to govern the provision of services. But contracts between PSFs and state employers are incomplete, particularly in conflict zones where considerable unforeseen contingencies exist. One approach to mitigate incomplete contracts is to identify information about the PSFs. We expect that the severity of the dilemma varies across different types of PSFs' corporate structures. PSFs are either publicly traded or individually owned firms—firms that have non-public ownership structures. Corporate structure of the firm influences information availability. Increased information reduces oversight and management costs for employers of PSFs which, in turn, is argued to improve firm effectiveness. Satisfying demand for security services requires utilizing both publicly traded and individually owned firms. Expectations are tested utilizing both U.S. and non-U.S. headquartered private security firms operating in Iraq from March 2003 to December 2007. Based on the U.S. objective of establishing law and order, conflict outcome is measured using insurgent attacks and civilian casualties. Publicly traded firms are associated with reductions in violence, while individually owned firms are not.

My findings have important theoretical and policy implications for both PSFs and their employers.

### *Introduction*

Does the corporate structure of private security firms influence their ability to shape conflict outcomes? Popular conceptualization of PSFs as guns-for-hire, fortified by the graphic images of Blackwater employees hanging from bridges over the Euphrates in Iraq in March of 2004, are not consistent with the majority of PSFs operating in conflict zones.<sup>21</sup> Private security firms are publicly traded or individually<sup>22</sup> (privately) owned firms that provide legal military and security services based on contracts to other international actors. Because PSFs vary, particularly in ownership structure, firms that provide similar services may not provide the same service quality. Firm involvement in operations potentially increases the efficiency and capabilities of national forces but creates a dilemma for government employers. This dilemma generates conditions where PSFs have opportunities to shirk contractual obligations, PSFs are profit-maximizing agents contracted to provide services outside the established military judicial structure.

Contracts delineate legal obligations and are either complete or incomplete.

Complete contracts contain the universe of alternative environment conditions—an

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<sup>21</sup> Despite the (in)famous uses of private security firms including Executive Outcomes in Angola (Dokubo 2000; Harding 1997), Blackwater in Iraq (Scahill 2005) and Sandline in Sierra Leone (Kinsey 2006, 74), the private security industry is largely composed of firms that provide non-combat services. In the most recent Iraq-U.S. war, a conflict purportedly overrun by privately armed contractors (Miller 2007; Glanz and Lehren 2010), armed security comprised approximately ten percent U.S. Department of Defense.

<sup>22</sup> Individually owned firms describe all firms that are not publicly traded. This chapter uses the term individually owned firms in order to avoid confusion between private security firms and privately owned private security firms.

unlikely situation in conflict zones where considerable unforeseen contingencies exist. Even under better conditions, writing complete contracts is prohibitively expensive (Hart and Moore 1988). Consequently, contracts between PSFs and state employers are incomplete due to the inability to accurately forecast future states of the conflict. Incomplete contracts are susceptible to agency problems between employers and firms (Coase 1937; Shelanski and Klein 1995; Williamson 1979; Williamson 1985). Contingency contracting that involves PSFs has two sources of uncertainty. First, neither the firm nor the employer can predict the state of the conflict environment. Second, employer's have limits forecasting the ability of PSFs to shirk and fulfill contracts, as PSFs possess an information advantage over employers. Employers can mitigate the information advantage of the firm by gathering PSFs specific information. The PSFs' corporate structure influences the degree to which the contract can account for firm uncertainties by reducing agency problems which mitigates the likelihood of shirking. Publicly traded firms are required by U.S. laws to provide more information about activities and operations than individually owned firms, reducing uncertainty about the firm. Consequently, publicly traded firms are less likely to shirk obligations and be more effective in conflict environments.

The U.S.-Iraq war provides several advantages to examine theoretical expectations of PSFs shirking on contractual obligations. A new data set was compiled using Department of Defense (DoD) contractors operating in Iraq from 2003 to 2008. In total, 1,902 DoD contracts involving over 600 different firms are included in the analysis. Each PSFs was geo-located into one of eighteen Iraqi governorate (province).

First, Iraq is a diverse country with substantial social, economic, and ethnic heterogeneity. Second, the data include both U.S. and non-U.S. headquartered companies, mitigating concerns the results are U.S. centric. Second, numerous publicly traded and individually owned firms provide the same services, reducing endogeneity concerns. Moreover, U.S. efforts in Iraq were sufficiently disorganized that systematic assignment of firms based on corporate structure was unlikely (GAO 2008c; Grasso 2010). Fourth, U.S. transparency laws assist data acquisition, as Freedom of Information Act yielded once military restricted data. Fifth, measures to operationalize consequences of shirking are available. In Iraq, one U.S. objective was establishing law and order and one component of law and order is a relatively stable and safe environment (Crane and Terrill 2003; CWTC 2011; Jones et al. 2005). Law and order is operationalized using insurgent attacks and civilian casualties. Finally, the conflict includes national military forces and multiple PSFs concurrently operating, which enables separation of their effects.

In the remaining sections, the globalization of PSFs' employment in order to examine the incomplete contracting environment is highlighted. Then the article's theoretical argument about the conditions under which PSFs influence conflict outcomes using the Iraq-US war is provided, generating specific testable hypotheses. The remaining sections detail the data sources, measurement strategies and empirical findings. In order to ensure that the results are not conditioned by differences in risk acceptance between publicly traded and individually owned firms, sensitivity analysis using armed PSFs in Iraq was conducted. The results are substantively similar to the

previous results. Finally, a brief discussion of the theoretical and policy implications is provided.

### *Literature Review*

The last five decades have witnessed a steady increase in global demand for private security services (Avant 2008; Singer 2003; Dunigan 2011). Private security firms (PSFs) provide services ranging from helicopter gun-ships to food preparation. The value of the international market has ballooned from approximately \$56 billion in 1990 to over \$100 billion in 2003—not including the major increases due to U.S. operations in Iraq and Afghanistan (Singer 2003; Vines 1999). In much the same way that weapons development is transitioning, according to some scholars, away from nation-states to multinational corporations through the globalization of production (Brooks 2005; Bitzinger 1994; Moran 1990), private security firms represent a transition in the provision of services and personnel. PSFs are headquartered in over thirty countries, supply hundreds of services, and generate billions of dollars in annual revenue (Singer 2003). Whether it is the U.S. spending over \$100 billion in Iraq or the United Nations increasing spending from \$44 million in 2009 to \$76 million in 2010 on PSFs, PSFs are becoming integral actors in the international system (Glanz and Lehren 2010; Lynch 2010; Ostensen 2011; Pingeot 2012).

Military forces have numerous objectives ranging from conventional destruction of enemy forces to maintenance of border security and nation building. Recent research recognizes the importance of unit quality on conflict outcome. (Biddle 2004; Biddle 2001) argues that how forces are employed ('force employment'), not simply the

composition and technology of forces, determines battlefield outcomes. (Brooks and Stanley 2007) further disentangle military effectiveness into four categories—integration, responsiveness, skill, and quality. Other research suggests that the organizational capacity of the forces influences conflict (Horowitz 2010; Goldman and Eliason; 2003). Reiter and Stam (1998) demonstrate that forces that have better logistics, innovation, and leadership are more likely to be successful in combat. They attribute these characteristics to militaries from democratic states. Yet, for states involved in conflicts, these characteristics of battlefield success are now available for hire by contracting PSFs. State and non-state actors have increasingly turned to the private sector for service provision. States are conceptualized as firms that contract out services. This section provides a brief outline of the privatization process that generated the private security market in order to identify characteristics of the incomplete contracting environment in conflicts.

In his seminal work, Lane (1979) emphasized the division between producers of protection (government) and consumers (citizens, merchants, etc) to construct a historical account of the development of the state. Protection from violence provides the motivation for the social organizational changes that gave rise to monopolies of violence over specific geographical locations (i.e., the state). Lane demonstrates that protection costs are not static, and, as a consequence, security providers are required to adapt to changes in protection costs. Protection costs are applicable to the international private security market. Contracting services, in general, incurs transaction costs including the writing, negotiation and evaluation of contracts (Williamson 1979; Williamson 1985).

For privatization of services to be cost effective, economic benefits of privatization must overcome oversight, regulation, and enforcement costs. The cooperation between states and firms in the provision of security services generates the international market, as competition potentially reduces the price of protection. Currently, structure of the international security market, which is still dominated by states, includes numerous large firms and multiple smaller firms.

One objection to this argument asks if states formed based on the benefits of protection monopolies, what motivation exists to allow for PSFs to develop and compete in the provision of protection? Three responses based on market dynamics and government veto capacity are outlined. First, a state's ability to engage in war and provide protection is dependent on its ability to extract resources from the population to cover the cost of organized violence (Levi 1989; North 1981; Tilly 1985). Only in rare cases such as Executive Outcomes' involvement in Sierra Leone (Avant 2005, 82-101) are PSFs able to challenge the state's ability to collect revenue. Thus, the international market is not in direct competition for domestic revenue, particularly as most governments have the capacity to regulate domestically operating PSFs. Governments may also prohibit certain services such as airborne surveillance and wiretapping. Second, decisions to utilize private security firms may reduce the domestic costs associated with international intervention by decreasing transparency and reducing potential political liabilities of deploying national forces (Carmola 2010). Third, some governments have argued that cost reductions achieved based on the efficiency of PSFs relative to national

militaries provides a significant monetary incentive to privatize security (Stationary Office 2002; DoD 2001).

National militaries, particularly in democracies, have increasingly recognized the direct and indirect influence of contractors on conflict processes. Direct influences on conflict include the provision of armed security personnel to conduct specific operations and to protect base locations. In these instances, PSF employees are armed and are often authorized to use force in defensive situations. Furthermore, private security personnel often possess similar clothing, weapons, and training as the national militaries to whom they provide support to such a degree that differentiating the PSF from the national military is difficult (Bruneau 2011; Dunigan 2011). Direct militarized support, though uncommon, is increasingly influential on the world's battle fields. More common are PSFs indirect influence on conflict environments by providing non--lethal logistical, technical, and intelligence support. The daily provision of soldiers' necessities from clean water to fuel are increasingly provided by PSFs whether the employer is a state (i.e., U.S.) or international organization (i.e., U.N.) (CWTC 2011; Isenberg 2009; Pingeot 2012). If firms provide unsatisfactory services, the combat proficiency of the recipient suffers; soldiers cannot fight without water and bullets.

In sum, private security firms contractually provide services to employers based on incomplete contracts. The inability to forecast the future states of the conflict generate agency problems in conflict. Gathering information on the firms provides employers with one mechanism to reduce uncertainty associated with the firm. In the following section, characteristics of the firm—specifically the corporate structure—are

argued to shape the level of information available to the employer. Specific testable hypothesis from the U.S.--Iraq conflict are drawn from the general theoretical frame.

### *Corporate Structure and Conflict Outcomes*

The U.S. and coalition forces invaded Iraq in March of 2003 allegedly over Iraq's failure to adhere to U.N. Resolution 687 and the Hussein regime's pursuit of weapons of mass destruction. Despite then U.S. President George W. Bush's declaration that major military operations were over in May of 2003, the political and ethnic turmoil resulting from the removal of the Ba'athist regimes persisted beyond the withdrawal of U.S. forces in December of 2011. The demand for services in the war required DoD to hire private contractors.

The U.S. employed tens of thousands of private contractors to provide services ranging from electricity to armed security. U.S. dependence on contractors generated confusion in the writing, administration and evaluations of contracted services (Grasso 2010; GAO 2008c; SIGIR 2004). In the case of the U.S. DoD, inconsistent contracting procedures plagued U.S. military operations throughout the conflict, potentially reducing military effectiveness (Hutton and Solis 2009). The haphazard approach to contracting exacerbated the incomplete contracting environment. Incomplete contracts occur as the nature of services is only revealed based on the true state of nature, which may not be known (Hart and Moore 1999; Williamson 1979; Williamson 1981; Williamson 1985). Incomplete contracts are problematic in conflict zones, as neither the employer nor the PSFs are aware of the true state of the conflict.

The theoretical argument is articulated with examples from the U.S.-Iraq War because of the data used to test the hypothesis. Iraq provides several advantages when examining the influence of PSFs. First, the U.S.-Iraqi case captures the internationalization of the market, as U.S. and non-U.S. based firms provided armed and unarmed services. Service variation ranged from Blackwater's protection detail of Paul Bremer, chief executive of the Coalition Provisional Authority from May 2003 to June 2004, to G4S Greenzone armed security details, to KBR's provision of fast food eateries. The threat to generalizability that Iraq was disproportionately inundated with contracts is mitigated by the continued dependence of state and non-state actors on PSFs.<sup>23</sup> Third, governorate are used as the unit of analysis due to the social, economic, ethnic and religious heterogeneity of the provinces. In addition, the conflict started as a major military intervention but changed to an insurgency and a reconstruction occupation. Finally, the research design avoids a major weakness of case study work---selection on the dependent variable (King, Keohane, and Verba 1994; Gerring 2004; Gerring 2007). Level of violence is the dependent variable, not the corporate structure of the PSFs.

In the case of Iraq, PSFs' direct and indirect influence on conflict outcomes includes support for the military (Dunigan 2011) as well as the provision of public goods such as water and electricity (Singer 2007). In Iraq, PSFs shirking contracted obligations reduces their effectiveness in minimizes levels of violence, as both un-armed and armed

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<sup>23</sup> Singer (2007) and Kinsey (2006) detail U.S. dependence on contractors in contingency operations. For contractors operating under U.S. contracts but not directly for the military, the CBO (2008) articulates that the provision of security is the responsibility of the contracting agency, not the U.S. government. Ostensen (2011) outlines U.N.'s dependence on PSFs.

PSFs provide critical services. Consider the importance of providing meals. If Napoleon was right and an army travels on its stomach, then the 10 billion dollar plus contracts for four years worth of food services in the Middle East suggests that PSFs are fundamental to U.S. military operations (Pincus 2010). Shirking threatens the operational capacity of the U.S. military, PSFs provide as critical services such as fuel, ammunition, and water (Anderson:2011; Broder and Risen 2011; Helman 2009; GAO 2008b). Shirking by armed contractors, through either disregard for collateral damage or failed service delivery, may result in increased violence in a conflict (Scahill 2008).

The likelihood of shirking occurs in each of the three incomplete contracting phases: writing, administration and evaluation. Identification of what constitutes fair pricing for services is problematic for writing initial contracts, as PSFs obfuscate the true costs of providing services. For example, the Special Inspector General (SIGIR) for Iraq noted that Kellogg, Brown and Root (KBR) provision of fuel to foreign embassies were routinely and incorrectly marked as proprietary. SIGIR maintains that the practice was "inappropriately restricting the governments use of information that KBR is required to gather for the government as part of KBR's management of Task Order 13 (SIGIR 2006b, 5)." Employers' inability to know the pre-contract cost of production places the employer at a contractual and informational disadvantage, particularly in conflicts where information collection is costly.

Shirking is possible because contract administration is burdened by four factors. First, gathering information on firm behavior is costly. Standard services such as electricity, telephone, and internet, if available, are often inconsistent. Second,

employers often lack the organizational mechanisms required for information collection. For example, in the U.S. case, the Department of Defense, Department of State, and USAID each have separate reporting mechanisms for PSFs in conflict zones (CWTC 2011; Human Rights Watch 2010). Third, because PSFs are not national militaries, PSFs employees are not subject to national and international laws that govern conflict behavior.<sup>24</sup> Instead, PSFs operate within undefined legal conditions where reporting mechanisms have yet to be institutionalized by employers or the global community (Clive and Whyte 2005; Singer 2003b). Finally, shirking is possible as PSFs are hired to provide intelligence and management services of other firms, removing independent government review.

In conflicts establishing if a PSF shirks is difficult due to limited objective performance measures. The uncertainty of conflict situations requires employers to balance contract flexibility and service specificity in each contract. Identifying the proper balance is confounded by PSFs' incentives to overstate the quality and quantity of provided services. In the case of Iraq, additional problems developed as particular PSFs operations were not systematically connected to other projects. For example, PSFs constructed 5 power stations in Basrah in 2005 but the states were not initially connected to the power grid (SIGIR 2007a). In this scenario are PSFs operations measured based on contracted energy production or the actual distribution of power? Additionally, the

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<sup>24</sup> Interviews with various members of the U.S. armed services support this proposition that PSFs in Iraq were outside the U.S. chain of command. Several soldiers recounted that as U.S. Marines they were accountable for each bullet fired in combat but as PSF employees they were not required to report to U.S. military authorities.

dangers in the environment may prohibit inspectors from visiting locations where PSFs are operating. For example, unsafe conflict conditions limited USAID Transition Initiatives inspectors to audit only 32 of 81 randomly selected projects in 2004 and 2005 (SIGIR 2006a).

Corporate structure largely determines information availability which influences shirking potential. Public firms are listed on national stock exchanges where any individual is able to share in ownership. Individually owned firms include all other firms. Publicly traded firms have mandated public disclosure obligations that individually owned firms lack. Publicly traded firms provide more information due to public filings, operational updates and investor meetings than individually owned firms. The increased information level allows employers to better structure contracts, reducing uncertainty in the incomplete contracting environment compared to individually owned firms.

Two factors of corporate structure influence a PSFs information level and likelihood to shirk. First, publicly traded firms are required to disclose information to be publicly listed. Filing publicly requires information on business history to be disclosed to investors and the national government. Because public firms have undergone this vetting process, the baseline level of information for publicly owned firms is higher than for individually owned companies.<sup>25</sup> Additionally, when publicly traded firms purchase other companies, such as L3 Communication's purchase of Titan in 2005, information is

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<sup>25</sup> Firms have incentives to provide information in order to reduce the issuance costs of the initial public offering (Ang and Brau 2002; Callen, Livnat and Segal 2006). Publicly traded firms are also vetted during additional public offers.

disclosed about firm performance and capability. Information disclosure is not universally beneficial as Titan's alleged involvement in prisoner abuse at Abu Ghraib became a media nightmare for L3, which subsequently renamed the newly acquired unit in 2007.

Second, public firms are required to declare profits, government contracts, gross sales, and numerous other details at regular intervals. These disclosures are absent in individual owned firms. Additionally, individually owned firms are not required to provide details of the firm in terms of the compensation packages for executives, employees or investors. PSFs are headquartered in dozens of countries, but the disparity between national disclosure laws is considerably less than differences between publicly traded and individually owned. Regular profit reports provide the government easily accessible information on the operations of the firm. A firm typically has more than one employer, potentially even in the same conflict, and, thus, maintains multiple contracts which may or may not be known to other employers. The declaration of profits and contracts required of public firms are a potential liability that individual firms do not share. For example, negotiations to end the most expensive logistics contract in history—KBR's Logistics Civil Augmentation Program (LOGCAP) III with U.S. DoD—is estimated to cost 500 USD million and 13 years (McElhatton 2013). That is on top of the estimated \$38 billion in contracted compensation. Public filings assist in overcoming these limitations, as publicly traded firms are more transparent on regional business operations during public filings than are individually owned firms.

In sum, information on the business operations of firms reduces uncertainty between firms and employers that arise due to incomplete contracting. Consequently, publicly traded firms provide more information, reducing the likelihood of shirking as government regulation is easier. In Iraq, PSFs shirking is based on level of law and order in the country. Because one element of law and order is to be relatively free from violence, insurgent attacks and civilian fatalities are proxy measures (Jones et al. 2005). When interpreting coefficients for public and individual firms, negative coefficients represent improvements in efficiency (reductions in shirking) while positive coefficients represent decreases in efficiency (increases in shirking). I formalize the general theoretical expectation that publicly traded and individually owned firms have opposing impacts on violence in Iraq.

*Hypothesis 1a:* In Iraq, individually owned PSFs are more likely to shirk which decreases the likelihood of achieving U.S. objectives of reducing violence.

*Hypothesis 1b:* In Iraq, publicly traded PSFs are less likely to shirk which increasing the likelihood of achieving U.S. objectives of reducing violence.

Do public traded and individually owned companies provide different services in conflict environments? The contracting data used in this research is from the U.S. Department of Defense (DoD). It provides information on 17 types of services provided by PSFs in the Conflict. Examining the individual services provided PSFs divided by corporate structure reveals that both public and individually owned firms competed in each service sector. Table 2 outlines the corporate structure of each firm that provided a particular service. Each individual contract may have multiple services associated with

it; hence, the total number of services exceeds the original 1,902 total contracts.

Individually owned firms comprise the larger percentage of all service provided in Iraq.

**Table 2 Contracted Service Total by Corporate Structure**

Service	Public PSF	Individual PSF	Service Total
Armed	39	53	92
Ammunition	8	48	56
Billetting	270	529	799
Electricity	184	339	523
Fuel	279	495	774
Laundry	213	384	597
Mess	358	634	992
Medical	447	519	772
MWR	216	447	663
Postal	281	548	829
Post Exchange	287	559	849
TA-50 Personnel Eq.	90	179	269
Toilet/Shower	201	392	593
Vehicles	180	287	567
Waste Management	197	388	584
Water Supply	264	459	723
Land	188	317	505

Endogeneity concerns are further mitigated by the haphazard contracting procedures used in Iraq (Hutton and Solis 2009). Contracts rarely specified the exact geographic location where the services would be provided, limiting firms' ability to select provinces. Plus, the demand for security services was excessive throughout the conflict resulting in confusion and inconsistent application of contracting procedures (Cancian 2008; DiNapoli 2012; GAO 2008c; Grasso 2010; SIGIR 2004). Moreover, the contacting process in contingency operation differed greatly than most procurement contracts issued by DoD (Berrios 2006; Karpoff, Lee, Valaria 1999). Inconsistent contracting practices plagued the Provisional Authority in Iraq as well (SIGIR 2004). In

Iraq, the contracting procedures and selection of firms was not systematic based on corporate structure, provided services or province location.

### *Research Design*

Data are obtained from various sources, particularly U.S. agencies through Freedom of Information Act filing for the contractors' data. The U.S. Census Bureau provided all Department of Defense (DoD) contracts with PSFs operating in Iraq from January of 2003 to December 2011.<sup>26</sup> The time period covers the entire duration of the U.S.-Iraq conflict which started on March 19, 2003 and ended with the withdrawal of U.S. forces in December of 2011.<sup>27</sup> The data sample includes critical events of the war including the 2004 massacre of Blackwater contractors in Fallujah and the 2007 'Surge' of U.S. military personnel. During this period, DoD issued 1,902 specific contracts for a range of activities including armed security protection, construction, and life support services. Individual contracts may contain multiple service requirements. Firms include both U.S. and non-U.S. headquartered companies. The distribution of publicly traded versus individually owned firms are relatively consistent across services. In each service category, except ammunition where public firms only received approximately 14% of the contracts, public firms received between 33 and 42 percent of all contracts. Public

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<sup>26</sup> Additional contractors operated in Iraq and were employed by other U.S. government agencies or firms, but no systematic data are available.

<sup>27</sup> There are discrepancies in the data concerning the start and end date of the contracts. Approximately 100 of the contracts have a start date of December 14, 2001 with the location being Baghdad. The majority of those contracts, approximately 70 of them, went to Halliburton subsidiary KBR. Existing contracts were either backdated or adjusted to new locations following the invasion of Iraq.

firms received the highest percentage of any category in contracts with armed components where employees possessed firearms with 39 of the 92 total contracts.<sup>28</sup>

The data set is organized in a province--month--year structure. In order to generate unit of analysis, the original data set organized by contracts was expanded to create time-series data for each contract. The start and end month was provided allowing contract duration to be calculated. Private security firms are considered operating in a particular province-month if the firm was contracted for more than fifteen days of the month.<sup>29</sup>

Iraq is divided into 18 different governorates: private security firms operated in 14 of the 18 provinces.<sup>30</sup> In order to generate the province-monthly data set the location provided by the original data set was mapped onto Iraqi locations. In some instances, the province and provided location were the same (Baghdad). In the remaining cases, the province was identified based on the nearest town, base, or outpost.<sup>31</sup> After the initial identification was completed, particular provinces were identified using various online sources and geo-satellite location. When the contract locations included multiple

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<sup>28</sup> It is not possible to identify with certainty the distribution of employees between categories other than armed. The number of weapons allowed is used to measure the number of armed contractors per contract.

<sup>29</sup> The strict coding of firms operating in each month increases the likelihood that the firm was operating during the specific month. For example, a contract from April 5, 2005 to April 5, 2006 is a 12 month contract with April 2005 as the start month for the contract. However, a contract that starts on April 5, 2005 and goes to April 30, 2006 is a 13 month contract with April 2005 as the start month. In the case of the second contract, the additional month accounts for the 25 days the firm operated in April 2006.

<sup>30</sup> Private security firms held contracts in the following fourteen Iraqi provinces: Anbar, Babil, Baghdad, Basra, Diyala, Erbil, Kirkuk, Najaf, Ninawa, Qadissiya, Salah al-Din, Sulaymaniyah, Thi Qar and Wassit. Private security firms were not contracted in in Dahuk, Kurbala, Maysan and Muthanna.

<sup>31</sup> Initial identification of bases and forward operating locations utilized the GlobalSecurity database of U.S. military installations.

sources, the first location listed is used as the primary location for the contract.<sup>32</sup> Despite the limitations in the data set, it provides the most comprehensive understanding of contractors operating in Iraq to date.

### **Dependent Variables**

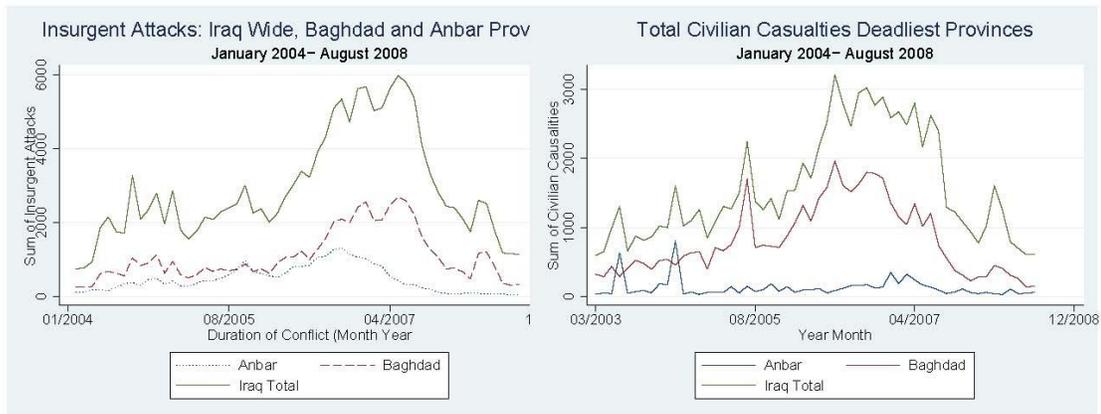
Two dependent variables are used to measure law and order in Iraq. The first variable, *attacks*, is the total number of insurgent attacks per province-month. The data are from declassified U.S. Central Command reports. The *attacks* variable's sample is from January 2004 to August 2008. An insurgent attack is violence perpetrated against U.S., Coalition, and Iraqi government locations and personnel and may include roadside bombs, ambushes, and mortar attacks (Hoffman 2006; Schmitt and Sanger 2003; Petraeus and Amos 2006). The total number of attacks during the nine year conflict was 16,660 with the highest concentration occurring in Anbar and Baghdad provinces. Figure 1 depicts the total number of Iraq attacks. Numerous provinces had limited numbers of attacks during the conflict, relative to Baghdad and Anbar. Arbil, Dahuk, Muthana, and Salaymaniyah had no months with more than 35 attacks. Qadisiyah province—located between Baghdad and Basra—largely escaped violence until 2007 when attacks spiked from 33 in February of 2007 to 142 in April of 2007. Even when considering a province that experienced comparatively limited violence, such as

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<sup>32</sup> There are two sources of uncertainty that limit the total number of contract observations. First, 92 contracts are Iraq wide and are unable to be coded in a particular province. Second, the locations of numerous contracts are listed as classified. Finally, the inability to identify the province based on the information provided in the data set combined with the other unidentifiable provinces generates 279 contracts that cannot be geographically located. The contracts listed account for approximately twenty percent of the original data.

Karabala, both the monthly maximum (64) and the monthly average number of attacks (7.6) are high.

**Figure 1 Insurgent Attacks and Civilian Casualties in Iraq: 2003-2008**



The second dependent variable, *civilian casualties*, is the total number of Iraqi civilian casualties that occurred during coalition operation involving Iraqi personnel in each province--month. The Iraq Body Count, a British think tank, provides the data for the civilian casualty counts. The Iraq Body Count has documented 115,515 individuals killed as a result of the war in Iraq (Iraq Body Count 2012). The counts used are actual documented cases of individual casualties, not estimated civilian casualty totals.<sup>33</sup>

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<sup>33</sup> Considerable discrepancies exist between competing organizations concerning the total number of Iraqi civilian casualties. For example, *The Lancet* generated the largest estimates of Iraqi civilian casualties with a range between four and eight hundred thousand deaths between 2003 and 2006 (Burnham et al 2006; Roberts et al. 2004). Lower estimates include the Associated Press approximation of 35,000 dead and 40,000 wounded between 2005 and 2008. The Iraq Body Count provides two measures of civilian casualties in Iraq: one capturing the number of civilian casualties in coalitions operations when Iraq forces are present and when Iraq forces are not. I utilize the variable of when Iraqi forces are not present for the results. Additional robustness checks using the alternative measure are substantively similar.

Three points of clarification are required concerning the dependent variables. First, the coefficients for public and individual firms capture the degree to which shirking influences conflict outcomes. Negative coefficients represent efficiency which results in decreases in violence while positive coefficients increased shirking and increased violence. Second, the measures do not imply that PSFs directly generate insurgent attacks or target civilians. The analysis is focusing on the rule of law in Iraq and neither the raw data nor the results indicate that PSF deliberately instigate violence against civilians. Second, coalition operations are not restricted to combat operations as securing neighborhoods, convoys, supply distribution, and other activities are included in the casualty measures. Consequently, the analysis examines the influence of private security firms on law and order in Iraq as a function of the level of violence.

### **Key Explanatory Variables**

Two variables, *Public Employee Total* and *Individual Employee Total*, capture the concept of firm involvement in Iraq. The variables capture the number of employees employed by publicly traded and individually owned firms in each province per month. Publicly traded firms accounted for 777 contracts while individually owned firms included 1104 contracts. The variables are an aggregation of the recorded number of employees from each contract in each province per month. Despite public firms accounting for approximately 41 percent of all contracts (777 of the 1902), average employees per contract were similar between public (64 employees) and individually owned firms (72 employees). To construct each variable each firms was identified as either publicly traded or individually owned. Because the sample of firms includes both

U.S. and non-U.S. headquartered firms, a firm listed on any national stock exchange was coded as publicly traded. As an additional check to ensure correct ownership identification, national databases that require annual filings were searched. The use of employee totals, as compared to alternative measures such as the number of service providers in each province, was done to capture the magnitude of firm involvement in Iraq. Both employee variables are logged.

### **Control Variables**

The literature suggests a number of control variables that could affect insurgent attacks and civilian casualties. Province specific data is not available for several of the control variables. In some instances, only annual, as opposed to monthly, temporal variation is available. Despite the limitation in exact identification of province level values controls for economic, political, and security characteristics of the conflict are essential. PSFs both influence and are influenced by the conflict dynamics as PSFs were contracted to provide social services such as water and electricity and provide advanced training for Iraqi security forces.

*Economic Variables: Net ODA Per Capita:* Foreign economic assistance, measured as Official Development Assistance, is the annual net aid received per capita measured in current U.S. dollars. The measure is from the World Bank's World Development Indicators (World Bank 2011) and varies only by year. Foreign aid—though promoting growth in post-conflict states (Collier and Hoeffler 2004)—has limited or negative effects on democratization (Knack 2004; Djankov, Montalvo and

Reynal 2008). Controlling for foreign aid's cross-cutting impact on society, the research design reduces the influences of aid shocks to Iraq.

*Electricity Production:* Electricity production is measured as the monthly average megawatts generated in Iraq from prewar levels to July 2011. The measure does not vary by province. Electricity production is an indicator of a country's development as conflict often destroys infrastructure.<sup>34</sup> The variable is from the Brookings Institute's Iraq Index and has been logged. Additionally, PSFs were specifically contracted to produce and distribute electricity.

*Oil Exported:* Exporting oil is a major source of income for Iraq. Oil exports are expected to have competing effects on conflict outcomes in Iraq. Oil dependence, even for functioning states, is associated with weaker institutional capabilities than non resource dependent states (Chaudhry 1989; Karl 1997; Ross 1999). Fearon and Laitin (2003) demonstrate that high oil dependence increases the likelihood of civil war. However, oil wealth is critical for financing reconstruction and has been shown to increase regime durability (Smith 2004). The Brookings Institute's Iraq Index provides monthly values for crude oil exportation from Iraq in millions of barrels/day from an estimated pre-war level to July 2011. The variable has been logged.<sup>35</sup>

*Security Variables:* Four measures of the security forces operating in Iraq are used in the analysis. First, *U.S. Military* is the monthly total of U.S. military personnel

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<sup>34</sup> See Collier (2003) Doyle and Sambanis (2000) and Fortna (2004) for further discussion.

<sup>35</sup> The Iraq Index values are compiled from weekly status reports issued by the U.S. Department of State. Brookings also provides data on the volume of oil produced. Exported oil provides direct funding to the government, which, in turn, may increase the provision of public goods in form of increased security or public services to the population. The volume of oil produced is used as a robustness check.

(in hundred thousands) operating in Iraq including National Guard and reserve forces between May 2003 and December 2011. Second, *Coalition Forces* is the monthly total of coalition military personnel, excluding U.S. forces, in Iraq per month. *National Guard* and *Iraq Police* are the monthly totals of trained and deployed Iraqi personnel. The Iraqi security information ranges from prewar estimates in 2003 to December 2008. Each variable is from the Brookings Institute's Iraq Index and tabulated from numerous U.S. and Iraqi government sources and varies by month but not by province. The terrorism literature suggests that the presence of foreign forces increases the likelihood of transnational attacks (Pape 2003; Azam and Thelen 2010) which are conceptually similar to insurgent attacks in Iraq. However, increases in the ability of the state to provide security increases the ability of a state to counter an insurgency (Fearon and Laitin 2003).<sup>36</sup> Each variable is logged.

*Political Controls: Preelection* is coded as one for the election and the preceding two months and zero otherwise. Parliamentary elections were held during the sample in January 2005 and March 2010. The utility of political elections to reduce the likelihood of conflict reemerging has been questioned (Collier:2009, Collier, Hoeffler and Soderbom 2008); moreover, election violence may escalate if the factors that precipitated the violence are not resolved prior to the election (Paris 2004). However,

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<sup>36</sup> Rosenau (2008) argues the police reform is critical for successful repression of an insurgency. However, he argues that Iraq as of 2008 had not experience successful police reform. The number of Iraq security forces is based on Iraq's Ministry of Defense. The raw count of forces does not quantify the quality of the forces as sectarian violence penetrated the forces.

elections represent political progress, are often objectives of aid agencies, and are often required to initiate the peace process in post conflict states (Reilly 2002).

*Temporal Controls:* The nine year conflict experienced variations in the levels of violence, the number of military personnel and types of counterinsurgency policies. The initial Coalition invasion witnessed significant increases in insurgent attacks and civilian casualties. In order to control for these various temporal dependencies two temporal controls are used. First, *ConflictStart* is a count variable that ranges from 0 to 106 for each month of the conflict was generated for each province in the analysis. Second, year dummies are used to capture to model the progression of the conflict. For example, violence levels peaked in 2007 followed by four years of gradual reductions in violence. The year dummies are not reported in the main table.

### **Estimation Technique**

The dependent variables—insurgent attacks and civilian casualties—are count variables that demonstrate over-dispersion. The unit of analysis is province-year-month. As a result, negative binomial regression is used (Long 1997).<sup>37</sup> Fixed effects for each province are used in the analysis.<sup>38</sup> Because previous levels of law and order may influence the explanatory variables, particularly the number of PSFs in Iraq;

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<sup>37</sup> Potential under-reporting bias found terrorism research is not applicable for Iraq as the data generating process is not linked to regime type. Scholars continue to use negative binomial regress to model terrorism (Li 2005; Li and Schaub 2004; Young and Findley 2011) despite recognition of the under-reporting biases (Drakos and Gofas 2006; Savun and Phillips 2009).

<sup>38</sup> The Hausman test fails to reject the null hypothesis across various specifications of the model suggesting the differences between estimation techniques is minimal. Results are substantively similar when using random effects.

consequently, all explanatory variables are lagged one month behind the dependent variable to control for possible simultaneity bias.

### *Results*

Tables 3&4 contain the results examining PSFs' tendency to shirk in Iraq. Models 1 and 2 provide the benchmark test for hypothesis 1. Even numbered models examine insurgent attacks while odd number models analyze civilian fatalities. Additional control variables were added to models 3&4 and 7&8. Models 5-8 contain results when Baghdad is not included in the estimation sample. Baghdad is empirically and theoretically unique. Baghdad, as Iraq's capital and major urban center, provides insight into the influence of PSFs in urban areas. Urban area operations require different military capabilities and oversight in order to avoid collateral damage (Russel 1996). Whereas other Iraqi provinces contain urban areas, Baghdad province is only urban. Empirically, Baghdad accounted for the largest portion of the key indicators: private security companies, insurgent attacks, and civilian casualties.<sup>39</sup>

The results in models 1 and 2 generally support hypothesis 1. *Individual Employee* is positive and significant for both dependent variables which demonstrate individually owned firms' propensity for shirking and are associated with increases in violence. Comparatively, *Public Employee* are less likely to shirk, as captured by the negative coefficient, despite only being significant for civilian casualties. Models 3&4 include additional control variables and are used for substantive interpretation of the

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<sup>39</sup> Baghdad province accounted for approximately 24% of private security firm contracts (465/1902), approximately 31% (5,235/16,660) of insurgent attacks, and approximately 37% (60972/162,932) of the civilian casualties.

results.<sup>40</sup> When examining insurgent attacks, a standard deviation (approximately 2,052) increase from the mean (approximately 1,510) number of employees from individually owned companies is associated with an increase in the likelihood of attacks by approximately 6% when holding other variables at their means. A standard deviation (1,672) increase from the mean of employees from publicly traded firms (601), however, is associated with an approximately 4% decrease in the likelihood of insurgent attacks when holding other variables at their means. When considering civilian casualties, increases from the mean to the maximum value of employees from individually owned firms are associated with a 53% increase in the likelihood of an insurgent attack. Conversely, increases from the mean to the maximum value of employees from publicly traded firms are associated with an 11% reduction in the likelihood of an insurgent attack.

Considering the high level of PSFs employment in Iraq the effects of PSFs are considerable when examining civilian fatalities. Baghdad witnessed the highest number PSFs in December of 2006 when approximately 17,373 employees from individual firms and 18,767 employees from publicly traded firms operated in the province. When moving from the mean to the maximum number of employees from individually owned firms, there is a 59% increase in the likelihood of civilian fatalities. Similar increases for employees from public firms, however, are correlated with a 38% decrease in the

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<sup>40</sup> The Bayesian Information Criterion suggests that despite the addition of four variables, model 2 is the preferred specification (Model 1 BIC 6325.571, Model 2 BIC 6319.195). F-tests were conducted in each model to determine if public and private employees had no simultaneous effect on the dependent variable. The variables are jointly significant across all model specifications.

likelihood of civilian fatalities. Since publicly traded and individually owned firms provided similar services in Iraq, the disparity of the results are substantial. Because it is not possible to directly measure what, if any, additional benefits employment of PSFs provide, the results suggest that publicly traded firms are less likely to shirk than are individually owned firms.

**Table 3 The Effects of Public and Individual Firms Operating in Iraq (Part A)**

	Model 1 Insurgent Attacks	Model 2 Civilian Casualties	Model 3 Insurgent Attacks	Model 4 Civilian Casualties
Individual Employee	0.107 <sup>t</sup> (0.024)	0.279 <sup>t</sup> (0.040)	0.100 <sup>t</sup> (0.024)	0.283 <sup>t</sup> (0.040)
Public Employee	-0.027 (0.022)	-0.016 <sup>t</sup> (0.033)	-0.037 (0.022)	-0.120 <sup>t</sup> (0.032)
U.S. Military	0.003 (0.003)	0.013** (0.006)	0.004 (0.003)	0.012* (0.007)
Coalition Forces	0.065 <sup>t</sup> (0.010)	0.074 <sup>t</sup> (0.010)	0.074 <sup>t</sup> (0.010)	0.031 (0.020)
Iraq Nat. Guard	-0.097 (0.229)	-0.055 (0.270)	-0.055 (0.270)	0.079 (0.191)
Conflict Start	0.048 <sup>t</sup> (0.015)	-0.013 (0.020)	0.057 <sup>t</sup> (0.018)	0.014 (0.025)
Net ODAPc	-20.62 <sup>t</sup> (3.630)	-8.507 (6.494)	-21.56 <sup>t</sup> (3.748)	-10.61 (6.728)
Iraq Police			-0.148* (0.076)	-0.330** (0.154)
Oil Exported			0.335* (0.183)	0.424 (0.270)
Pre-Election			-0.277* (0.157)	-0.270 (0.259)
Electricity			-1.179 <sup>t</sup> (0.396)	-1.713** (0.779)
Constant	117.3 <sup>t</sup> (21.67)	44.23 (37.97)	132.7 <sup>t</sup> (23.41)	73.44 (41.4)

**Table 3 Continued The Effects of Public and Individual Firms Operating in Iraq (Part A)**

	Model 1 Insurgent Attacks	Model 2 Civilian Casualties	Model 3 Insurgent Attacks	Model 4 Civilian Casualties
Log Likelihood	-3124.3	-1781.6	-3114.6	-1775.1
Wald Test ( $\chi^2$ )	448.7	92.18	481.8	101.9
Observations	615	706	615	706

Standard errors parentheses  
Two Tailed test: <sup>t</sup> p<0.001, \*\* p<0.01, \* p<.05

**Table 4 The Effects of Public and Individual Firms Operating in Iraq (Part B)**

	Model 1 Insurgent Attacks No Bagh.	Model 2 Civilian Casualties No Bagh.	Model 3 Insurgent Attacks No Bagh.	Model 4 Civilian Casualties No Bagh.
Individual Employee	0.085 <sup>t</sup> (0.024)	0.245 <sup>t</sup> (0.040)	0.007 <sup>t</sup> (0.024)	0.248 <sup>t</sup> (0.041)
Public Employee	-0.120** (0.023)	-0.153 <sup>t</sup> (0.033)	-0.050** (0.023)	-0.169 <sup>t</sup> (0.034)
U.S. Military	0.002 (0.004)	0.012* (0.007)	0.003 (0.004)	0.010 (0.007)
Coalition Force	0.067 <sup>t</sup> (0.010)	0.023 (0.020)	0.076 <sup>t</sup> (0.011)	0.034 (0.021)
Iraq Nat. Guard	-0.133 (0.249)	-0.139 (0.191)	-0.090 (0.294)	0.033 (0.210)
Conflict Start	0.051 <sup>t</sup> (0.017)	-0.010 (0.022)	0.060 <sup>t</sup> (0.030)	0.026 (0.027)
Net ODAPc	-21.88 <sup>t</sup> (3.924)	-11.63 (7.131)	-22.87 <sup>t</sup> (4.064)	-15.06** (7.360)
Iraq Police			-0.151* (0.083)	-0.293** (0.165)
Oil Exported			0.341* (0.200)	0.513 (0.296)
Pre-Election			-0.282* (0.171)	-0.302 (0.282)
Electricity			-1.190 <sup>t</sup> (0.432)	-2.139** (0.779)

**Table 4 Continued The Effects of Public and Individual Firms Operating in Iraq (Part B)**

	Model 1 Insurgent Attacks No Bagh.	Model 2 Civilian Casualties No Bagh.	Model 3 Insurgent Attacks No Bagh.	Model 4 Civilian Casualties No Bagh.
Constant	117.3 <sup>t</sup> (21.67)	44.23 (37.97)	132.7 <sup>t</sup> (23.41)	73.44 (41.40)
Log Likelihood	-2757.1	-1533.6	-2748.7	-1527.2
Wald Test ( $\chi^2$ )	381.5	81.84	409.1	92.08
Observations	564	647	564	647

Standard errors parentheses

Two Tailed test: <sup>t</sup> p<0.001, \*\* p<0.01, \* p<.05

The results are substantively similar when Baghdad is not included in the sample. Models 5-8 demonstrate that the previous results are not solely determined by Baghdad province. The one major difference is that the effects of *public employee* are negative and significant across each specification. Variance in statistical significance between Model 1 and 5 for the *public employee* variable shows that Baghdad province influenced public firm effectiveness. However, data limitations preclude deciphering if the lack of significance is due to differences between urban and rural operations. Generally, the results demonstrate that the main results are not sensitive to Baghdad as an outlier and that potential differences between urban and rural provinces are minimal.

U.S. military personnel and coalition forces are associated with increases in insurgent attacks and civilian casualties. *U.S. Military* barely ascertains statistical significance at the .1 level when analyzing civilian fatalities; the variable is not significant when examining insurgent attacks. *Coalition Forces* has a positive and significant effect on insurgent attacks but not civilian fatalities. Substantively

interpreting the results from model 3 and 4, a standard deviation (39,550) in the U.S. military personnel from the mean (121,000) is associated with an 88% increase in the likelihood of an insurgent attack. Similarly, a standard deviation (10,780) increase in coalition forces from the mean (10,370) is associated with a 14% increase in the likelihood of an insurgent attack. When considering civilian fatalities, standard deviation increases in U.S. forces are associated with 47% increase in the likelihood of a civilian fatality in the province in a particular month. One explanation for this result is that U.S. military personnel, particularly later in the conflict, were stationed and conducted operations in the most hostile provinces of Iraq. The results do not suggest that U.S. military personnel actively targeted civilians. Rather, the results suggest that, unlike PSFs that cannot be ordered into violent provinces, the U.S. military and Coalition forces were more likely to be sent to more hostile province.

Economic development indicators influence law and order in Iraq. Oil exports increase the level of violence across various model specifications and dependent variables. There are two potential explanations for the positive influence. First, the money from oil sales was not distributed equally amongst the provinces due to differences in ethnicity. Consequently, oil revenue may have indirectly inflamed ethnic tension within the country. Second, oil revenue formed the basis of government revenue during the period. Yet, difficulty in establishing a ruling coalition reduces the accountability of the government's inflow of funding, potentially producing corruption.<sup>41</sup>

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<sup>41</sup> Additional model specifications using Transparency International's corruption measure as a control variable produced substantively similar results.

Improvements in quality of life measures in Iraq (ODApC and electricity produced) positively influenced law and order. Under most model specifications, both variables remain significant and negative. The incident response ratios were calculated from each coefficient to assist in substantive interpretation for these results. Substantively, quality of life improvements are associated with decreases in the the likelihood of insurgent attacks by 151% and 66% for unit increases in electricity and ODApC, respectively. These results demonstrate that improvements in quality of life measures can have a large substantive impact on law and order in Iraq. The results are substantively similar for civilian casualties.

Political development, measured by *Pre-Election* had an inconsistent effect on law and order. Elections have a negative and significant effect on insurgent attacks but are not significant for civilian fatalities. Result discontinuity is potentially due to the increased security prior to elections. Additional security reduces the opportunity for attacks, which inadvertently force insurgents to make each attack more lethal.

In sum, the results support hypothesis 1 that publicly traded and individually owned firms have different propensities for shirking. Employees from public firms, despite conducting similar operations and missions, decrease the level of violence while individually owned firms have the opposite effect. The reductions in available information on the firms improves reduces uncertainty in the incomplete contracting environment. Publicly traded firms are better able to reduce violence and improve law and order in Iraq than are individually owned firms. However, one objection to the theoretical argument and statistical results are that public firms are more risk averse than

are individually owned firms. As a result, a selection effect occurs whereby the outcomes examined are not the result of differences in firm transparency, but rather contract selection. I address this concern in the next section.

### *Sensitivity Analysis: PSFs and Risk*

This section utilizes armed contractors to demonstrate that the previous results are not an artifact of selection effect between publicly traded and individually owned firms. If differences between public and individual PSFs are based on selection effects instead of corporate structure, then we would expect only privately owned firms to operate as armed contractors due to the following forms of risk. The first form of risk involves firms' decisions to pursue contracts involving armed contractors. Armed personnel are more likely to be exposed to violence when conducting operations and, thus, pose a higher liability firm due to insurance expenses. Insurance costs for armed contracting is higher than for non-armed contractors. Because public firms are accountable to the public, specifically stock holders, the potential consequences of a scandal involving armed personnel is more damaging for public than individual firms. As a result, if public firms are more risk averse, they should be more selective in bidding on contracts. However, both public and individually owned firms participated in armed operations with similar locations and duties during the Iraq conflict. The data set contains recognized individually owned armed PSFs such as Aegis, Blackwater, Dyncorp, and Triple Canopy. Armed publicly traded firms such as General Dynamics,

L3 Communications, Kellogg, Brown & Root, Northrop Grumman, Tetra Tech, and Renaissance also received contracts.<sup>42</sup>

Two new variables, *Public Armed Employee* and *Individual Armed Employee*, are generated to capture the number of armed employees from each corporate structure operating in a particular province—month. Both variables are logged. Publicly traded firms received 39 contracts that included armed personnel while individually owned companies received 53 from the U.S. Department of Defense. The proportion demonstrates that the corporate structure is not a limiting factor in receiving armed contracting.<sup>43</sup> The variables are measured using the number of weapons the company was authorized to issue in Iraq. Armed is the only service category that identifies the number of employees working in that section.

Most firms behaved professionally in Iraq, despite the reputation of PSFs as being mercenaries for hire. Thurnher (2008) argues that Blackwater, perhaps the most

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<sup>42</sup> The data set provides details on 17 different services provided by PSFs during the period and includes information on whether firms were armed or not. The number of armed contractors during the conflict, 93 cases total with approximately 8,446 private contractors armed during the conflict. Armed contractors represented approximately 4.8% of issued contracts and 11 percent of the total employees in Iraq during the period. The armed contractor data demonstrates some of the limitations in the data set. There are discrepancies in the total number of contractors employed at any one time in during the conflict. Throughout the entire length of the conflict, the data only identifies 76,499 individuals working in Iraq. That is a considerable under-reporting based on the approximately 180,000 contractor high reported in U.S. domestic media (Miller 2007; Broder 2007). Approximately 50,000 of them were operating as private security operatives. Government figures for private security contractors in Iraq as of March 31, 2011 was 28,000 (Schwartz 2011). The significant underreporting poses significant challenges to the accuracy of the estimates presented. However, exact accounting of private firm operating in Iraq is unlikely to be known and the existing data are the most comprehensive available. Inaccurate data artificially inflates standard errors, reducing the likelihood of establishing statistical significance. Thus, the presented results overcome data limitations and are robust to multiple model specifications.

<sup>43</sup> Similar numbers of contracts does not indicate that the firms actually performed similar duties as more detailed information on the conduct of specific firms is classified or otherwise currently unavailable. However, the measure captures how corporate structure influences decisions to pursue contracts that include armed personnel and thus is suitable for this analysis.

notorious PSF operating in Iraq, was highly professional when conducting operations.<sup>44</sup> However, pursuit of a particular objective, such as protection of a dignitary—a stereotypical PSF operation—may result in alienating the civilian population through aggressive tactics including forcing cars off roads, high speed convoys, manhandling civilians, and threatening violence. A firm conducting such operations may successfully complete the contract, but may have a negative impact on law and order. Thus, the manner in which firms provide services can be as important as providing the services. When information on the PSF is high due being publicly traded, armed PSFs are less likely to shirk and, consequently, are expected to reduce violence. The opposite is expected when PSFs are individually owned.

**Table 5 The Effects of Armed Public and Individually Owned Firms (Part A)**

	Model 9 Insurgent Attacks	Model 10 Civilian Casualties	Model 11 Insurgent Attacks	Model 12 Civilian Casualties
Individual Employee	0.034** (0.017)	0.134 <sup>t</sup> (0.028)	0.029 <sup>t</sup> (0.016)	0.134 <sup>t</sup> (0.028)
Public Employee	-0.031 (0.022)	-0.066 <sup>t</sup> (0.023)	-0.034** (0.022)	-0.073 <sup>t</sup> (0.023)
U.S. Military	0.002 (0.003)	0.014 (0.018)	0.003 (0.003)	0.013* (0.007)
Coalition Forces	0.065 <sup>t</sup> (0.010)	0.006 (0.018)	0.074 <sup>t</sup> (0.010)	0.026 (0.020)

<sup>44</sup> Interviews with several U.S. military personnel confirmed this intuition. On multiple occasions individuals stated that while on operations, employees from PSFs were highly professional and proficient. However, accounts of misconduct when not on operations, failure to adhere to orders, and overly aggressive tactics while on operations were common.

**Table 5 Continued The Effects of Armed Public and Individually Owned Firms (Part A)**

	Model 9 Insurgent Attacks	Model 10 Civilian Casualties	Model 11 Insurgent Attacks	Model 12 Civilian Casualties
Iraq Nat. Guard	-0.169 (0.229)	0.084 (0.179)	-0.145 (0.276)	0.004 (0.020)
Conflict Start	0.052 <sup>t</sup> (0.016)	-0.017 (0.020)	0.061 <sup>t</sup> (0.019)	0.010 (0.025)
Net ODAPc	-21.14 <sup>t</sup> (3.644)	-6.435 (6.520)	-21.84 <sup>t</sup> (3.748)	-8.106 (6.744)
Iraq Police			-0.159* (0.076)	-0.314** (0.153)
Oil Exported			0.334* (0.187)	0.476* (0.277)
Pre-Election			-0.317** (0.161)	-0.270 (0.259)
Electricity			-1.253 <sup>t</sup> (0.399)	-1.718** (0.783)
Constant	121.7 <sup>t</sup> (21.76)	34.28 (38.14)	136.5 <sup>t</sup> (23.20)	60.88 (41.47)
Log Likelihood	-3131.8	-1799.6	-3121.1	-1792.8
Wald Test ( $\chi^2$ )	4304.4	72.46	468.2	85.57
Observations	615	706	615	706

Standard errors parentheses

Two Tailed test: <sup>t</sup> p<0.001, \*\* p<0.01, \* p<.05

**Table 6 The Effects of Armed Public and Individually Owned Firms (Part B)**

	Model 13 Insurgent Attacks No Bagh.	Model 14 Civilian Casualties No Bagh.	Model 15 Insurgent Attacks No Bagh.	Model 16 Civilian Casualties No Bagh.
Individual Employee	0.029 <sup>t</sup> (0.017)	0.121 <sup>t</sup> (0.029)	0.024 (0.017)	0.120 <sup>t</sup> (0.029)
Public Employee	-0.047** (0.016)	-0.084 <sup>t</sup> (0.026)	-0.050 <sup>t</sup> (0.016)	-0.091 <sup>t</sup> (0.026)
U.S. Military	0.002 (0.004)	0.012 (0.007)	0.003 (0.004)	0.010 (0.007)

**Table 6 Continued: The Effects of Armed Public and Individually Owned Firms****(Part B)**

	Model 13 Insurgent Attacks No Bagh.	Model 14 Civilian Casualties No Bagh.	Model 15 Insurgent Attacks No Bagh.	Model 16 Civilian Casualties No Bagh.
Coalition Forces	0.064 <sup>t</sup> (0.010)	0.010 (0.020)	0.072 <sup>t</sup> (0.011)	0.022 (0.021)
Iraq Nat. Guard	-0.200 (0.252)	0.062 (0.197)	-0.163 (0.298)	-0.056 (0.217)
Conflict Start	0.053 <sup>t</sup> (0.017)	-0.015 (0.022)	0.061 <sup>t</sup> (0.020)	0.018 (0.028)
Net ODAPc	-21.74 <sup>t</sup> (3.893)	-8.509 (7.121)	-22.23 <sup>t</sup> (4.001)	-10.88 (7.365)
Iraq Police			-0.155* (0.082)	-0.270* (0.163)
Oil Exported			0.351* (0.202)	0.562 (0.163)
Pre-Election			-0.319* (0.173)	-0.335 (0.295)
Electricity			-1.186 <sup>t</sup> (0.430)	-1.943** (0.848)
Constant	125.4 <sup>t</sup> (23.23)	46.69 (41.66)	138.3 <sup>t</sup> (24.94)	783.67 (45.26)
Log Likelihood	-2760.3	-1549.3	-2751.2	-1543.1
Wald Test ( $\chi^2$ )	378.8	62.64	409.9	75.23
Observations	564	647	564	647

Standard errors parentheses

Two Tailed test: <sup>t</sup> p<0.001, \*\* p<0.01, \* p<0.05

Models 9-16 in Tables 5&6 evaluate the influence of armed PSF in Iraq, and models 9&10 in Table 5 provide baseline support of hypothesis 1. The *Armed Public Employee* variable is negative and statistically significant while *Armed Individual Employee* variable is positive and significant. Using models 1 and 2 and holding other variables at their means, a standard deviation (51 employees) increase in the number of armed employees from public firms from its mean (204) is associated with an

approximate 8% decrease in the likelihood of an attack and 13% decrease in the likelihood of a civilian casualty. However, a standard deviation increase in the number of armed employees from individually owned firms is associated with an approximate increase in the likelihood of an attack by 4% and civilian casualties by 16%. The results indicate that firms' approach to risk influences business decisions but not systemically in contingency operations.

Second, firms may incorporate risk in contract selection based on previous levels of violence in a province. Risk averse firms may systemically seek provinces with lower levels of violence. If public firms are more risk averse, then we should expect to see that past insurgent attacks and civilian casualties leverages current contract selection. If individually owned firms are more risk acceptant, than publicly traded firms previous levels of violence are more likely to influence publicly traded firms. When examining PSF involvement in Iraq, a selection effect exists if insurgent attacks and civilian casualties influence firm employment in a province. One approach to dealing with this is to examine publicly traded employees as a percentage of all PSFs employed in each province over time. Provinces that witnessed higher levels of violence experienced relatively consistent levels of publicly traded employees throughout the conflict. For example, public firm employees as a percentage of all employees operating in Baghdad ranged from 34 to 52 percent prior to 2011. Similarly, conflict prone provinces of Basrah, Ninewa, and Salah-al-Din experienced similar percentages of publicly traded employees throughout the conflict. Overall, the highest concentration of publicly traded firms occurred in late 2006 and 2007. The increase in publicly traded firms occurs prior

to the U.S. military personnel increase known as the "surge" which suggests that the deteriorating security situation increased the utilization of public firms. A more rigorous empirical examination was conducted to examine the potential selection effects.

To address this endogeneity concern the two key explanatory variables, *public employee* and *individual employee*, are treated as the dependent variables using levels of violence as explanatory variables. Negative binomial regression with fixed effects is used to examine potential endogeneity. Model specification was consistent with the main estimation including examining the sample with and without Baghdad. The results suggest that firms were not selecting contracts based on differences in risk as the coefficients for attacks and civilian casualties were not significant in numerous specifications. Several lag lengths ranging from 1 to 3 months were examined. PSFs appear to have bid on contracts mostly based potential profitability. Risk is just one of many considerations businesses examine when pursuing contracts. Publicly traded and individually owned firms compete for similar contracts in the same market.

In sum, the results for armed contractors employed through U.S. Department of Defense contracts in Iraq suggest that information on PSFs influenced the establishment of law and order. This additional examination reduces the likelihood that the results are a by-product of biased sampling, as armed employees comprise approximately 11% of the total number of employees in the sample. The results indicate that the decision to arm contractors has serious consequences for the local populations.

Two additional sensitivity analyses were conducted. First, in order to include contracts that were not provincially specified—279 contracts listed either Iraq wide or

classified for contract location—an Iraq wide analysis was conducted. Collapsing the provinces into Iraq reduces the number of observations which limits inclusion of controls variables due to decreases in degrees of freedom. Each dependent variable is lagged and entered into the model in order to control for temporal dependence.<sup>45</sup> Because the level of law and order in Iraq may affect many of the explanatory variables (e.g., PSF employment), all explanatory variables are lagged by one month to control for possible simultaneity bias. Variables for the number of Iraqi security personnel are also included to control for improvements in law and order achieved by Iraqi personnel. The results of the Iraq wide sample are found in Table 7. Models 19-22 are consistent with my theoretical expectations. When including the additional unspecified contracts into the sample, publicly traded firms are associated with a reduction in violence. While individually owned firms are associated with an increase violence levels.

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<sup>45</sup> Previous analysis excludes a lagged dependent variable for both theoretical and methodological reasons. Theoretically, including a lagged dependent variable suggests that the prior month's events cause the current months events. The causal (not correlational) link between time periods is unclear for both civilian fatalities and insurgent attacks. Second, including a lagged dependent variable imposes uniform error structures for each variable in the analysis. This is a problematic assumption that may bias estimation and reduce explanatory power of variables (Achen 2000). Analysis with a lagged dependent variable was completed only as a robustness check.

**Table 7 The Effects of Public and Individual Firm Employees-Iraq Wide Sample**

	Model 19 Insurgent Attacks	Model 20 Civilian Casualties	Model 21 Insurgent Attacks	Model 22 Civilian Casualties
Public Employee	-10.34 <sup>t</sup> (2.74)	-0.33* (0.18)	-4.55 <sup>t</sup> (1.70)	-0.68* (0.41)
Individual Employee	16.23 <sup>t</sup> (4.86)	0.96 <sup>t</sup> (0.18)	9.05 <sup>t</sup> (3.09)	3.18 <sup>t</sup> (0.80)
Attacks	12.5 <sub>E</sub> <sup>-3t</sup> (3.21 <sub>E</sub> <sup>-4</sup> )		5.40 <sub>E</sub> <sup>-4t</sup> (2.37 <sub>E</sub> <sup>-4</sup> )	
Civilian Casualties		2.60 <sub>E</sub> <sup>-3t</sup> (1.20 <sub>E</sub> <sup>-4</sup> )		12.5 <sub>E</sub> <sup>-3t</sup> (3.21 <sub>E</sub> <sup>-4</sup> )
Iraq Nat. Guard			-0.86** <sup>t</sup> (0.42)	-0.65 <sup>t</sup> (0.19)
Iraq Police			-0.48 (0.36)	-0.15 (0.25)
Constant	-68.01 <sup>t</sup> (26.38)	-1.46 (1.42)	-29.31** (12.94)	-11.36** (5.17)
Log Likelihood	-648.2	-586.2	-549.0	-298.7
Wald Test ( $\chi^2$ )	15.90	40.32	9.209	37.20
Observations	96	96	65	65

Standard errors parentheses

Two Tailed test: <sup>t</sup> p<0.001, \*\* p<0.01, \* p<0.05

Finally, additional analysis using the count of firms operating in each Iraqi province per month was conducted. The count measures are crude indicators of PSFs operations compared to the employee measures but provide an alternative specification. Using the same models specifications found in models 1-8, the results using the count measures differentiates Baghdad from the rest of Iraq. Substantively, when Baghdad is included in the sample the coefficients for publicly traded and individually owned are in the expected directions but fail to reach statistical significance. This is not surprising as counts do not capture the magnitude of firm involvement. However, when Baghdad is dropped from the sample the count measures for each variable is statistically significant

and in the expected direction under various model specifications. These results bolster the support for hypothesis 1 and demonstrate the significant influence operations in Baghdad province had on the conflict.

### *Conclusion*

PSFs influence the conflict in which they are employed in meaningful ways. The 2003--2011 U.S.--Iraq war thrust PSFs into the public sphere despite decades of international employment. This chapter has investigated the conditions under which PSFs influence conflict outcome. Employer's inability to predict the state of the conflict results in incomplete contracts where the potential for shirking is high due to limited government oversight. Corporate structure influences information levels and the likelihood of PSFs shirking. Publicly traded firms provided more information than individually owned firms. Consequently, publicly traded firms are less likely to shirk contractual obligations, which increases their effectiveness compared to individually owned firms. In Iraq, inefficiency and shirking was associated with increased levels of violence as measured by insurgent attacks and civilian fatalities. The results demonstrate that PSFs are heterogenous, as individually owned and publicly traded firms compete for the same contracts but produce different conflict outcomes. The results suggest that service providers are as important as the services themselves.

PSFs, whether publicly traded or individually owned, must be employed with caution. The results show that mitigating negative effects of incomplete contracting was associated with decreased levels of violence in Iraq. However, PSFs are not a panacea. The numerous human rights abuses and violence perpetrated on civilians attest to the

lack of U.S. government administrative capacity during the conflict. The results do not suggest, however, that employees from individually owned firms actively perpetrated violence against civilians in conflict zones. Rather, the results suggest that when selecting firms to provide services, employers must consider more than simply the bid price associated with a specific contract.

The consequences of increased uses of PSF as substitutes for national militaries remain uncertain. The results suggest caution in the privatization of security services at a time when national governments are facing increasing pressures to cut budgets. The reallocation of funding away from national militaries to PSFs opens the possibility that battlefields will continue to experience large influxes of firms. This chapter continues the discussion of PSF utilization in contingency operations. Further investigation on the factors that shape PSF involvement is necessary, as the global market continues to expand despite evidence of monetary waste, fraud and malfeasance contractor behavior in Iraq (Commission on War Time Contracting 2011).

For international organizations, where the regulation of firms and information flow is even more haphazard than in national militaries, PSFs potentially do more harm than good when information asymmetries are high. Developing contracting strategies that mitigate firm specific uncertainties, potentially by employing higher proportions of publicly traded firms, is one policy alternative. Despite this systematic analysis of private security firms operating in Iraq, our understanding of PSFs impact on conflicts remains limited. The results suggest that international organizations could improve

PSFs operations by shifting resources from individually owned firms to publicly traded firms.

Focusing on the U.S. employment of PSFs in Iraq does not limit the generalizability of the results. Because the U.S. is the world leader in PSF employment, the U.S. utilization of firms is potentially unique. However, this limitation is mitigated as both U.S. and non-U.S. based firms comprise the data and performed operations in Iraq. In particular, Kulak Construction Company, an individually owned company headquartered in Baghdad, received the most contracts for a individually owned firm. Companies headquartered in countries near Iraq constitute the largest contingent of firms after U.S. based firms. The geographic variation in firms employed in Iraq highlights the development of an international market for private security.

Despite the limitations associated with the 2003-2011 U.S.—Iraq conflict focus, the theoretical implications suggest that regulation of agents in conflict has been an under-utilized concept in conflict research. Future research must examine other areas of private security firm involvement in conflict in order to identify how private security firms influence and change the conduct of conflict operations. Private security firms continue to be used in conflict zones around the world.

## CHAPTER III

### MBA'S GO TO WAR: COMPETITION IN THE PRIVATE SECURITY MARKET AND CONFLICT OUTCOMES

#### *Overview*

Does competition shape private security firms' influence on conflict outcomes? PSFs have operated internationally for decades, but the recent U.S.-Iraq war has brought their battlefield presence into public view. Private security firms provide services ranging from armed combatants to life support and soldier entertainment. Yet, contracting in conflict environments presents unique challenges for both the employer and the PSFs. While employers seek to minimize expenses while maximizing services, PSFs seek to maximize profits. PSF shirking is possible as government oversight is usually weak, and measuring PSFs effectiveness is difficult due to few objective performance measures, weak country infrastructure, and limited failure penalties. This creates a dilemma for employers: PSFs are critical for military operations but have the potential to shirk. Two factors—service specific competition and contract structure— influence PSFs' performance which, in turn, impact conflict outcomes. The expectations are tested using data from the U.S.-Iraq war from March 2003 to December 2007. Insurgent attacks are a proxy for the U.S. objective of establishing law and order. I show that competition influences firm performance and law and order in Iraq. The findings have important theoretical and policy implications for those states in the employment of private security firms.

## *Introduction*

International demand for private security services over the last forty years has generated a diverse, globally competitive marketplace. As national governments continue to privatize services (Boyne 1998; Bennett and Johnson 1979; Kiewiet 1991; Miranda and Anderson 1994), private security firms (PSFs) provide services once exclusively provided by the state. National governments that cede critical national security functions to private actors do so based on the expectation that contracting improves efficiency (Dunigan 2011; Leander 2008; Waard 1999).<sup>46</sup> PSFs provide life (water purification, medicine, and electricity), as well as operational (intelligence and combat) and direct combat support to numerous employers. Conflict contracting, however, is susceptible to shirking as volatile environments and limited government oversight results in few objective success measures, weak country infrastructure, and limited penalties for failure.<sup>47</sup> This creates a dilemma for employing governments: how can a national government reduce possible shirking—the degree to which firms fail to perform contracted duties and operations—while employing PSFs to maximize efficiency?

In this research, PSFs are assumed to be rational profit maximizing companies (Akcinaroglu and Radziszewski 2012) that operate in an international market.

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<sup>46</sup> For arguments lauding contracting's efficiency improvements in the provision of public goods, see Alchian and Demsetz 1972), Ferris (1986), Miranda (1994b) and Savas (1977). For expansion of security contracting, see Brooks (2005) and Carmola (2010).

<sup>47</sup> See Minow (2004) for a general discussion on limited government oversight in security services. The U.S. federal government has identified oversight as one of the critical issues facing the use of contractors in contingency operations (Elsea, Schwartz, Nakamura 2008; GAO 2008c, 2010a , 2010b; Schwartz and Swain 2011).

Competition and contract structure are two mechanisms national governments can utilize to minimize PSFs' shirking which, in turn, improves PSFs performance.

First, competitive bidding for contracts between firms decreases the likelihood of shirking as firms face potential replacement for poor performance. Second, contracts provide legal agreement between employers and PSFs. Contracts that increase incentives by setting price limits improve performance while contracts that offer fixed fees for services do not. Bargaining leverage between PSFs and the employer shifts throughout conflicts based on the conditions on the ground. As a result, variation in competition and contract structure are not determined by services but instead determined by conflict volatility. When PSFs improve their services, the likelihood of achieving employer objectives—e.g. ending a conflict, keeping the peace, holding an election, etc—increase. In this study, the level of violence in Iraq is used as a proxy for the establishment of law and order, a stated U.S. military objective of the military intervention.

Competition and contract structure influence PSFs ability to shirk. Competitive bidding improves awarding governments (employers) leverage in two areas. First, bidding PSFs must provide a sufficiently low price to secure the initial contract. Second, intra-sector competition generates replacement potential for poor performance. For example, two PSFs operating in Baghdad where one provides direct armed support (Academi, Triple Canopy, etc.) are not necessarily in competition with a company such as Oshkash that provides vehicle support. Second, business interactions are governed by contracts; as contract structure influences competition and shirking incentives by

establishing the compensation method. Contract structures vary. Firms and employers engage in negotiations, similar to other economic transactions with at least one major difference—the time sensitivity of the interaction.<sup>48</sup> Multiple contract structures are often used to supply the same service, as services and geographic location do not determine contract structure. Contract structures impact PSFs operations by establishing incentives for contract completion. PSFs' that operate under contract structures that utilize performance incentives are less likely to shirk.

The policy implications from this study contribute to our understanding of PSFs' influence on conflict outcomes. The results suggest that PSFs that experience inter-sector competition are more likely to optimally perform in conflict environments. First, the results suggest that increasing the number of PSFs competing for contracts may assist in regulating firm behavior and impacting conflict outcomes. This does not mean that increasing the number of PSFs operating in a conflict is a desirable outcome, as disagreement about the influence of PSFs on conflicts remains an open question (Markusen 2003; Spearin 2004). Second, this study contributes to the growing literature that identifies difficulties in contracting government services. Similar to other forms of government contracting where contracting results are often mixed (Hodge 2000; Prager 1994; O'Tolle and Meier 2004; Ohlsson 2003; van Skyle 2003)<sup>49</sup>, PSFs involvement does

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<sup>48</sup> The disparity between bargaining positions of PSFs and employers is clear when considering the U.S. demand for armored vehicles in Iraq. The extensive use of IED's by insurgent forces in Iraq exposed weaknesses in U.S. armored personnel carriers. In order to rush better armored equipment to the conflict, competitive bidding and certain contract requirements were bypassed (Berrios 2006; Silverstein 2004; Shane and Nixon 2007).

<sup>49</sup> Brown, Potoski and VanSlyke (2006) and Meier and O'Toole (2009) provide meta-analysis on the vast public administration literature.

not necessarily translate into better conflict outcomes. Instead, the analysis identifies the conditions under which PSFs are likely to perform and those that an employer can utilize to leverage PSFs' behavior. The message of the study is not that PSFs are a panacea, but that employers have mechanisms that can leverage PSFs' performance in conflict environments.

In the following section, distinctions between mercenaries and PSFs are clarified in order to separate rational corporate businesses from internationally banned entities. The contracting relationship between employers, in this case the U.S. government, and PSFs is framed using public administration contracting literature. Next, a theory based on service sector competition and contract structure is developed. The theoretical propositions and hypotheses are tailored to the U.S.-Iraq conflict, as the conflict provides the empirical data. A discussion of the Iraq conflict and justification of sample selection introduces the theoretical section, which is followed by the empirical results. Finally, theoretical and policy implications are briefly discussed.

### *Literature Review*

Similar to mercenaries, where fantasies intermingle with reality, PSFs capture the imagination as foreign hired guns maximizing profits. Yet, private security firms are distinct from mercenaries. PSFs often provide experts in military training, information, construction, and logistics such that an MBA can be as beneficial as a gun. PSFs (generally) actively separate themselves from mercenary labels by adopting corporate business models, publicly conducting affairs and informing governments of operations. Indeed, the vast majority of PSFs provide services outside of direct combat (Singer

2003a). The U.N.'s effort to outlaw mercenaries, while employing private security firms (Avant 2004; Ostensen 2011; Spearin 2001; Pingeot2012; United Nations), captures the major distinction between PSFs and mercenaries: mercenaries are illegal organizations that maximize individual short term gain while PSFs are legal organizations that prioritize corporate profits and future business opportunities.

The development of an international market for privatized security has mushroomed over the last century and particularly since 1990 (O'Brien 2000). The international market continues to expand, though estimates of market size and contract profitability vary.<sup>50</sup> National governments continue to be the primary employers of PSFs, though multinational-corporations are increasingly utilizing private actors (Avant 2005; Singer 2003b). Market demand for private security services has extended beyond private policing due, in part, to receding state sovereignty and the privatization of public services.

First, some states' inability to provide public services, particularly security, propelled international market expansion. PSFs provide support to existing government public services and, except in a few high profile cases in Africa (Serewicz 2002), do not challenge a state's sovereignty. Private security firms are often employed to augment public services in conflict environments with weak governments. PSFs may directly influence conflict outcomes by providing combat support or indirectly by providing

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<sup>50</sup> Non-attributable interviews with several regional and marketing directors of PSFs suggested that the actual profit margins for PSFs is small due to the high risk levels associated with international operations. Interviews were conducted during the International Stability Operations Association 2012 Annual Conference.

logistical and intelligence services.<sup>51</sup> Government services continue to be supported and in some cases replaced by private security firms.

Second, global trends to privatize government services now include security. O'Tolle and Meier (2004) state that government contracting was one of the most important management trends of the 1990s, as governments sought to implement market theories to find cost-savings practices (Eggers and O'leary 1995). U.S. private security contracting had already eclipsed public spending on police services by the 1980s in the U.S. (O'Brien 2000). Expanded privatization of civilian related security services (i.e. site protection, police services, location monitoring, private investigators, etc) has become common place (Shearing and Stenning 1981; Verkuil 2007).

Privatization and PSF regulation vary by government. Democracies employ the majority of PSFs globally while the U.S. and the U.K. lead the world in privatization (Harrison 2001; Uttley 2005; Walker and Whyte 2005; Zarate 1998). Contracting out military training services in the U.S. and U.K. dates to the 1950s (Avant 2002). Krishnan (2008) argues that as states emulate the U.S. model, military privatization will proliferate. Despite the rapid increase in employment of PSFs, little national and international regulation exists. Consistent with other economic sectors, in the absence of government regulation, firms attempt market self-regulation (Cashore 2003; Cutler, Haufler and Porter 1999; Rudder 2008). The private security industry's creation of the International Stability Operations Association in the U.S. and British Association of

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<sup>51</sup> Following U.S. government standards, war contractors are defined as any firm hired by a government agency to deliver services or perform a task (GAO 2008b).

Private Security Companies capture efforts towards self--regulation. However, rules and regulations governing the employment of PSFs remain nebulous.

Contracting out of government services has become synonymous with competition (DeHoog 1990; SIGIR 2004). De Hoog (1990) outlines the contracting model's four ideal conditions: complete contracting, sufficient bid solicitation, objective evaluation metrics, and objective monitoring. Under these conditions, employers benefit from competition by removing the potential for monopolistic behavior by the firm, ensuring performance and replacing poorly performing firms. However, these stringent conditions are unlikely to hold in many cases (Kramer and Grossman 1987; de Hoog 1984; Sclar 2000), particularly in volatile conflict environments. Yet, market competition requires governments to possess the organizational and administrative capacity to regulate PSFs, ensure multiple firms exist and provide funding certainty. National governments employing PSFs rarely meet these conditions (Stationary Office 2002).<sup>52</sup>

The following theoretical argument is applicable to other conflict environments but has been tailored to fit the U.S.-Iraq war to match the empirical analysis. The U.S.-Iraq conflict provides several advantages when considering competition in the private security market. First, the heavy reliance on contractors generated favorable conditions

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<sup>52</sup> Akcinaroglu and Radziszewski (2012) argue that competitive forces acting on multiple firms operating in the same geographic area may improve PSFs' performance, as firms monitor other firms' performance. Their analysis, however, fails to measure competition. In order for their argument to be consistent, the reader must assume that the different firms are providing the same services and are actually competing against each other. Additionally, they do not directly test their proposed mechanism—PSF reporting—in the analysis. This chapter directly measures competition and provides a consistent test of the theoretical expectations.

to examine competition, when it existed, within various service sectors including logistics, intelligence, and combat. Second, competition levels within each sector witnessed temporal and spatial variation, as characteristics of the conflict changed from invasion to occupation. Third, multiple agencies within the Department of Defense (DoD) issued contracts. Though there was only one main employer—abstractly the U.S. government—included in the analysis, the existence of multiple hiring principals provided opportunities for a firm's reputation to develop and impact contract retention. Fourth, U.S. transparency laws provided access to both U.S. and non-U.S. based firms' DoD contract information.<sup>53</sup> In order to test observable implications from the general theoretical expectations, specific hypotheses for the U.S.--Iraq war are derived.

The U.S.--Iraq war provides opportunities to conduct province level analysis. Iraqi provinces vary across social, cultural, economic, and religious cleavages which increase the generalizability of the results. Despite the single country selection, the major criticism of selecting on the dependent variable is not applicable (King, Keohane and Verba 1994; Gerring 2004; Gerring 2007). PSFs' performance is based on what the employer hires the firms to accomplish. For example, a government may hire a firm to repress rebel groups, such as Sandline in Sierra Leone (Kinsey 2006) and Executive Outcomes in Angola (Dokubo 2000; Harding 1997). In these instances, PSFs' objectives were to keep the employing government in power. In Iraq, PSFs performance is tied to

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<sup>53</sup> Individually owned firms can request that contracts be redacted in order to prevent unfair competition. Publicly traded firms are not granted any waivers concerning publication. However, basic information used to compile contract variables is available for all contracts, as competition and contract structure is not proprietary information.

U.S. military objectives—including establishing law and order (Crane and Terrill:2003). Law and order is conceptualized as the absence of violence (Jones et al 2005). The following theoretical discussion is framed within the U.S.-Iraq war context in order to isolate different factors of competition. U.S.-Iraq examples are used to articulate the nuances of competition and specific hypotheses testing in the context of the general theoretical argument.

### *Competition in Security Contracting and Conflict Outcomes*

How does security service privatization influence conflict outcomes? National governments have argued that market competition reduces waste and increases efficiency in the provision of military services (Carmola 2010; Stationary Office 2002; DoD 2001). PSFs directly influence conflict outcomes by providing armed and unarmed support to military forces which has a direct effect on military effectiveness (Dunigan 2011). Indirectly, PSFs influence conflict outcomes by providing public goods in the absence of effective government. The extent of U.S. dependence on PSFs in Iraq generated considerable confusion in the contracting process (Grasso 2010; GAO 2008c; SIGIR 2004). Under conditions of complete contracting and perfect competition, dependence on PSFs would have little influence on military effectiveness and the provision of public goods. However, competition is imperfect and PSFs may shirk in the provision of services. Shirking maximizes current profits by providing below standard or inefficient services, it may jeopardize future contracts and profitability. Market competition and contract structure are two factors that influence the likelihood of PSFs shirking which, in turn, impact conflict outcomes.

Private security firms seek monetary expansion by building reputations for completing contracts. Contracting is not a single-shot game, as both employers and PSFs operate under the shadow of the future where multiple contracts are typically required for a firm to remain profitable. Uncertainty about future contracts elevates the importance of successfully completing current contracts. The opportunity for repeated interactions between employers and firms allows employers to learn about the efficiency and competency of specific firms.

PSFs' influence on conflict outcomes is based on completion of contracts. When PSFs shirk in conflict environments, the military effectiveness of the force they are supporting diminishes. Both un-armed and armed contractors provide critical services that are required in military operations. In the case of unarmed support, providing fuel to U.S. forces in Iraq was arguably the most essential service of PSFs. Deputy Secretary of Defense William Lynn stated that the inability to deliver fuel to forces increasingly threatened operations due to the rising attacks on 'soft targets'—non-armored vehicles. The heavy casualties incurred by PSFs and their U.S. escorts were sufficiently high that DoD initiated programs to move away from fossil fuels (Anderson 2011; Helman 2009).<sup>54</sup> PSF delivery of other services such as electricity, food, water, and intelligence were similarly critical to U.S. operational capacity (Grasso 2010; GAO 2008b). The potential impact of armed contractors is significant as contractors have directly

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<sup>54</sup> The surge of U.S. forces in 2007 was accompanied by an increased demand for fuel. Contractor deaths spiked during the period (Broder and Risen2011).

influenced conflict outcomes in Sierra Leone, Angola, and Serbia (Harding 1997; Howe 1998).

Competition is one observable indicator of a PSF's contract selection process. PSFs self-select into a conflict based on observable and non-observable factors. Observable factors occur when PSFs actually bid on a contract. Non-observable selection criteria include contract evaluation, conflict situation, completion likelihood and firm resources. In many instances, PSFs have incentives to keep this information private, as the information may enhance an opponent's competitive edge. For example, if Firm A is bidding on a particular contract against Firm B. Calls for proposals—the technical term for announcing a service contract by the U.S. federal government—provide both firms with the contract requirements. Assume firm A has information on what Firm B will bid, particularly the bid price, firm costs and profitability expectations. Because Firm B is unaware of Firm A's self-selection criteria, Firm B's bid is based only on its private information. Firm A is at a distinct advantage because of its ability to price match or underbid Firm B for the contract, even though both firms will be simultaneously submitting proposals. The self-selection process generates uncertainty about competition in the market. There are several explanations for the absence of competition for a contract including that no PSFs provide that service, the contract is not profitable and the contact is poorly designed. When companies compete for a contract, the bid represents both the observable and un-observable factors that influence PSFs' business calculus. Thus, bidding reflects the level of competition in the market.

Competition exists in the private security market, as few services, if any, are only provided by a single firm—even if markets are only weakly competitive (van Skyle 2003). Service diversification from armed combat to information technology has spurred growth and innovation in the market. Large contracting firms—Lockheed Martin, Boeing, Fluor, ArmorGroup, Kellogg, Brown & Root, Academi—increasingly face a competitive landscape as firms enter the marketplace (Avant 2004; Leander 2008). For some services, such as delivery of logistical support, large prime contractors create markets that resemble oligarchies. Higher barriers to entry and limitations in services reduce, but do not eliminate, the likelihood of additional firms competing in the future. Yet, international demand continues to provide opportunities for small businesses to compete for contracts. In case of the U.S. federal government, DoD is required by law to provide certain percentages of contracts to small businesses in an effort to bolster competition and diversify the security contracting sector. In many service sectors, such as drone technology, commercial applications of the product have resulted in the creations of dozens of companies that provide similar services. In order to examine how competition influences optimal service provision, determinants of competition are examined.

Competitive pressures force PSFs to consolidate, merge, and spin-off companies to maximize profitability. For example, in 1997 Lockheed Martin, in conjunction with Loral manufacturing, spun off 10 different smaller business units that specialized in high technology products into a separate company—L3 Communications. The strategic move was designed to allow Lockheed Martin to focus on priority business objectives while

making L3 competitive in the technology sector. The inability of Lockheed Martin's business units to compete with firms such as General Dynamics, Northrop Grumman and Boeing was one justification of the business reorganization (Schneider 1997). L3 commenced purchasing smaller technology firms and has become one of the major global suppliers of technology services. This example, and others such as ArmorGroup, G4S, Global Risk International, and Fluor, captures the dynamic nature of competition in the private security market.

The absence of competition negatively influences PSFs' performance. For example, poor (and potentially criminal) performance contributed to allegation of abuse in Iraqi prisons operated by U.S. based company Titan and CACI (California Analysis Center Incorporated). Following the U.S. invasion of Iraq, the high priority placed on opening prisons required expansive hiring of interrogators and translators, often without proper employee vetting (Amnesty and International 2008; Isenberg 2009) and was undertaken outside the normal contracting system (King and Cooper 2004; Macarthy 2004). In the case of Abu Ghraib, Titan's involvement contributed to allegations of torture and prisoner mistreatment (Brinkley 2004; Gibson and Shane 2004; Schmitt 2005; Schooner 2005). Operations at Abu Ghraib may have turned casual Iraqi civilians that may otherwise have supported or been ambivalent about U.S. operation towards membership in the insurgency.<sup>55</sup>

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<sup>55</sup> For a legal discussion of the Abu Ghraib, particularly the justification of torture and the implications for generating terrorism, see Lewis and Dratel (2005) and Strauss (2005). Incidentally, Engility Holdings Inc., a company spin-off of L3, paid USD 5.28 million to former prisoners at Abu Graib that were named in the lawsuit against L3 (Yost 2013).

PSFs are discouraged from ubiquitous contract solicitations as the bidding process is costly.<sup>56</sup> PSFs rationally limit bids to those most likely to be won and those most profitable. Consequently, a limited number of bids can result from two separate causal paths. First, few bids may result from limited competition and few firms qualified to provide the service.<sup>57</sup>

Second, few bids can reflect a poorly constructed request for a proposal from the employer, reducing the incentives of PSFs to bid. This occurs when proposal requests are not fully developed or are poorly structured. In both paths, however, the effects on competition are similar, as the number of bids received for a contract reflects, *caeteris paribus*, the number of firms interested in pursuing the contract. In instances when firms competitively bid for contracts, PSFs are less likely to shirk. Thus, as competition increases, *ceteris paribus*, PSFs' performance is likely to increase in order to remain ahead of competitors for future contracts. Hypothesis 1 formalizes this expectation.

*Hypothesis 1:* In Iraq, as the level of competition between PSFs increases, the level of violence (insurgent attacks) decreases.

Contracts are the governing authority between employers and PSFs. Contracts establish compensation parameters for provided services in an incomplete contracting environment (Koppell and Romzke 2010). Contracts are mechanisms to control risk in

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<sup>56</sup> The cost of pursuing a contract varies based on the contracted services, firm size firm, and contract size. Generally, more complex contracts are associated with higher bid costs. The contracting relationship between PSFs and employers provides incentives for employers to write feasible and profitable requests for proposals. Employers that do not provide sufficient specifications for firms runs the risk of not securing the required services as PSFs are unable to confidently bid on the contract.

<sup>57</sup> This research does not categorize firms based on services (Singer 2003a). Rather, PSFs are allowed to self-select into competition based on firm specific factors because firms change services and self-select into contract competition.

the business relationship, even when discerning the allocation of risk is difficult (Miller and Whitford 2007). Contract structure establishes the method of payment and incentives for efficiency. Because contract structure is not tied to particular services, variation in contract structure occurs within the same service sector. Employers face the dilemma that if a contract removes performance incentives, services are likely overpriced and poorly performed. Yet, if contract structures remove potential profitability, PSFs are unlikely to compete. Variance in contract structures allows national governments to manage contract flexibility and risks in uncertain conflict environments.

Employers and PSFs negotiate contracts in order to best suit their (often opposing) objectives. Contract structure either advantages the PSFs or the employer by determining the incentives of PSFs to shirk. In contracts that reduce incentives for efficiency, the likelihood of PSFs shirking increases. Consistently, in contracts that increase efficiency incentives, PSFs are less likely to shirk. Contracts that utilize fixed prices for services—maximum value of contract is set—advantage the employer, as PSFs are required to be efficient to maximize profits. Contracts that provide fees for specific services reduce efficiency incentives, as maximizing profit involves pursuing massive quantities of low quality services. For example, Halliburton's meal operations in the Middle East came under fire in 2004 for allegedly over counting the number of meals served. Halliburton was compensated based on the number of meals served, not necessarily the number of meals needed for soldiers. Consequently, the firm not only over counted the number of meals served but also provided enormous individual

servings in order to double count meals (Brinkley and Schmitt 2004b; Miller 2005).<sup>58</sup>

Because of changing conflict conditions, the bargaining leverage between PSFs and employers requires various contract structures to secure services in the same conflict.

The 'fog of war'—the un-certainty about service requirements, delivery costs, and oversight capacity—confounds conflict contracting. Employers are generally unable to secure the most advantageous contract structure, as time sensitive services required for military operations improve PSFs bargaining leverage. Inconsistent application of contract structures and service procurement plagued U.S. military operations throughout the Iraq war (Hutton and Solis 2009), despite clear rules for contract structure. General confusion in the employment of PSFs resulted in inconsistent contracting procedures, implementation and evaluation (Grasso 2010; GAO 2008c). Moreover, various departments within U.S. DoD were able to sign and administer contracts, limiting DoD wide standardization of contracting practices. The Special Inspector General for Iraq Reconstruction found that the Coalition Provisional Authority in Iraq had not “issued standard operating procedures or developed an effective contract review, tracking, and monitoring system” (SIGIR 2004, *i*). Consequently, contract structures were haphazardly applied across the various services and provinces in Iraq reducing the likelihood that contract structure is endogenous to provided service and province location.

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<sup>58</sup> The U.S. soldier obesity doubled from 2003 to 2008 (Zoroya 2009). Individual interviews with Iraq veterans outlined the over-abundance of steak per meal in Kuwait during the conflict.

The uncertainty of service demands in conflict situations undermines the ability of employers to write complete contracts. Incomplete contracts heighten the importance of contract structures and the use of performance incentives. Contract structures influence PSFs ability to shirk while remaining profitable. PSFs shirking influences service provision which, in turn, impacts PSFs' influence on conflict outcomes. In situations that favor the employer, contracts are expected to force PSFs to effectively complete contracts, potentially generating conflict outcomes desired by the employer. However, in situations that favor the PSFs, the importance of contract completion to ensure future business is limited. These expectations are formalized below.

*Hypothesis 2:* In Iraq, contracts that reduce (increase) efficiency incentives are likely to be associated with increases (decrease) in insurgent attacks.

### *Research Design*

#### **Dependent Variable**

Law and order in Iraq is measured by insurgent *attacks* per province-month, as reported by the U.S. Central Command for the period January 2004 to August 2008. The temporal and spatial variation of *attacks* mirrors concentration of U.S. military activity. For example, Anbar and Baghdad provinces experienced the highest sustained levels of attacks and troop levels. Baghdad experienced approximately 31% of the total attacks (5,235). Despite the approximately 16,660 total attacks in Iraq during the period, several provinces witnessed months without attacks or very little activity. Province level analysis captures the heterogeneity that existed during the conflict. Yet, Karabala largely escaped violence, while enduring a monthly average of 7.6 attacks.

Clarification of PSFs' operations in Iraq is required because of the nature of the dependent variable. Utilizing insurgent attacks as the dependent variable does not indicate that PSFs directly and intentionally targeted civilians or prompted retaliatory attacks. Many PSFs conducted themselves as professional business operations despite several high profile incidents such as Blackwater's Nisour Square incident where seventeen civilian fatalities occurred. Rather, the variable is an objective measure of rule of law in Iraq. Utilizing levels of violence as a proxy for law and order is a theoretically consistent measure of PSFs' direct and indirect influence on the conflict.

### **Key Explanatory Variables**

Department of Defense data were obtained from the U.S. Census Bureau for PSFs operating in Iraq from January of 2003 to December 2008. PSFs that were not employed by DoD, particularly U.S. State Department, are not included in the analysis due to the lack of systematic data. The 1,901 contracts were signed during the period and include seventeen service sectors for PSFs operating in 14 of Iraq's 18 provinces.<sup>59</sup> The major base, city, or forward operating location identified PSFs' operational province. The data are organized in province-month-year structure. Generating the unit of analysis required expanding the original dataset to generate time-series data for each contract. PSFs are counted as operating in a province when the PSFs had more than 15 days in a particular month. This coding procedure increases the likelihood that PSFs actually operated in the identified month. Specific within month variation is not

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<sup>59</sup> It is likely all Iraqi provinces witnessed PSF operations, as 92 contracts state Iraq wide for their operational location. Additionally, 279 contracts could not be geographically located due to insufficient details.

identifiable, largely due to DoD's inability to provide the information (GAO 2008b; GAO 2010b). Variables were generated by collapsing the expanded data by province-month-year to aggregate PSFs operating in a province per month based on competition levels.

In Iraq, the contracting procedures and processes were not sufficiently organized for PSFs to pick regions of the country to operate. PSFs signed contracts to provide services in Iraq and only later, based on military necessity, were the location detailed.<sup>60</sup> The number of firms in a region is based on security service requirements in the province, not competition levels. PSFs may geographically select in which conflicts to compete but not necessarily the location within the conflict. The procedure of securing a contract in Iraq did not typically allow firms to select in which province they provided services. Rather, identification of specific service location within Iraq typically occurred after a firm won the bid for the Iraq services. This procedure diminishes the likelihood that contract bids are endogenous based on the levels of violence in a particular Iraqi province.

The U.S.-Iraq data provides an opportunity to identify the initial bidding competition and contract structures. Contracts issued by the U.S. federal government are required, with certain restrictions, to be publicly available. Two sources were utilized to compile the competition data. First, the Federal Procurement Data Systems (FDPS) provides summary information for each federally issued contract, including many Iraqi

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<sup>60</sup> The U.S. DoD has established procedures for contingency contracting. However, the operators' manual establishes that no two contingency operations are the same and procedures may vary between operations (DPAP 2011; DSB 1996).

contracts. Second, DoD is required to daily announce and provide information on all contracts over USD 5 million. If a contract was not found in either database, an internet search was conducted. The resulting coding procedure captured nearly 60 percent (1,133) of DoD's contracts for the period.<sup>61</sup> Contracts for publicly traded, individually owned, large firms, small firms as well as each type of service were included in the analysis. FDPS provided the majority of the data on the number of bidders for each contract. DoD and internet searches were used to augment FDPS's contract bid data.<sup>62</sup>

Testing the hypotheses requires measures of competition and PSFs efficiency. Competition is captured by the number of bids a contract receives. A bid only occurs when both the PSFs' unobservable business models and observable contract requirements are profitable for the firm. Capturing PSF efficiency is based on the number of employees from PSFs in the province, not a raw count of PSFs. Using the number of employees better captures the magnitude of PSF involvement. For example, employee totals account for differences in a PSFs' footprint for the same service. For example, KBR's contract to provide food was significantly larger than Saudi Arabia's Gulf Coast Catering contract; hence, despite the same service, KBR often employed hundreds of more individuals than the former.<sup>63</sup>

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<sup>61</sup> Industry representatives stated the absence of a contract can be due to non-systematic failure of data entry employees and not systematic bias, which prevents analysis of the missing contracts.

<sup>62</sup> DoD releases often include the number of solicitations received (bid) on the contract announcement. However, DoD is inconsistent in releasing this data.

<sup>63</sup> Using monetary value as a proxy for level of involvement is problematic due to disparities in service prices. For example, L3 provide satellite communication support through the conflict that required a minimal presence in Iraq, but an enormous base of technicians in the U.S. Utilizing employee level in Iraq a more direct measure of firm involvement.

Because the competition procedures and implementation of U.S. contracts in Iraq was not uniform, two sets of variables are used to capture competition. First, *Employee Ratio* is a ratio measure of competitive employees to non-competitive employees.<sup>64</sup> In Iraq, some companies were selected by the U.S. government to receive contracts without competitive bidding. These companies are termed sole source and there are 211 no-bid contracts in the sample. *Employee Ratio* provides a baseline measure that captures the degree to which employees in a province are firms that face competition or not. The ratio creates a relative scale of competitiveness in each province enabling comparisons between employee levels. The variable was constructed by totaling the number of employees from competitive and non-competitive firms per province-month. Employees from competitive firms were the dividend; employees from non-competitive firms were the divisor. Large values represent instances where employees from competitive firms outnumber employees from non-competing firms. Because *Employee Ratio* is skewed, it was logged. When interpreting *Employee Ratio*, negative coefficients represent improvements in PSF efficiency (reductions in shirking) while negative coefficients represent decreases in PSF efficiency (shirking increase). Given Hypothesis 1, we expect the coefficient for *Employee Ratio* to be negative and significant.

The second set of variables aggregates employees based on specific competition levels. Because competition is based on specific contracts, not necessarily specific PSFs, categorizing competition incorporates variation in PSFs composition, services,

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<sup>64</sup> Calculation of the variable required replacing 0's with 1's for both competitive and non-competitive employees.

and locations. Delineating competition in this manner allows for within service sector comparisons. These variables are required to identify how competition shapes specific operations of PSFs. For example, a PSF that provides multiple services and maintains multiple contracts faces different competition levels for each service. Some services, such as translation and interrogation, are less competitive than convey management. Yet, L3 provided both services. In addition, because PSFs self-select into competition, this procedure ensures that competition level, not services, is tabulated across PSFs operating in Iraq. This reduces the likelihood that idiosyncratic attributes of a particular service's competition level unduly effects results. Three variables are constructed. *Sole Bid* captures the number of employees from firms that did not experience competitive bidding.<sup>65</sup> Sole-source contracts occur when the U.S. government hires a firm without an open competition. *Low Competition* captures the number of employees working for firms that experienced 3 or less competitors, excluding sole source contracts. *High Competition* captures those employees from PSFs that experienced 4 or more bidders. In the sample of coded contracts, the bid mean was 3.47 and ranged from 1 to 30. Bids of 4 or less comprised approximately 65 percent of the sample.

To examine hypothesis 2, variables capture three contract structures were created. Table 8 contains the three primary contract categories issued by DoD and information on the number of contracts in Iraq, a brief descriptions, key characteristics,

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<sup>65</sup> Technically sole-source contracts have 1 bidder, the PSFs that secured the contract. However, the mechanism for a sole-source contract is different from open competition contracts that only had 1 bid.

and efficiency incentives.<sup>66</sup> The three contract types are times and materials, cost plus, and firm fixed price. First, times and material compensate PSFs based on hourly rates and reimbursement structure. These contracts typically advantage the firm, as it requires employers to carefully oversee operations to ensure firms are not overcharging for services. Second, cost plus contracts are those where the PSF is provided with a reimbursement of costs and is guaranteed a pre-set fee, or profitability margin. In these cases, profits are guaranteed, which may encourage waste, but are restricted in that maximum profits are set by the employer. Finally, firm fixed contracts set a fixed price for services which places more risk on the firm. Performance incentives are maximized under this condition, as profit is ascertained through efficient service provision. The approximately 334 contracts that have multiple structures are categorized separately, as differentiating between structures is not possible.

**Table 8 Contracted Service Total by Contract Structure**

Contract Vehicle	Number of Contracts	Description	Key Characteristics	Performance Incentives
Times Materials	128	Direct fixed labor hours and materials costs	Accurate labor estimates	Low
Cost Plus	219	Negotiated fee over cost	Limited change in fee	Med
Firm Fixed Price	429	Set fixed price for services	Set price	High
2 or more Unknown	334 23	More than 1 contract type	Unknown	unknown

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<sup>66</sup> There were six categories of contracts used by DoD in Iraq that were collapsed into 3 categories due to similarity of incentive structure. For a full discussion on federal contract policsee Justia US Law website at <http://law.justia.com>.

Is contract structure endogenous to service type? In Iraq, contract structure was not determined by the service provided by the PSFs. For example, when considering Iraq wide contracts for armed services, firm fixed contracts (row three) had more (16) than times and materials (row one) and cost-plus (row two) with 10, 7, respectively.<sup>67</sup> When considering specific provinces that witnessed the highest levels of violence—Anbar, Baghdad, and Salah al-Din—each contract structure was similarly utilized for specific services in each province. Table 9 contains the number of PSF contracts by service in Anbar, Baghdad and Salah al-Din. Noticeably, neither Anbar nor Salah al-Din provinces experienced armed DoD contractors that operated under time and materials, while Baghdad had 3 such contracts. Similarly, the provision of ammunition to Coalition forces does not follow a discernible pattern. However, electricity contracts demonstrate a preference for fixed-price contracts. Consequently, despite the different contract incentive structures, and more importantly the level of risk to the employer, multiple structures are used for the same service.

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<sup>67</sup> The number of contract structures for armed firms is limited due to missing approximately 60 percent of the armed contracts in the data set. Armed contracts account for approximately 4% of the total number of DoD contracts in the data sample, reducing the likelihood that systematic bias influences the results.

**Table 9 Province Level Total by Contract Structure**

Province	Contract Structure	Total	Armed	Ammunition	Electricity
Anbar	T&M	8	0	0	2
	Cost-Plus	32	5	2	11
	Fixed Price	58	3	2	16
Baghdad	T&M	36	3	2	6
	Cost-Plus	57	6	0	14
	Fixed Price	123	0	0	39
Salah al-Din	T&M	16	0	0	2
	Cost-Plus	27	0	1	8
	Fixed Price	76	4	12	31

Why would the government sign alternative contracts? First, DoD was largely unprepared for the massive increase in war time contractors (Cancian:2008; DiNapoli 2012; SIGIR 2004). At the onset of the conflict, the U.S. Department of Defense had a relatively small professional contracting corps that was largely unfamiliar with contingency operations. The major differences between contingency operations and other types of procurement were cited as a problem area for DoD (Berrios 2006; Karpoff, Lee and Valaria 1999).<sup>68</sup> Second, the lack of coherent policy on contracting was detrimental to oversight during the contracting phase (Grasso 2010; GAO 2008c). Finally, accusations of political collusion between firms and agencies in Iraq have been

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<sup>68</sup> Brown (2011) provides a thorough review of the results of the International Contract Corruption Task Force that identified cases of corruption and malpractice in U.S. Army contracting in Kuwait, Iraq and Afghanistan.

made suggesting that contract structures were not based solely on competitive market forces (Birdsall and Subramanian 2004; le Billon 2005).<sup>69</sup>

### **Control Variables**

Insurgent attacks are likely influenced by more than the PSFs' operations. Drawing from the literature on terrorism, several military, political and economic control variables are included in the analysis. When possible, province-month variation is used, though some variables do not vary by province or by month. Descriptions of the control variables are grouped by category.

PSFs were not the primary military presence in Iraq or in most conflicts. In Iraq, U.S. and coalition forces assumed the bulk of the security operations while being supported by PSFs. Because direct measures of security environment such as crime rates are not available, measures of security personnel are used. Two measures, *U.S. Military* and *Coalition Force* are the monthly counts of forces from January 2004 to August 2008. Foreign forces may have competing effects on insurgent attacks. While foreign forces may improve security through peacekeeping type operations (Fortna 2004a 2004b), foreign occupation may also provide motivation and opportunity for terrorist attacks (Azam and Thelen 2010; Pape 2003). Increasing Iraqi security personnel may reduce violence levels. Moreover, PSFs were heavily involved in the training of Iraq *National Guard* and *Iraq Police* forces. Two measures capturing Iraq security personnel are used. *National Guard* and *Iraq Police* capture the two main Iraqi

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<sup>69</sup>Some evidence suggests that Iraqis prefer foreign PSFs due to the perceived lack of biases in foreign based firm as compared to PSFs managed and staffed by fellow Iraqis (Isenberg 2006).

security forces. Each of the four variables are from the Brookings Institute Iraq Index and are tabulated from U.S. and Iraqi government sources. The variables vary by month but do not distinguish province level variation. Iraqi security force variables are logged.

Economic conditions likely influence levels of violence as conflict often destroys infrastructure, reducing economic growth. Therefore, three variables are used to control for Iraq's economic conditions. First, *Oil Exported* is the monthly total value of crude oil exported in millions of barrels/day from Iraq.<sup>70</sup> Oil remains the major source of revenue for Iraq. The literature suggests that oil exports may have competing effects on violence. Oil revenue is often critical for recovery, yet oil dependence is also associated with weaker institutional capabilities (Chaudhry 1989; Fearon and Laitin 2003; Karl 1997; Ross 1999). Monthly data is provided the Brookings Institute's Iraq Index and the variable is logged. Second, *Electricity Production* is measured as the average megawatts generated per month in Iraq. Electricity is an important economic indicator of post-conflict recovery (Collier 2003; Doyle and Sambanis 2000; Fortna 2004a). Additionally, PSFs were specifically contracted to produce and distribute electricity. The variable is from Brookings Iraq Index and has been logged. Third, *Net ODA Per Capita* is the annual net aid received per capita in Iraq. The variable is from the World Bank's World Development Indicators and is measured in current U.S. dollars. Foreign aid may promote development in post-conflict states but may also limit democratization efforts

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<sup>70</sup> The value of exported oil is used as a control, as opposed to total oil produced, because the funding from international sales provided government revenue and presumably public good provision. Oil production, however, may not directly contribute to government revenue. One marine interviewed for the project recounted instances on the Iraq-Syrian border where Iraqi's would float oil barrels across the river. U.S. forces assigned to guard the boarder were instructed to restrict the illicit sale of oil. The marine stated that during night operations snipers would sink the barrels of oil by shooting them.

(Collier and Hoeffler 2004; Knack 2004; Djankov, Montalvo and Reynal 2008). Each of the economic variables vary by month because province level variation could not be coded.

Democratic political development in Iraq is captured with the *PreElection* variable. *PreElection* is coded as one during an election and the two preceding months and zero otherwise. Iraqi parliamentary elections were held only in January 2005. Similar to economic development, in some cases elections showing political progress may reduce violence (Reilly 2002), while in other cases elections actually escalate violence, as issues are not solved prior to the election (Collier 2009; Collier, Hoeffler and Soderbom 2008).

Finally, temporal variation in the five year sample is addressed with two variables. First, *ConflictStart* is a count variable for each month of the conflict. Second, year dummies are used to model the progression of the conflict. Violence levels peaked in 2007 followed by four years of gradual reductions.<sup>71</sup> The year dummies are not reported in the main tables.

### **Estimation Technique**

The dependent variable *insurgent attack* is a count variable that demonstrates over--dispersion. Negative binomial regression is used, as Poisson models assumptions are violated—particularly variance equaling the mean (Long 1997). Province and year

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<sup>71</sup> Controls for the U.S. increase in military forces in 2006, known as "the surge" are included in the analysis. Weidmann and Salehyan (forthcoming) develop a computational model that suggests the reduction in violence in Baghdad was due to the various ethnic groups consolidating in specific neighborhoods.

fixed effects are used to account for province heterogeneity between Iraqi provinces.<sup>72</sup> Iraq has 18 provinces, each with its own characteristics. Iraq is a diverse country with various ethnic and religious groups scattered across the country. Significant divisions within the Sunni, Shia, and Kurdish populations have contributed to violence, even while the population consolidated along social fissures (Weidmann and Salehyan forthcoming). The unit of analysis is province-month-year. All explanatory variables are lagged one month to control for possible simultaneity bias.

### *Results*

Tables 10 & 11 contain the results of the competitive bidding analysis. Models 1 and 5 provide the baseline examination of hypothesis 1. As hypothesized, employees from firms that face competition are associated with increased efficiency, evidenced by *Employee Ratio's* negative coefficient and statistically significant coefficient.

Substantively, calculated on model 1, moving from a 1:1 ratio to 3:1 ratio of competitive employees to non-competitive employees are associated with a 7% decrease in the likelihood of a single insurgent attack when holding other variables at their means.

When shifting from 1:1 to 5:1 employee ratio, the associated influence is approximately a 10% reduction in the likelihood of a single attack. When the ratio surpasses 25:1, which accounts for approximately 60% of observations in the data, there is an approximately 21% reduction in the likelihood of a single attack. Model 2 introduces additional control variables that have little substantive impact on the influence of the

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<sup>72</sup> The Hausman tests suggests that differences between fixed and random effects models are minimal, as the test fails to reject the null hypothesis across various model specifications.

*Employee Ratio* variable. The results suggest that shirking in conflict zones is problematic and that increasing competition provides a mechanism to improve PSF performance.

Baghdad witnessed the most insurgent attacks when compared to any other province during the conflict. In order to ensure Baghdad is not overwhelming the analysis, the province is dropped in models 3 & 4 and 7 & 8. Despite Baghdad's higher per month average of attacks, the results for *Employee Ratio* remain consistent. When using model 5 as the benchmark and holding other variables at their means, shifting from a 1:1 to 3:1 employee ratio is associated with a 6% decrease in the likelihood of an attack. The general consistency of the results suggests that Baghdad is not unduly influencing the analysis.

Increasing the military and police presence in Iraq impacted insurgent attacks. U.S. military troop levels did not have a statistically significant effect on insurgent attacks. However, coalition forces had a positive and statistically significant effect on insurgent attacks in each model specification.<sup>73</sup> Substantively, a standard deviation (approx. 10,000) increase from the mean of coalition forces was associated with an approximate 55% increase in the likelihood of attacks. One potential explanation for this counter-intuitive result is that the U.S. military often operated in the most violence prone provinces, confounding the influence of increased U.S. military personnel. While U.S. forces may have simultaneously decreased violence through patrols and operations, troop presence increases the opportunity for attacks. Alternatively, because U.S. forces

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<sup>73</sup> All marginal effects for control variables are calculated based on model 5 in Table III.

were more likely to operate out of hardened facilities, coalition forces may have been more exposed to insurgent violence despite the smaller size of the force. In the same way that hardening international targets shifts transnational terrorism to new locations (Brandt and Sandler 2010; Enders and Sandler 1993), security improvements in Iraq may have induced similar shifts between areas patrolled by U.S. and coalition forces.

**Table 10 Competition Levels and PSF's Performance in Iraq (Part A)**

	Model 1	Model 2	Model 3 No Bagh.	Model 4 No Bagh.
Employ Ratio	-0.066 <sup>t</sup> (0.017)	0.058 <sup>t</sup> (0.017)	-0.058 <sup>t</sup> (0.018)	-0.051 <sup>t</sup> (0.018)
U.S. Military	0.100 (0.477)	0.278 (0.479)	0.107 (0.517)	0.287 (0.521)
Coalition Forces	0.346 <sup>t</sup> (0.044)	0.369 <sup>t</sup> (0.048)	0.341 <sup>t</sup> (0.048)	0.366 <sup>t</sup> (0.052)
Iraq Nat. Guard	-0.406** (0.198)	-0.253 (0.223)	-0.442** (0.214)	-0.299 (0.243)
Conflict Start	0.169 (0.229)	0.084 (0.179)	0.145 (0.276)	0.004 (0.020)
Net ODAPc	0.064 <sup>t</sup> (0.010)	0.063 <sup>t</sup> (0.010)	0.067 <sup>t</sup> (0.011)	0.065 <sup>t</sup> (0.021)
Iraq Police		-0.116 (0.076)		-0.106 (0.083)
Oil Exported		0.329* (0.182)		0.334* (0.199)
Pre-Election		-0.287* (0.156)		-0.301* (0.170)
Electricity		-1.388 <sup>t</sup> (0.364)		-1.341 <sup>t</sup> (0.395)
Constant	117.1 <sup>t</sup> (21.66)	127.3 <sup>t</sup> (21.43)	120.1 <sup>t</sup> (23.35)	129.8 <sup>t</sup> (23.17)
Log Likelihood	-3125.3	-3114.7	-2758.3	-2749.6
Wald Test ( $\chi^2$ )	451.8	494.2	279.9	412.9
Observations	615	615	564	564

Standard errors parentheses

Two Tailed test: <sup>t</sup> p<0.001, \*\* p<0.01, \* p<0.05

**Table 11 Competition Levels and PSFs' Performance in Iraq (Part B)**

	Model 5	Model 6	Model 7 No Bagh.	Model 8 No Bagh.
Sole Bid	0.087 <sup>t</sup> (0.018)	0.076 <sup>t</sup> (0.018)	0.072 <sup>t</sup> (0.019)	0.057 <sup>t</sup> (0.019)
Low Competition	0.010 (0.033)	-0.001 (0.033)	-0.023 (0.035)	-0.040 (0.035)
High Competition	-0.020 (0.014)	-0.025* (0.014)	-0.022 (0.016)	-0.028* (0.016)
U.S. Military	0.161 (0.478)	0.257 (0.481)	0.062 (0.525)	0.147 (0.527)
Coalition Force	0.319 <sup>t</sup> (0.046)	0.353 <sup>t</sup> (0.050)	0.330 <sup>t</sup> (0.050)	0.371 <sup>t</sup> (0.054)
Iraq Nat. Guard	-0.293 (0.200)	-0.172 (0.225)	-0.388* (0.220)	-0.290 (0.247)
Conflict Start	0.056 <sup>t</sup> (0.229)	0.057 <sup>t</sup> (0.011)	0.063 <sup>t</sup> (0.012)	0.066 <sup>t</sup> (0.012)
Net ODApc	-18.55 <sup>t</sup> (3.528)	-19.24 <sup>t</sup> (3.502)	-20.08 <sup>t</sup> (3.837)	-21.09 <sup>t</sup> (38.04)
Iraq Police		-0.121 (0.076)		-0.133 (0.082)
Oil Exported		0.326* (0.180)		0.331* (0.198)
Pre-Election		-0.264* (0.155)		-0.306* (0.171)
Electricity		-1.282 <sup>t</sup> (0.373)		-1.415 <sup>t</sup> (0.395)
Constant	107.2 <sup>t</sup> (21.92)	120.8 <sup>t</sup> (22.14)	117.4 <sup>t</sup> (23.90)	134.2 <sup>t</sup> (24.13)
Log Likelihood	-3120.8	-3111.4	-2756.6	-2747.7
Wald Test ( $\chi^2$ )	474.6	511.5	389.9	424.0
Observations	615	615	564	564

Standard errors parentheses

Two Tailed test: <sup>t</sup> p<0.001, \*\* p<0.01, \* p<0.05

Foreign aid often becomes a large part of post-conflict economies. Iraq was no exception, as the conflict destroyed infrastructure and institutions which hampered commerce. Heavy dependence on foreign aid early in the conflict is evident by *Net*

*ODApc's* large negative and statistically significant coefficient. A standard deviation increase in aid per capita—approximately 225 U.S. dollars per year—was associated with an approximately 1500% decrease in the likelihood of a single attack when holding other variables at their means. This result appears stupendous, but aid's purchasing power accounted for the majority of Iraq's economy immediately following the war. Moreover, aid can be leveraged to keep would be insurgents employed (Iyengar, Monton and Hanson 2011) despite scholarly disagreement about the opportunity-cost theory in insurgent recruitment (Berman, Felter and Shapiro 2009). The expectation that oil dependence is associated with increases in violence suggested by the resource curse literature is supported by the analysis. The inequitable geographic distribution of Iraq's oil resources remains a considerable sticking point in parliamentary and constitutional debates.

Private security firms were contracted to restore and increase overall production of electricity in the conflict. Electricity production is negative and statistically significant, suggesting that general economic development reduces levels of violence. Substantively, the 43% decrease in the likelihood of an attack associated with a standard deviation increase (1140 megawatt/hr) of electricity is considerable. This result emphasizes the potential impact of PSFs on conflict levels through direct assistance to local populations. Electricity is a tangible measure that citizens can readily identify concerning economic progress.

In Iraq, national political development is associated with an improved security environment. The pre-election variable is negative and significant across each model specification.

Results examining the influence of various competition levels are found in models 5-8 in Table 11. Both the controls and the results for sole bid employees are consistent with the previous examination, as PSFs that did not experience competitive bidding are associated with an increased likelihood of insurgent attacks. PSFs that experienced low levels of competitions had no statistically significant impact on violence which is still an improvement over non-competitive firms. However, PSFs that faced highly competitive markets—captured in the number of bidders—had a negative and significant impact on violence. Given a one standard deviation increase in the number of employees from PSFs facing high competition (approximately 188), the associated decrease in the likelihood of insurgent attacks is 4 percent. Considering that higher levels of competition occur infrequently (83 contracts total), increases in competition levels offers a unique opportunity for employers to moderate the impact of PSFs on conflict outcomes. The results are consistent with and without Baghdad in the sample. In general, the results suggest that PSFs that experienced more service sector competition contributed to decreases in insurgent attacks.

**Table 12 Contract Vehicle Type and Insurgent Attacks in Iraq**

	Model 9	Model 10	Model 11 No Baghdad	Model 12 No Baghdad
Time & Material	0.090 <sup>t</sup> (0.014)	0.087 <sup>t</sup> (0.014)	0.103 <sup>t</sup> (0.015)	0.100 <sup>t</sup> (0.016)
Cost Plus	0.046 <sup>t</sup> (0.015)	0.034** (0.016)	0.034** (0.016)	0.028* (0.017)
Firm Fixed	-0.094 <sup>t</sup> (0.025)	-0.010** (0.016)	-0.121 <sup>t</sup> (0.024)	-0.122 <sup>t</sup> (0.024)
U.S. Military	0.905* (0.480)	0.969** (0.480)	1.251** (0.518)	1.302** (0.525)
Coalition Forces	0.308 <sup>t</sup> (0.045)	0.340 <sup>t</sup> (0.049)	0.282 <sup>t</sup> (0.048)	0.329 <sup>t</sup> (0.051)
Iraq Nat. Guard	-0.460** (0.192)	-0.338 (0.218)	0.010 (0.250)	0.145 (0.288)
Conflict Start	0.060 <sup>t</sup> (0.010)	0.061 <sup>t</sup> (0.011)	0.018 (0.016)	0.016 (0.020)
Net ODApc	-18.22 <sup>t</sup> (3.507)	-19.24 <sup>t</sup> (3.463)	-15.44 <sup>t</sup> (3.880)	-15.91 <sup>t</sup> (4.079)
Iraq Police		-0.089 (0.077)		-0.081 (0.080)
Oil Exported		0.320* (0.177)		0.437** (0.187)
Pre-Election		-0.306* (0.154)		-0.186 (0.171)
Electricity		-1.318 <sup>t</sup> (0.361)		-0.776* (0.433)
Constant	103.9 <sup>t</sup> (21.79)	119.5 <sup>t</sup> (21.81)	82.97 <sup>t</sup> (24.37)	90.56 <sup>t</sup> (26.88)
Log Likelihood	-3104.5	-3094.9	-2730.2	-2724.3
Wald Test ( $\chi^2$ )	532.1	575.3	497.6	520.3
Observations	615	615	564	564

Standard errors parentheses

Two Tailed test: <sup>t</sup> p<0.001, \*\* p<0.01, \* p<.05

Contract structure results are found in Table 12. Model 9 provides the benchmark test of hypothesis 2. Models 11 and 12 remove Baghdad to ensure the results are not disproportionately effective by the capital city. *Time and Material*, which largely removes efficiency, has a positive and statistically significant effect on insurgent attacks across all model specifications. Substantively, when holding other variables at their means, moving from mean employees (approx. 50) to the maximum number of employees (2560) is associated with a 63% increased in the likelihood of insurgent attack.<sup>74</sup> Because contract structure is not unique to particular services, the results suggest that PSFs impact in conflict can be moderated using contract structure.

Private security firms that have incentive requirements in their contracts better reduce violence than firms that do not. In the case of cost-plus structures, PSFs continue to have a positive and significant influence on insurgent attacks but to a lesser degree than those firms without performance incentives. For PSFs operating under cost-plus contracts, a one standard deviation (approx. 302 employees) increase from the mean (76) is associated with a 9% increase in the likelihood of an insurgent attack.<sup>75</sup> The results suggest that PSFs that face competitive constraints are more likely to influence conflict outcomes consistent with employer objectives.

PSFs that operate under firm fixed contracts, where the performance incentives are the highest, have a negative and statistically significant influence on insurgent attacks. PSFs operating under firm fixed contract are associated with a 30% decrease in

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<sup>74</sup> Marginal effects are calculated from model 5.

<sup>75</sup> Model 9 is used to calculate marginal effects from Table 4.

the likelihood of insurgent attacks when increasing from the mean (approx. 459) by one standard deviation (approx. 830) while holding the other variables at their means. The differences in results are considerable for conflict environment because contract structure, service, and province are not mutually determining factors. The results generally support hypothesis 2.

Political and economic control variables are largely consistent with the previous results. One notable change is that the variable for U.S. military personnel is positive and statistically significant. One explanation of the shift in significance of U.S. military personnel is that contract structure better differentiates the support provided to military personnel than the competition measures. In the case of U.S. military personnel, examining Iraq with and without Baghdad has a substantive influence. A standard deviation increase in the number of U.S. military personnel (approximately 40,000) increases the likelihood of an attack by 85% and 63% with and without Baghdad respectively. The 22% decrease in likelihood of an attack when excluding Baghdad is due to the significant proportion of attacks that occur in Baghdad.

### *Conclusion*

The results support the hypothesis that competition influences PSFs' performance in conflict environments. The expanding international market and the variety of private security services has created conditions where firms face sector competition. Competition offers PSFs employers' opportunities to influence conflicts without direct monitoring or supervision, which is often difficult in conflict environments. The results

suggest that employers seeking to maximum benefits of employing PSFs must adapt competitive awarding procedures and competitive contracts structures.

The results expand our understanding of firm behavior in conflict environments, as firms that have few external competitive checks are more likely to have detrimental effects on the conflict outcomes. Despite the variation in contractor, provinces, and services, the results are limited due to concentration on the U.S.--Iraq war. Future research must address different employers and conflicts involving PSFs. For example, are organizations that employ PSFs but are not as transparent as the U.S. DoD able to take advantage of competition within the market place? Additionally, are organizations such as the U.N. benefiting from competition or does the organization's opaque business practices reduce competitions benefits? Perhaps more troubling, the international market may force firms to seek alternative and questionable sources of revenue, potentially resulting in opposing sides in a conflict employing PSFs.

This analysis contributes to the growing literature that has found that contracting out of government services produces mixed results. Contracting out private security services, under the right conditions, may improve the performance of the organization the firms are supporting which in this analysis is the U.S. military. However, contracting may also destabilize a conflict which reduces the likelihood of achieving the employers' objectives. These results do not indicate that the PSFs actively shirk from providing services; rather, the results demonstrate that that market pressure influences PSFs' impact on conflict outcomes.

Two policy implications emerge from this chapter. First, increasing competition enhances the employer's ability to modify the influence of PSFs on conflict outcomes. Increasing competition can occur by either reducing the number of available contracts or increasing the number of PSFs. The continued expansion of the international market for private security services suggests that limiting available contracts is not currently a policy option. Consequently, increasing the number of firms may improve competition. The analysis does not suggest that increasing PSF involvement in conflict is beneficial, rather, only that increased competition is beneficial. Second, the contract structure analysis suggests that employers may be advantaged under budget limitation situations. Limited budgets reduce the supply of contracts and increasing competition. The increased competition for contracts provides the employer with the power to force PSFs to accept specific contract structures or face replacement.

The argument and results presented are important not just for the study of private security but for conflict more generally. Global employment of private security firms continues to expand as governments and non-state actors seek security that was once provided by nation-states. The results demonstrate that PSFs are not a panacea for employers, as the influence of private security firms on conflict outcomes vary. Further incorporation of PSFs into the international arena presents a new non-state actor that has considerable military capabilities. How employers choose to utilize PSFs and how PSFs provide services will continue to shape conflict outcomes.

CHAPTER IV  
INFORMATION AS BEHAVIOR CHECK: FIRM TRANSPARENCY AND  
CONFLICT OUTCOMES

*Overview*

Private security firms (PSFs) are contracted to provide services to employers in conflict areas. Employing PSFs generates a principal--agent dynamic where information asymmetries develop due to firms' unobservable behavior and poor government oversight. Shirking is more likely to occur in instances where information asymmetries between a PSF and an employer are high. Firm transparency is based on information on PSFs' conflict operations and contracts provided by the firm. Firm transparency is based on the individual business calculus of each firm and varies. Increased firm transparency reduces information asymmetries by providing employers additional information on firm behavior. Increased information reduces oversight costs and limits shirking. Reductions in shirking increase PSFs' efficiency which, in turn, improves their ability to influence conflict outcomes. I test my expectations using a new data set on both U.S. and non-U.S. headquartered private security firms operating in Iraq from March 2003 to December 2008. Firm specific data is utilized to examine the degree to which a PSF influences violence levels in Iraq. Transparent firms are less prone to shirking and reductions in violence. The policy implications of the results are critical as world employers continue to increase their utilization of PSFs.

## *Introduction*

How does the transparency level of a private security firm (PSF) influence conflict outcomes? PSFs are rational profit maximizing actors that provide critical armed and unarmed services in conflict environments. The perception of PSFs as private covert armies, promoted by Hollywood movies (*The Expendables*) and elevated by armed contractor such as Blackwater and Executive Outcomes, is bolstered by the relative secrecy of PSFs operations. The use of private security companies in conflicts to obfuscate the message to democratic publics has allegedly occurred in Colombia, Croatia, Sierra Leone, Iraq and numerous conflicts (Dunigan 2011) However, the popular conception of PSFs as mercenaries fails to incorporate the dynamics of the modern private security market where reputation and legality are critical in ensuring future business success (Ostensen 2011; Thurnher 2008). PSFs are rational actors that seek to maximize profits, while employers seek to minimize cost and ensure service delivery. Profit maximization incentives may conflict with the provision the best quality services, as firms seek ways to cut costs or provide low quality services. Contracting military and security services generates a principal-agent dynamic between employers and PSFs, as the behavior of the firm is often unobservable. Agency problems that arise between PSFs and employers, which now include states and non-state actors, potentially reduce the benefits, if any exist, of employing PSFs in conflict environments.

Conflict environments exacerbate information asymmetries between employer and PSFs, as employers' capacity to collect information, oversee operations and enforce contracts is often limited (Fredland 2004; USA:2008b; Grasso 2010; Hutton and Solis

2009). For example, the administration of U.S. military contracts in Iraq was inundated with inconsistencies, despite standard formal procedures for implementation of battlefield contracts (Hutton and Solis 2009). The inability to effectively monitor PSFs extended to the Coalition Provisional Authority which for years failed to provide standard operating procedures (SIGIR 2004). The limitations of conflict coordination between principal and agent includes U.N. operations, which for the first time in 2009 purchased more services than goods in support of contingency operations (Ostensen 2011) Compared to other contracted government services—such as health care, education, and transportation—conflict contracting advantages firms over employers.

Firm transparency is the level of firm specific information provided by the firm that is publicly available. PSFs transparency mitigates information asymmetries by providing an additional source of information on firm behavior. PSFs' transparency level is a business calculation and varies by firm. While firms may reap short term gains by cloaking operations and information in secrecy, that secrecy may hamper the ability to secure future contracts. In some instances, PSFs may benefit from providing details of operations in order to showcase business versatility, capability and success. However, operational constraints may warrant reducing transparency in order to protect employees in conflict zones. Anonymity provides protection, particularly as more neutral aid workers are increasingly targeted in conflicts (Donini 2007; Fast 2010) in Iraq and Afghanistan. More dubious rationale for limiting transparency is to protect the firm from personnel misdeeds.

Alternatively, PSFs with long time horizons have incentives to provide information on operations and successfully completed contracts. Detailing past work emphasizes the firm's capacities not only to current but future employers. Firms have incentives to pursue professional ethics and the information is free to the employer, though it is potentially biased. Firm transparency, in turn, improves the likelihood that the firm will successfully complete contracts and influence conflict outcomes. Firm transparency is not based on the specific services provided by the firm in question. Though armed contractors perhaps possess the most incentive to remain operationally opaque, firms such as L3 and Olive Group provide information on current and previous missions. Other armed firms, such as Academi (formerly Blackwater) provide limited details on all operations. Additionally, many PSFs provide multiple services simultaneously, defying classifications based solely on services (Singer 2002).

Firm transparency is based on two factors: First, transparency is based on website information including data on a firm's services, projects and operations. However, variation in website information is considerable, as PSFs may provide complete historical records of operations while others provide little more than an url and email address. Second, transparency captures the information available about the firm's operations as measured by the availability of press releases and project details. The two elements of transparency reduce the information asymmetries between employers and firms. Increased firm transparency reduces information asymmetries by providing employers with additional sources of information on firm operations. Reducing information asymmetries enables employers the opportunity for better oversight and

management. Because PSFs directly and indirectly contribute to conflict outcomes, transparent firms, *ceteris paribus*, are more likely to influence conflict outcomes that are consistent with an employer's objectives when compared to non-transparent firms.

In the remaining sections of the paper, I detail how information asymmetries develop between employers and firms. The theoretical section proposes the motivations and consequences of PSF transparency by deriving empirically testable hypotheses using the U.S.-Iraq war as empirical case study. Examples from the U.S.-Iraq war are developed in order to provide context to the argument, though the theory is generalizable to other conflicts involving PSFs. The number of insurgent attacks is the dependent variable as a proxy for the ability of the U.S. military to achieve one of their primary objectives—establishing law and order (Crane and Terrill 2003; Jones et al. 2005). The research design section outlines the empirical methods and variable descriptions. Finally, I conclude with a discussion of the results as well as theoretical and policy implications.

### *Literature Review*

The expansion of private security firms in conflict environments is the result of alterations in the demand for services, international security market expansion, and general government service privatization. First, in an era where debate about whether the future of warfare is based more on counterinsurgency or conventional capabilities exists (Ucko 2009; Mazarr 2008; Hoffman 2007), PSFs fulfill many of the capabilities required of modern warfare. Scholars have recognized the importance of innovation in the employment of military force, though debate exists as to what qualifies as innovation (Goldman and Andres 1999; Posen 1984; Rosen 1991). Horowitz (2010) identifies that

technology shifts alone are not sufficient for the diffusion of military power, as innovation is based on financial intensity and organizational capital. State employers of PSFs possess financial capacity but are often limited in organizational capital. PSFs provide organizational flexibility while potentially reducing the financial burdens of conflict. Democratic employers have argued that PSF are more efficient and less costly than state provision of military services (Stationary Office 2002; Leander 2008; Taylor 2005).<sup>76</sup> Second, the international market for private security services ballooned during the 1990s, generating billions in revenue for hundreds of companies across the globe (Avant 2005; O'Brien 2000; Singer 2003b).<sup>77</sup> Third, private actors are increasingly utilized to provide general public services (Meier and O'Toole 2009; Silanes, Schleifer and Vishney 1997). Security service privatization is not country specific, though the U.S. and U.K. remain the global leaders in security privatization (Grimshaw, Vincent and Willmott 2002; Miozzo and Grimshaw 2005; Wollmann 2004). Advanced democracies supply (and employ) the bulk of PSFs globally, particularly in military training where Israel (Beni Tal and Levdon), Belgium (International Defense Security),

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<sup>76</sup> The first commissioned report on the implications and savings of privatization was conducted in the early 1990s. Coincidentally, Halliburton conducted the report and was one of the first beneficiaries of the privatization process when it secured an Army Corp of Engineers contract in 1992 (Scahill 2007). Various U.S. government agencies commissioned similar reports with some supporting the Halliburton plan (DSB 1996; Rumsfeld 2002) and others citing the overestimated benefits of military privatization (GAO1997).

<sup>77</sup> The presence of contractors during U.S. operations dates back to the Revolutionary War (Epley 1990), while corruption among contractors during the U.S. Civil War was rampant (Wilson 2006). The modern private security firms began in 1967 when Colonel David Stirling formed the company WatchGuard International to train forces for Persian Gulf states. The United States first privatized the training of foreign defense forces in 1975 when it awarded Virginia-based Vinnell Corp a \$77 million contract to train the Saudi Arabian National Guard. By some accounts, U.S. employment of private security firms for logistical support dates back to U.S. operations in Korea. In 1951 DynCorp's international predecessor, Land-Air, Inc., was awarded the Contract Field Team (CFT) skilled aircraft technicians contract to provide maintenance support for Air Force locations (Isenberg 2009). DynCorp has maintained the Contract Field Team (CFT) contract continuously since then and has also expanded services to each military branch.

France (Secrets), and Australia (International Port Services Training Group Party Ltd) are major players. PSFs are becoming increasingly common in the world's conflicts, Iraq and Afghanistan only accelerated an existing international trend.

Principal-agent problems are prevalent in conflict environments due to limitations in employer's ability to monitor and regulate PSFs. Outside the conflict environment, Mitnick (1980) demonstrates that the information gap between agents and principals is exacerbated in situations where independent acquisition of information is expensive as is the case in conflict zones. First, on-site oversight is difficult in conflicts due to the destruction of roads, bridges and harbors as well as unsafe travel conditions. For example, U.S. State Department in Iraq cited inaccessibility as the justification for only reviewing 34 of the 81 selected grant proposals in 2004 (SIGIR 2006a, 2006b)<sup>78</sup> Second, the demand for security services often outpaces government management capacity. In the case of U.S. military operations in Afghanistan, “the volume and complexity of contract actions have overwhelmed the ability of government to plan for, manage, and oversee contractors in theater” (Commission on War Time Contracting 2011, 2). Similarly, the U.S. military was largely unprepared for the volume and diversity of contracted services in Iraq (Cancian 2008; DiNapoli 2012; SIGIR 2004). Finally, PSFs are increasingly gathering intelligence and reviewing other PSF operations which further reduce the oversight capacity of employing governments (Leander 2005; Schreier and Caparini 2005).

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<sup>78</sup> The 81 selected projects were a sub-sample of all 4,798 USAID Transition Initiatives issued grants.

In environments of complete information, where both the employer and the PSFs know the state of the world and observe the behavior of the firm, completion of current contracts is necessary to secure future employment. Under complete information, failure to complete a contract effectively is known by the employer and alternative firms would be sought in future contracting situations. However, complete information situations are unlikely to occur in conflict situations.<sup>79</sup> Employers (principals) are unlikely to oversee the actions of the PSFs, generating information asymmetries between the parties. Consistent with standard structures of the principal-agent problem, PSFs possess information advantages over their principal which in this analysis is the U.S. government in Iraq.<sup>80</sup> In conflict environments, PSFs' information advantage extends beyond completion of contracts to include specifics of the conflict environment. PSFs clearly know more about their specific operations, but their informational advantage includes more circumstantial information. For example, in armed confrontations with insurgents or the public, the PSFs know whether they fired shots first. Information limitations reduce the principal's ability to regulate the firm. The divergent preferences of employers (low cost) and PSFs (profit) fortifies principal-agent problems in the contracting relationship. The likelihood of shirking increases when the agent possesses information advantages (Waterman and Meier 1998).

The likelihood of PSFs shirking in conflict environments increases when information asymmetries exist. Shirking reduces the military effectiveness of the

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<sup>79</sup> Employer's inability to identify and contract for all possible states of the world generates incomplete contracting situations. Incomplete contracting is addressed in chapter 3.

<sup>80</sup> For a review of the extensive political science literature on principal-agent models, see Miller (2005).

support organization due to dependence on PSF services. Armed contractors, perhaps the most visible example of privatization on the battlefield, directly influence conflict outcomes. Direct armed support can shift a conflict in an employer's favor as was the case with Executive Outcomes in Sierra Leone (Harding 1997; Howe 1998). Support contractors, those not providing armed services, may also directly influence conflict outcomes. U.S. operations in Iraq were dependent on PSFs to provide essential military services such as ammunition, water, electricity and fuel. In the U.S. case, failure to provide these services reduces the operational capacity of the military (Grasso 2010,GAO 2008c). PSFs that shirk in contract obligations may also indirectly influence conflict outcomes. In Iraq, the firm Titan allegedly contributed to torture at Abu Ghraib and failed to supply provisions to Iraqi prisoners and security personnel at the prison (Brinkley 2004; Cushman 2013; Minow 2004). In both direct and indirect support roles, PSFs are critical to the success of U.S. military operations, but PSFs are susceptible to shirking due to information gaps between the government and the firm.

National militaries suffer information asymmetries between the bureaucracies, organizations and political leadership (Allison 1971), but to a lesser degree than PSFs for two reasons. First, national military objectives are aligned with the government, which reduce the incentive differences between governments and PSFs (Bruneau 2011).<sup>81</sup> Second, national militaries have institutional mechanisms that perform

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<sup>81</sup> Allison (1969) and Allison and Halperin (1972) initiated a research agenda that identifies principal-agent problems within the military bureaucracy involving institutional constraints (Model II) and leadership variation (Model III). This chapter does not assume the military is a unitary actor; rather, information asymmetries are more likely to occur with the introduction of a third party.

oversight functions. Each U.S. agency had reporting mechanisms for contractor malfeasance; yet, general confusion existed in Iraq due to the multiple U.S. employers operating in the conflict (CWTC 2011). Because the legal status of PSFs in conflict situations remains largely unanswered, the accountability of PSFs compared to national militaries has been reduced (Carney 2005; Singer 2003b). Therefore, principal-agent problems are limited compared to PSFs, despite both being susceptible to these problems.

Employers of PSFs encounter principal-agent problems associated with the contracted relationship. Information asymmetries develop between employers and firms as conflict environments reduce oversight capacity of the government. PSFs have information advantages that potentially allow for shirking behavior. When PSFs shirk contracted obligations, the operational capacity of the forces they are supporting decreases which, in turn, reduces the likelihood of completing the objectives of the contingency operation. Because PSFs provide critical services, decreases in information asymmetries improve oversight and influence firm behavior.

#### *PSFs' Transparency and Conflict Outcomes*

This section argues that transparency levels influence a firm's impact on conflict outcomes. In contingency operations, particularly U.S. operations in Iraq from 2003 to 2011, PSFs often possessed informational advantage over the principal (U.S. government). Firm transparency levels are based on the cost benefit analysis of the firm and are not based solely the type of services provided by the firm. In some conflict environments, transparency is a business asset that demonstrates competency and

professionalism. In other environments, transparency is a liability as employers more readily identify poor performing firms. Largely drawing on specific U.S.-Iraq examples, increased transparency reduces information asymmetries which allows for improved employer oversight. Improved government oversight facilitates better achievement of employer objectives, which in the case of Iraq was the establishment of law and order (Crane and Terrill 2003) Consequently, reducing violence is essential to the establishment of law and order (Jones et al. 2005). Transparent PSFs are more likely to reduce violence in Iraq than those firms that are opaque about operations.

Information asymmetries occur in several forms during conflict situations. First, information asymmetries involve the actual operational behavior of PSFs in conflict. This occurs most often when an employer is unable to regulate the actual behavior of the firm employees. Second, information asymmetry may exist about the firm's capacity to provide specific services. For example, the firm Fluor received a multi-million dollar contract to build a power plant in south Baghdad. After successfully completing the construction project, Fluor did not compete on the maintenance and operation contract due to the lack of profitability, so a different firm bid and won the contract. However, within months, operation at the power plant ceased when it was revealed that the winning PSF was actually three men in California who were completely unable to fulfill the contract requirements.<sup>82</sup> Transparency is critical in other conflict instances to ensure transparent bidding processes occur. In the case of the U.N. service program, PSFs must

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<sup>82</sup> Interview with Fluor executive occurred October 2012 at the Annual International Stability Operations Association meeting in Washington D.C.

be registered in accordance with the U.N.'s Procurement Manual and the Office for Project Services (UNOPS). This requires a layer of transparency in order to compete for a bid. Firm transparency provides valuable information to employers when alternative sources of information are expensive and difficult to procure.

Firm transparency also includes information on operations, services and contracts made publicly available by the PSFs which provides an additional free source of information on the firm. Transparency levels vary by firm based on specific business calculations of the short and long term financial benefits of disclosing information on operations. The time sensitive demands of conflict contracting often reduce the ability of the employer to properly vet PSF, which was particularly true of U.S. operations in Iraq. Transparency communicates to multiple employers. Unlike the U.S. government, most employers do not have the capacity to conduct extensive reviews of PSFs prior to hiring them. Despite the likelihood that PSFs over-exaggerate success and minimize failure, publicly available information communicates firms' capabilities. In particular, providing an internet portal is a critical component of transparency. Service variation necessitates distinguishing expertise and specialties to numerous employers. Transparent firms are better able to do so than non-transparent firms. Firm transparency includes all efforts by the firm to publicize information on the firm. This includes web sites, press releases and investor information.

Operational secrets are often an important asset for PSFs. For example, the exact nature of Military Professional Resources Incorporated's (MPRI) involvement in Kosovo remains classified. The firm maintains that only training support was provided. What is

known is that less than three months after MPRI provided assistance to the ethnic Albanians, the tide of conflict turned in favor of pro-U.S. forces. In this instance, firm transparency was problematic and a potential liability for the firm. However, the existence of MPRI personnel involvement in the conflict became public due to media attention. The purchase of MPRI by L3 Communications elevated the importance of transparency due to L3's business requirements. During the U.S.--Iraq war, MPRI continued to provide military and technical training services as part of L3 Communications to U.S. personnel.<sup>83</sup> In Iraq, MPRI firm provided information on operations, locations and contracts.

PSFs possess legitimate business reasons remaining opaque. First, providing public information assists in a competitor's ability to compete. Competitors that are able to identify an opposing firm's business strategy based on announced completed projects have an advantage in future competitions. This is particularly true in cases where the firms competed for the same contract.<sup>84</sup> In these instances, the firm that failed to win the contract knows their contract characteristics and who won the bid. The losing firm is in a better position to de-construct the winning bid because the winning company is often unaware of the competitors. Second, PSFs ineffectiveness and failure could result from conflict volatility where transparency on projects unfairly and negatively effects the

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<sup>83</sup> Eventually, MPRI and other components of L3 Communications formed Engility. Engility assists with USAID Feed the Future program and is listed on the New York Stock Exchange. Engility emphasizes performance and professionalism by highlighting development projects, increasing the transparency level of the company.

<sup>84</sup> Many larger firms have business units that specialize in forecasting competitors bids. These units attempt to construct potential rival's bids to ensure their firm's bid is better without sacrificing a contract win.

firm's reputation. Third, illuminating projects in unstable areas is a potential media liability if political circumstances change. For example, the initial phases of the Iraq War were more popular domestically in the U.S., bolstered by the rally-a-round-the-flag effect, quick defeat of regime forces and “mission accomplished” announcement. Yet, public support for the war deteriorated as no weapons of mass destruction were found and the insurgency caused significant U.S. military casualties. For PSFs operating in the conflict, initial involvement may have bolstered business while PSFs latter periods exposed the PSFs to the general unpopularity of the conflict. In many cases, reducing transparency levels is a legitimate business calculation.

Transparency is a potential liability for firms that engage in nefarious behavior. Perhaps the best known PSF in Iraq was Blackwater. Blackwater was involved in several high profile incidents involving civilian casualties, perhaps the most significant occurring in Nisour Square in Baghdad resulting in the death of 17 Iraqis. This and other events prompted Blackwater to change names to Xe, and they have since re-branded to Academi. The name changes have coincided with an increased effort at transparency in an attempt to rehabilitate their public image without changing offered services. Despite the reputation for violence, Academi is capable of delivering more aid containers globally than the International Red Cross (Carmola 2010). Additionally, the firm is able to provide security services following natural disasters.<sup>85</sup>

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<sup>85</sup> Approximately 150 Blackwater employees operated in New Orleans after Hurricane Katrina. Immediately following Katrina, the number of PSFs registered in Louisiana spiked from 185 to 235 (Scahill 2005).

Transparency assists PSFs in moving away from the mercenary label, a desired demarcation from the stereotypes. Mercenaries are illegal under international law and association with the label damages business (Chesterman and Lehnardt 2007; Gaston 2008). For example, transparency in recruitment of personnel allows employers to identify the types of personnel employed by the firm. While mercenaries often conduct illicit recruitment of individuals through private networks, PSFs compete for employees in a manner consistent with any other company. Advertising for position openings and hiring practices that are consistent with international standards enhances a PSF's reputation for integrity and professionalism. This is particularly significant in cases where firms are recruiting armed personnel for contingency operations. Previous generations of PSFs such as Executive Outcomes cloaked their recruitment in secrecy. Intentionally or not, this recruitment behavior contributed to outside actors labeling the firm as a mercenary organization (Holmqvist 2005, 6). Transparency in recruitment provides protection mercenary accusations.

Reputation is critical to business success of PSFs due to market competitiveness (Spearin 2001). Transparency provides information on successful projects, providing positive publicity for the firm. Establishing a reputation for completion and success in various conflict environments signifies to multiple employers a firm's capability for project completion. In an era of global government spending reductions, the diversification of employers is essential to long term financial success. Despite the potential for biased information from the firm concerning the success or failure of specific projects, providing principals with information that is costless to them reduces

the resources that the principal must expend to gather the same information.

Transparency becomes a form of free advertising, particularly in the internet age where companies often provide information on professionally designed websites. The major difference is the increased transparency of the firm through press releases and briefings. The transition from secrecy to transparency reflects the larger global trend that is focusing on the provision of services. The international market requires firms to provide an account of behavior and operations in order to secure future business.

International regulation of PSFs is largely absent as national governments continue to debate the legality and usefulness of PSFs. Affiliation with a non-government organization (NGO) that maintains code of conducts for members is an additional component of firm transparency. Membership in an organization that requires professional behavior of members reduces the likelihood of illegal behavior in conflicts, as the organization provides self-reporting and policing mechanisms to its members. For example, the International Stability Operations Association requires its members to follow humanitarian and human rights laws and “be open and forth coming on the nature of their operations (ISOA 2013).” Similarly, the British Association of Private Security Companies “aims to raise the standards of operation of its members and ensure compliance with the rules and principles of international humanitarian law and human rights standards (BAPSC 2013).” These organizations regularly publish information on member contracts and missions. Additionally, organization such as the United Nations that increasingly employed PSFs require commitments to professionalism by contracted firms (Ostensen 2011). The importance of professionalism for the U.N. is critical for

operations, particularly as the U.N. now purchases more services than goods and has adopted formalized rules for recruitment of firms (United Nations 2006; Utting and Zammit 2006).

Diminishing the information asymmetries achieves cross cutting effects for the firm. In the near-term, increased transparency restricts behavior and requires heightened performance. However, in the long-run, firm transparency advantages those firms that are best able to demonstrate capability and success. The increasing competition in the global private security market requires that firms pursue all opportunities to secure future employment. Increased transparency of PSFs reduces information asymmetries between the employer and the firm. This can include operational specific information and service capacity. Employers benefit from the decrease in the information gap as transparent PSFs are more likely to complete contracts in order to protect reputation and secure future contracts. PSFs benefit from transparency by highlighting firm success and marketing benefits for future employment. The lack of employer's organizational capacity for oversight, particularly evident in Iraq, is bolstered by hiring transparent firms. Thus, the level of a PSFs' transparency is argued to influence performance and ultimately conflict outcomes. Transparent firms are expected to be more efficient and in this analysis be associated with decreases in violence. This expectation is formalized below.

*Hypothesis 1:* In Iraq, PSF performance is likely to increase as a PSFs' transparency levels increase.

## *Research Design*

### **Dependent Variable and Estimation Technique**

Ideally, PSF effectiveness would be measured based on their contracted service requirements. For example, firms hired to provide electricity would be measured based on electricity production. However, the same conflict conditions that often required PSF involvement also limit systematic data availability.<sup>86</sup> This analysis leverages levels of violence, specifically insurgent attacks and civilian fatalities, as a proxy for PSF effectiveness because implementing law and order was a primary objective of U.S. forces (Crane and Terrill 2003; Jones et al. 2005). Reductions in violence capture both direct and indirect effects of PSFs. PSF services are essential to the U.S. military's ability to conduct operations (CWTC 2011). When firms provide armed security effectively, reductions in violence are expected. Similarly, when firms provide unarmed services such as electricity, billeting (housing), and food services to soldiers, the services enable the military to better perform operations.

The following section outlines the procedure to generate the dependent variables and run the analysis. Two dependent variables are derived based on the individual performance of each PSF influence on insurgent attacks and civilian casualties. *Firm effectiveness* captures PSFs' influence on insurgent attacks and civilian fatalities. The variables are coded into three categories measuring whether the firm had no effect, a positive and statistically significant, or a negative and statistically significant influence

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<sup>86</sup> Electricity is perhaps the best alternative performance measure, as the Iraqi government has some province specific data. However, it is not systematic or consistent, making it ill suited for time-series analysis.

on violence levels in Iraq. Ordered logistic regression is used to examine the influence of transparency on PSF performance. The remainder of this subsection outlines the data and procedures to generate the dependent variables.

Two measures of violence in Iraq are used to generate two dependent variables. First, Monthly insurgent attack totals were collected from unclassified U.S. Central Command reports from January 2004 to August 2008. There were approximately 16,660 attacks during the period. Baghdad experienced the highest average of attacks in Iraq while each of the 18 provinces sustained periods of high (over 5) attacks. Second, the number of civilian casualties for each province--month collected by the British think tank Iraq Body Count (IBC) were used (Iraq Body Count 2012). The Iraq Body Count independently varies each causality because of the significant variance in the number of Iraqi civilian killed during the conflict.<sup>87</sup> The IBC lists approximately 115,515 individuals killed during the conflict when U.S. or Coalition forces were in the area.

Data on PSF operations in Iraq was gathered from the U.S. Census Bureau and contained 1,902 different contracts for approximately 608 different companies in Iraq from 2004 to 2008. Each contract, not company, was coded within one of the 18 Iraqi governorates using information on cities, base locations, and forward operating bases. This procedure enables companies with more than one contract and more than one province to be properly identified. The data was then transformed from contract level to province-month-year format by expanding each contract based on when the contract

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<sup>87</sup> Estimates for Iraqi casualties range between the Associated Press's forty thousands and the *The Lancet's* eight hundred thousand deaths estimate for the period 2003 through 2006 (Burnham et al. 2006; Roberts et al. 2004).

started and its duration. The expanded data was then collapsed in order to generate firm specific variables. A variable capturing the total number of employees from each PSF was created. The variable captures whether that specific PSFs operated in the particular province during a particular month.<sup>88</sup> Employee totals were based on individual contracts and were aggregated if the same company maintained multiple contracts during the province month. Employee totals ranged from 1 to over approximately 7,000 across all contracts. Employee totals capture variation in PSF involvement that occurred due to volatility in the demand for services during the conflict.

A two stage estimation procedure is used to create the trichotomous dependent variables *firm effectiveness attacks* and *firm effectiveness causalities*. The first stage involves estimating individual firm specific coefficients and the second stage uses the coefficients to examine the influence of transparency on PSF performance. Employee totals from each individual PSFs were separately included into a negative binomial model of insurgent attacks to generate specific coefficients.<sup>89</sup> Uniform controls and specifications are implemented to ensure consistent estimates.<sup>90</sup> The estimation procedures follow model 1 from Table 3.<sup>91</sup>

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<sup>88</sup> A PSF is considered operating in a province for a particular month if the contract included at least 15 days in that month. This strict coding requirement increases the likelihood that PSFs operated in the month.

<sup>89</sup> *Insurgent attacks* is a count variable that demonstrates over-dispersion, so negative binomial regression is recommended (Hible 2009; Long 1997).

<sup>90</sup> Multicollinearity and data limitations reduced the utility of estimating coefficients for all PSFs in the same model with no controls and no constant. In order to generate firm specific time-series data, analysis required the provision of province, contract start month, and contract duration. Approximately 133 companies were dropped due to limitations in one or more of these categories. Multicollinearity was a significant problem due to idiosyncrasies of the data generating process. Contracting in Iraq was based on U.S. military requirements which generated conditions where multiple firms would sign similar contracts. For example, approximately 70 firms signed in the summer of 2006 for operations in Baghdad with 7, 8,

Tables 13-15 contain estimated coefficients for each company's influence on insurgent attacks. The tables report change in predicted probabilities for each company based on an increase of fifteen employees from the PSFs' mean.<sup>92</sup> PSFs are listed in

**Table 13 Individual PSFs with Negative Influence on Insurgent Attacks**

Company Name (Impact)
Perini Corporation (82)
Akkan Construction (55)
Haeder Ali Mageed (44)
Melik Al Misk (30)
Perini Corp. (26)
Adv. Engineer. and Services (21)
Bates Pan Gulf (21)
Future For Const. Comp. (17)
Mohamed Abulrahman (13)
Anixter (8)
A'aali Altammeer Company (8)
ECC (6)
Jamahaer Contracting (5)
EDO Communication and Countermeasures (4)
Almco (4)
MGT Group (3)
AAFES (3)
77 Construction Company (2)
Al Biddiery (1)
Ashour General Const. (1)
Contracting Co. (0)
DHL (0)
ERINYS Intl. (0)

or 9 month durations. These contracts operated as bridges from the initial contracts, specifically the invasion to the new calendar year. As a result, many expired on January 1st, 2006. New contracts and potentially new PSFs secured contracts after the January date because the need for services persisted beyond the arbitrary date. However, in the dataset these procedures generated numerous firms that were highly collinear and subsequently dropped from the analysis.}

<sup>91</sup> The control variables used in the first stage include *U.S. Military*, *Coalition Forces*, *Iraq National Guard*, *Conflict Start* and *Net ODAPc*.

<sup>92</sup> Companies that had less than fifteen employees are not included in the tables. There were 53 companies that had more than 1 employee but less than 15 employees.

descending order by change in predicted probability when moving from the PSF specific mean employee total by 15 employees. The 15 employee increase is an arbitrary number of employees but allows for consistent comparisons between companies. Using the first stage, positive coefficients for PSFs are associated with increases in the number of attacks while negative coefficients are associated with decreases in insurgent attacks. Table 13 contains the 23 PSFs that had negative and statistically significant (at 0.05 level) influence on insurgent attacks (and had more than 15 employees). The companies are listed in descending order based on change in predicted probability. KBR is a notable absence: the company had no significant influence on insurgent attacks in Iraq and is listed with ineffective PSFs in Table 14. Table 15 lists those companies with a positive and statistically significant influence on insurgent attacks in Iraq. Tables 14 and 15 are found at the end of the chapter.<sup>93</sup> Table 14 and Table 15 list the companies that had a positive effect on violence and no effect on violence, respectively. The same procedure was used to calculate PSFs influence.

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<sup>93</sup> Tables for coefficients on civilian fatalities are not included.

**Table 14 Individual PSF Efficiency Coefficient—Positive Influence**

Abrd Al-Hameed Rasheed (947)	Brigada (13)	Abdullah Training (3)
Al Adham (934)	GD of Dalo Company (12)	Ahmad Zangana Bureau (3)
ASARS (68)	CSC, INC (11)	Al Basheer (3)
Berger URS (49)	ADSI (11)	ATA Brothers Engin.(3)
Millennium Relief (42)	ITSI (10)	CAS, Inc. (3)
Eagan, McAllister Assoc. (41)	Add-on-Armor (10)	Conley and Assoc. (3)
BSCC-Iraq (40)	Hertz and DP Comp (9)	Dalo Const. Co. (3)
AIDery (38)	AUC (9)	EWAC (3)
Adelphi LLC (36)	Imshari Mohamed Mustafa (9)	Honeywell (3)
Bell Aerospace, INC. (35)	Command Liasion Element (8)	IDB (3)
Al-Murtaja Company (33)	Critical Solutions Inc. (8)	ABC Inc. (2)
Kalmar RT CTR (33)	Agility Logistics (8)	AL Sabah Comp. (2)
Abed Mohsen Rajab (30)	Ahmed Abood (8)	BAE Systems (2)
Comm. Support SVC (27)	Al Benian Contracting (8)	CHSS (2)
ACA (26)	AFCAP, URS Berger (8)	ESP (2)
DAI (25)	DPW (7)	FEDEX (2)
Mohammed Idham (25)	Chroo Co (7)	Fluor Security (2)
Daban Company (24)	AIEE (7)	IPBD (2)
Kelly Electric/NGMS P (24)	Chamber Corp. (6)	Karel Construction(2)
CACI INC-Federal (24)	CSC (6)	Qatar Inter. Trading (2)
JTSI INC (23)	ASFA COMPANY (6)	Advance Future Group (1)
C-RAM (4)	ELTA LTD (6)	DOS/RONCO (1)
Cana Catering C. (21)	Al Bare'a (6)	Groundworks Iraq (1)
Corimec Italiana S. P. A. (20)	Inglett and Stubbs Int. (5)	IRD (1)
Armor Holdings (20)	ASE/CSMI (5)	Jacob Sverdrup (1)
Kayteks (18)	AGS (5)	JB Management, Inc (1)
Motorola AIEE (17)	Ahamad Dabe CO	MCC (1)
DEEIA NAJM (16)	Dorce (4)	
Citadel Strategic Comm (16)	Dynacorp Int. (4)	
Controls (15)	C-RAM (4)	
ACS (15)	IGT and C (4)	
Costal Inter. Security (14)	Italbaton (4)	
Al Na'aem Co. (13)	ITT Federal Int. Corp. (4)	
AEPCO (13)	AAI Corp. (3)	

**Table 15 Individual PSF Efficiency Coefficient—Non-Influential Individual PSFs**

3D Computers	ENG Zaidan Al-Janabi	Mahmoud and Abdallat Co
Aegis Defense Services	Engineers Co	Maitham Bureau
Al Dabbous	EOD Technologies	Manda Company
Al Shita	Ethad Al-Sawaeed	ManTech
Al Shokh	Fikrat Bakir	Marcosyscom
Al Ssayad Co.	Fire Safety Eng. College	McDonnell Douglas
Al-Ehtemal	First Kuwaiti	McKinsey and Company
Amec Earth and Envir.	Force Protection	MKI/Jacob Sverdrup
American General Trading	General Atomics	Mohammad Hasan
Anham Joint Venture	General Dynamics C4	Mohammed Abdulla
Arab Water Treatment	GGC-TTM	MPRI
Arinc	Ginn Group	MTS (Comtek)
AAF Exchange Service	Global Security	Muayad Qassim
ASC Lumber	Golden Company	Multaka Radio
Atlas for GIS	Gould and Associates Global SVC	Mutual Telecom Services
Azbell Electronics GSD	Hamorabi State Con. Co.	Najlaa General Trading
Babylon Gates	Harbi Beareau	NANA Pacific, L.L.C.
Back Scatter	Hercules	NASA LTD
Batnaya Bureau	Information Manag. Group	Information Manag. Group
BCP International Limited	Iraq Al-Aman Center	Iraq Al-Aman Center
Bearing Point	JLG	Navigator
Bell Pottinger	Jonathan Tait-Harris	Nawarus Dijlah
BKC	Jorge Scientific	Northrup Grumman
Black Gold	Juliet Company	Oberon
Blue Marine Services	KBR	Original Etimad Company
BMS (LH)	Kirkuk Messenger	Oshkosh
Boeing	Kulak Con. Co	Ozgen
Comtech Mobile Datacom	ISS-I (L3)	Ozgoren and David's Co
Daoud and Partners Co.	Laguna Con. Co. Inc	PGSI
Dataline	Lara Group	PCVision
Datapath Inc.	Lincoln Group	Peter Boyles
Davut (LH)	Lockheed Martin I. Tech	PIGS Unlimited
Dimensions International	Logistics Environment	Piril Construction
DSR	Louis Berger Group	PKMM INC
EAI	LSI	PMA Services LTD
ECOLOG	Lucent	PWC
EGG	Maaco	Ra Ali
Elta Ltd.	Mabey Johnson	
EMTA Construction Co	MADAHCOM	

The second stage of the analysis tests hypothesis 1. In order to examine transparency's influence on PSF performance, the coefficients generated in the first stage are transformed into a trichotomous dependent variable. The raw coefficients are transformed to ensure because of estimation problems. The trichotomous coding mitigates estimation errors, as the procedure is more likely to correctly identify the direction of the PSF's influence than precisely identify firm influence. *Firm Effectiveness Attack* is coded as 1 if the firm had a negative and statistically significant influence on insurgent attacks. *Firm Effectiveness Civilian* is similarly coded. The inverse value is used because the goal of US operations and those PSFs assisting the US was to reduce violence. PSFs that had no effect on insurgent attacks are coded as 0. PSFs that were associated with increases in violence were coded -1. The combined dataset for the analysis contains approximately 300 PSFs in Iraq.

Ordered logistic regression with robust standard errors is employed to examine hypothesis 1. The unit of analysis is the firm, and firms are pooled into one sample. The estimation procedure is captured in equation 4.1. In the equation, *Firm Effectiveness (Attack and Civilian)* is  $\alpha^*_{(i)}$ , where  $\alpha^*_{(i)}$  is coded as 1 if firm ( $\alpha^*_{(i)}$ ) had a positive coefficient and zero if it had a negative effect. Equation 4.1

$$\alpha^*_{(i)} = \beta_{(0)} + \beta * Transparency + \sum_{i=2}^j \beta_{(i)}z_{(i)} + \mu$$

where  $\beta_1$  is the coefficient for each explanatory variable with *Transparency* as the key variable with  $j$  variables, and  $\mu$  refers to the error term. Interpreting the variable is as follows: negative coefficients on the *transparency* variable represent decreases in

insurgent attacks, or negative coefficients represent an improvement in effectiveness due to PSFs efforts towards reducing violence levels in Iraq.

### **Key Explanatory Variables**

Firm transparency is captured using two variables. First, *website* is coded as 1 if the PSF has a website and 0 otherwise. Maintaining a website provides basic information on the PSFs' operations, locations and services. In the sample of 316 companies used for comparison, approximately 119 maintained a website. There was not a systematic pattern based on specific services because most firms in the analysis provided more than one service in Iraq. In order for a PSF's website to be counted, it had to be in operation during the time the firm was in Iraq, as transparency is only beneficial to the government prior to and during an operation. Verification of the website's age was identified based on website archives, postings, blog references, and other additional information.<sup>94</sup>

Second, *press release* measures if PSFs provided publicly available information on services and operations. The variable is coded 1 for firms that provide additional information and 0 otherwise. Unfortunately, differentiation amongst the quality of information available from the press release was not coded. In some instances, press releases were little more than stock price or investor meeting announcements while detailed information on projects was provided in other cases.<sup>95</sup>

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<sup>94</sup> *Website* was coded as 1 unless evidence was found that demonstrated the website was more recent than the time the firm operated in Iraq.

<sup>95</sup> Undergraduate coders were utilized to code this variable and collect the press releases. Low inter-coder reliability on the content of the press releases resulted in using the dummy coding. The coders were able

## Control Variables

Firm specific control variables were generated for the second stage of analysis. *Corporate Structure* is coded 1 if the PSF was publicly traded and 0 otherwise. Publicly traded firms are those that appear on national stock exchanges. Controlling for corporate structure is required as publicly traded firms are less prone to shirking in conflict environments.<sup>96</sup>

*Province ID* is a factor variable that codes each of Iraqi 18 provinces. The variable assists in controlling for considerable ethnic, social and political heterogeneity in Iraq. Additionally, the level of violence and the presence of PSFs vary considerably across the provinces. The variable ranges from 1 to 20 as Iraq wide and PSFs that operated in more than 1 province are coded separately based on ability to identify a specific province.<sup>97</sup>

*Year founded* is a dummy variable capturing when the PSF was founded. The variable is coded 1 for those firms founded in 2001 or later and 0 otherwise. The measure is a proxy for PSF competency, as long tenured firms are more likely to deliver consistent services. This variable is controls for the potential that competency is endogenous to transparency. The variable collected from PSFs' websites or SEC filings.

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to consistently identify whether a firm provided a press release but were inconsistent in coding the content of the press release. I checked each inconsistency to generate the dummy variable.

<sup>96</sup> Additional control variables for competition and contract structure severely reduce the sample size. Because many firms had multiple contracts, identification of competition and contract structure for the firm is not possible. When controlling for competition and contract structure, however, the results are substantively similar to the presented results despite extremely small sample sizes.

<sup>97</sup> PSFs, in cases it was not possible to identify the province in which they operated, are not included in the analysis because they were dropped from the first state.

In cases when the founding year cannot be established, the case is dropped from the analysis. This procedure results in the loss of observations due to missing information.

### *Results*

Tables 14 & 15 contain the results of PSFs' transparency on firm effectiveness. Model 1 and model 5 provide the benchmark tests of hypothesis 1. *Firm Effectiveness* in models 1-4 is calculated on coefficients produced using civilian casualties. The dependent variables in models 5-8 are based on coefficients using insurgent attacks. The variation in number of observations between models is due to different data samples and data structures. Additionally, it is important to recognize that different companies are contained within each estimation sample, restricting direct comparisons between sets of models.

*Firm Effectiveness Casualties* is the dependent variable in models 1-4 in Table 16. Model 1 provides the benchmark test of hypothesis 1 and finds support that transparency improves performance. Interpreting the odds ratio for *website* in model 1, the results suggest that PSFs that maintain websites are 1.7 times more likely to reduce civilian casualties than firms that do not maintain a website. The addition of *press release* and *corporate structure* increases the odds ratios associated with the *website* variable. When including these two variables, the influence of websites increases by approximately 78 percent, as firms with websites are 2.19 times more likely to reduce civilian casualties than firms that do not.

**Table 16 Transparency's Influence on PSF Performance: Civilian Casualties**

	Model 1	Model 2	Model 3	Model 4
	<i>Odds Ratio</i>	<i>Odds Ratio</i>	<i>Odds Ratio</i>	<i>Odds Ratio</i>
Website	1.715*	2.224*	2.195*	1.357
	(0.566)	(0.946)	(0.934)	(1.315)
Press Release		0.607	0.582	0.868
		(0.312)	(0.301)	(0.513)
Corporate Structure			1.487	1.335
			(0.569)	(0.957)
Year Founded				1.205
				(0.666)
Province ID	Repressed	Repressed	Repressed	Repressed
Log Likelihood	-237.8	-237.3	-236.8	-94.31
Wald Test ( $\chi^2$ )	98.09	99.03	100.1	16.96
Observations	326	326	326	119

Standard errors parentheses

Two Tailed test: † p<0.001, \*\* p<0.01, \* p<.05

The results for *press release* are, at first glance, inconsistent with hypothesis 1. The variable fails to achieve statistical significance levels under each model specification, suggesting that it has limited influence on PSF performance. Two explanations account for this discrepancy. First, the coding of *press release* is not accurately capturing the quality of information provided by the firms. Because the variable captures all firm information releases, the variable fails to differentiate between information quality, thus, confounding the influence of transparency on the government's ability to provide oversight and reduce shirking. Second, *press release* and *website* are highly correlated (0.71). When *website* is dropped from the analysis, the influence of *press release* on *Firm Effectiveness Causalities* remains consistent.

Province variation is particularly important when considering Iraq's ethnic, economic, and social heterogeneity. Therefore, *province ID* is included as a factor variable in each model in the analysis. The odds ratios are suppressed from the tables because they are not of primary interest in the analysis.

*Corporate structure* does not achieve any level of significance in the analysis. The result remains consistent across each of the various model specifications. For the analysis in chapter II, the results are troubling. However, numerous model specification differences including variable construction and observation numbers likely influence the results. More importantly, the analysis in this chapter purposely did not control for other PSFs' involvement in particular provinces in order to generate consistent company coefficients. It is possible that publicly traded PSFs are better able to coordinate and benefit from PSFs operating in the same areas than individually owned firms. While these results cast some doubt on the chapter II conclusions, it is likely that the lack of influence is driven by modeling idiosyncrasies.

Model 4 includes *year founded*. Severe data limitations reduced the number of observations in sample in model 4. When including the dummy variable, *website* and press release in model 8 no longer influence civilian casualties. As a robustness check, the results suggest that the data generating process for insurgent attacks and civilian casualties is different. It is possible that PSFs that cloak their operations in secrecy are more likely to generate grievances due to collateral damage than are transparency firms. Under these conditions insurgents may target U.S. and coalition forces as a response to

PSFs operations, thus avoiding increases in civilian fatalities and an increase in insurgent attacks.

Table 17 provides the results when examining the influence of PSF transparency on insurgent attacks. Model 5 provides the baseline analysis of hypothesis 1, and the result supports hypothesis 1. When interpreting the odds ratio for *website*, which has a negative and statistically significant influence on insurgent attacks, firms that maintain a degree of transparency are 1.87 times more likely to reduce insurgent attacks. *Website's* results remain substantively consistent in models 6-8. When using model 8, PSFs that maintain websites are 2.13 times more likely to reduce violence than those that are not. *Website* remains consistent in each model specification including model 8 with the inclusion of *year founded*.

Inconsistent with results in Table 16, *press release* is consistently associated with increases in violence. This relationship is expressed as a negative odds ratio. In model 6, the results for *press release* are interpreted as firms releasing information are 1.23 times more likely to be associated with insurgent attacks than firms that do not. Upon first inspection, the results are opposite the hypothesized relationship. However, the variable is likely detecting a different effect than improvements in government oversight associated with transparency. High collinearity and variable construction remain concerns with the variable. Additionally, inspection of the companies that do issue press releases provides alternative expectation. Press releases are a free form of advocating and PSFs have incentives to improve their public image by providing (partial) updates

on operations. For example, firms such as Titan, Dynacorp and L3 provide press releases but are also accused of nefarious activities in Iraq. Unlike websites, which

**Table 17 Transparency's Influence on PSF Performance: Insurgent Attacks**

<i>Variable</i>	Model 5 <i>Odds Ratio</i>	Model 6 <i>Odds Ratio</i>	Model 7 <i>Odds Ratio</i>	Model 8 <i>Odds Ratio</i>
Website	1.870* (0.695)	3.331** (1.690)	3.271** (1.667)	8.406* (10.40)
Press Release		0.379* (0.221)	0.378* (0.222)	0.291* *0.205)
Corporate Structure			1.171 (0.494)	1.800 (1.426)
Year Founded				0.793 (0.493)
Province ID	Repressed	Repressed	Repressed	Repressed
Log Likelihood	-221.4	-220.0	-219.9	-78.40
Wald Test ( $\chi^2$ )	66.13	68.92	69.06	34.28
Observations	278	278	278	278

Standard errors parentheses

Two Tailed test: † p<0.001, \*\* p<0.01, \* p<0.05

provide general information for multiple employers, press releases are often more focused on specific issues and operations. There are limitations to this line of argument—mainly that the most aggressive firms (Blackwater, MPRI) do not provide any data beyond a basic website and contact information. The influence of *press release* on insurgent attacks remains largely consistent in each model specification. The two control variables, *corporate structure* and *year founded* fail to reach accepted levels of statistical significant, which is consistent with the results for civilian casualties.

In sum, the results provide support for hypothesis 1. Transparency influences firm effectiveness, but the results are limited compared to findings in chapter II and IV. Result fragility is partly due to difficulty in producing the firm specific coefficients and

high collinearity between the explanatory variables. The results do provide initial support that transparency improves PSF performance, which in this analysis, is associated with reductions in violence.

### *Conclusion*

Transparency influences PSF effectiveness by reducing the likelihood of shirking and improving the capacity for government oversight. In Iraq, more transparent firms were associated with reductions in civilian casualties and insurgent attacks when compared to less transparent firms. Transparency was measured based on whether a PSF maintained a website at the time of the Iraq war and if the PSF provided press releases on operations. The results generally support hypothesis 1 despite data availability limitations, mutli-collinearity, and poor variable construction reducing the precision of estimates. Further evaluation of hypothesis 1 requires better measures of PSF transparency by including other forms of communication. Press releases specific to projects and announcements from the firm are potential options. Moreover, the importance of media coverage was not addressed. Media may provide a check on PSF behavior through exposure, but it is likely to be biased in favor of negative news.

The theoretical implications from this research suggest that information has a powerful influence on PSFs' performance and conflict outcomes. For employers of PSFs, the results suggest that developing coherent and consistent reporting mechanisms must be a priority. The lack of oversight capacity severely reduced the effectiveness of U.S. military operations in Iraq. Though this research focuses on the principal--agent dynamics between an employer and PSFs, the results have implications for democracies

that employ PSFs. The results suggest that firm transparency may influence the degree to which a democratic audience is capable of holding political leaders accountable for contingency operations. For example, consider the disparity in news coverage between the Jessica Lynch case in Iraq and 3 U.S. employed contractors in Columbia. In the case of Jessica Lynch—a U.S. Private First Class soldier that was captured by terrorists and rescued by U.S. special forces—there were 98 news articles published during her 22 day ordeal. In the case of the 3 contractors, their two year imprisonment by drug cartels resulted in roughly 76 news articles.<sup>98</sup> Firm transparency may influence the potential for political leaders to obfuscate conflict involvement by using contracts.

This research bolsters global initiatives to increase transparency in the private security industry. Altering PSFs' conflict behavior requires either legal action or changes in the international market. The lack of international professional and operational standards reduces transparency, further limiting the oversight of countries in which PSFs operate. This research addresses transparency from vantage point of the employing state, not, the states in which PSFs are most employed. Developing global operating standards would assist in regulating PSFs in those countries that lack the institutional capacity to do so themselves. Alterations in the international private security market would require employers restricting contracts to transparent firms. The establishment of non-governmental organizations designed to promote professional—e.g. International Stability Operations Association—represents attempts at self-regulations, but it remains unclear if these organizations actually influence member firms' conflict behavior.

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<sup>98</sup> Avant (2006) provided the specifics for this example.

There are significant limitations in the utility of transparency as a mechanism to influence PSFs effectiveness. First, transparency is not a mechanism controlled by the employer. Instead, current market conditions favor transparent firms for the entire range of services. However, the international market is likely to evolve making the importance of transparency uncertain. Though many PSFs have stated commitments to work exclusively for democracies and democratic ideals, there is no guarantee that this will be the case in the future. PSFs' employers need to develop alternative mechanisms to regulate performance.

Finally, though Iraq is a suitable conflict to test the hypothesis, it is only one case. Future research expanding to other conflicts and other types of inventions is required. Continued global reliance on PSFs suggests that Iraq was one instance in a growing trend. In order for employers to maximize the benefits of PSFs, mechanisms that force firms to be more transparent are required.

## CHAPTER V

### CONCLUSIONS ON CORPORATE SECURITY AND CONFLICT OUTCOMES

#### *Private Security Firms in Conflicts: General Implications*

This research was motivated by questions concerning the role of PSFs in conflict environments. Despite their presence in many conflict situations, international relations scholars have largely failed to provide systematic research on their influence. This dissertation is an initial step to including a prevalent non-state actor into conflict studies. Examining the influence of PSFs was divided between characteristics of the firm and the condition of the international market. First, do the economic characteristics of PSFs' influence their effectiveness in conflict environments? Second, how does the international market for private security impact PSFs effectiveness? Working from these two questions, this research explored specific questions about corporate structure, international competition and firm transparency.

Empirically, the research results demonstrate the importance of PSFs in conflict environments while specifying conditions that shape their behavior. The empirical analysis demonstrates that PSFs' influence varies in statistically predictable ways. In the second and fourth chapters, firm specific characteristics were explored using corporate structure and firm transparency. In both cases, characteristics influenced their propensity to shirk in predictable ways. The results for corporate structure demonstrate that who provides services is often as important as the services they provide. The results for transparency confirm perceptions that secrecy likely increases shirking, as transparent firms were more likely to decrease violence than were opaque firms. The

implications from the international security market were explored in chapter III. Competition is shown to increase effectiveness. This chapter emphasized the contractual relationship that governs all PSF activity by examining contract structure. The results demonstrated that contracts that reduce performance incentives are more likely to result in shirking. Substantively, the research captures the importance, and absence, of government oversight in Iraq and oversight's importance on a broader scale.

The analysis generated several policy implications. First, chapter III demonstrated that increased competition improves performance. Expanding the implications, it could be argued that despite limited regulation, allegation of abuse, and oversight limitations, increasing the number of PSFs operating internationally improves performance. Incidentally, this is similar to arguments made by advocates of the profession (Brooks 2000; Bures 2005; Spearin 2001). However, recommendations solely based on pieces of the research are misguided. Overall, the general pattern that PSFs tend to shirk unless mechanisms are in place to prohibit that behavior indicates that alternatives to increasing the number of PSFs are likely a better option. Alternatively, reducing the amount of funding available for private security services could increase competition. Given the continued growth of the industry and the market, it is unlikely that reductions in demand will be occurring in the near future. The growth of the market has additional implications for this research

Second, the continued and expanding demand for private security services potentially condition the effectiveness of firm transparency. Under current market conditions, firms are encouraged to be transparent, but there are no national or

international regulations on behavior. It is possible, but unlikely, that the international demand will revert to conditions similar to the early 1990's when PSFs operated similar to mercenaries. Yet, while the industry on the whole moved away from high profile instances of heavily armed PSFs---particularly the operations of Executive Outcomes (EO) in Angola and Sierra Leone, French company Eric SA recruitment of forces for former Democratic Republic of Congo leader Mubutu---incidents involving Blackwater in Iraq surfaced. Given the rapid changes in the international market, relying on market forces to perpetuate transparency requirements is an unstable policy. Instead, the research results suggest that national and international employers formalize rules and regulations to ensure transparency when employing PSFs.

#### *Final Comments*

This project makes several contributions to the broader international relations literature. First, the policy importance of the research is clear: private security firms are not a panacea in their ability to provide security. A theoretically based understanding of PSFs' impact on conflict is critical for PSF employers due to international market expansion. By providing a theoretical frame of reference and empirical tests to examine PSFs involvement in conflict, this project provides insight on the future capabilities and influences of PSFs. National policies of states that employ PSFs, particularly of the U.S, U.K., and France, have largely been shaped in the absence of empirically tested hypotheses.

While focusing solely on Iraq, this project captures the internationalization of private security due to data and research design. Firms operating in Iraq represented

dozens of countries and provided numerous services. Beyond advantages detailed in previous chapters—such as province heterogeneity, firm variation, and data availability—PSF involvement in Iraq continues. Unfortunately, Iraq remains a country that experiences violence and political instability. For the purposes of research, Iraq provides opportunities to examine the evolution in PSF services beyond the end of U.S. military operations. The circumstances provide an opportunity to track market changes and PSF responses while holding other factors (populations, geography, economy, etc.) relatively constant.

Second, significant domestic policy implications raised by this project relate to government budgets, military outlays and even questions of military power. For example, how does the allocation of a once public good affect the efficiency of military dollars spent in terms of generating conflict outcomes? Questions discerning whether PSFs are more efficient than national military forces have yet to be answered. Or if efficiency gains exist, does the transfer of military jobs to the PSFs actually benefit the economy? Furthermore, does the potential reallocation of military budget dollars away from the government and towards private entities shape not only defense budgets but political debates more broadly? If the trend towards privatization increases, smaller force structures, the reduction of military bases and creation of private sector jobs may represent the next iteration of national military forces.

Lastly, this project provides a theoretical and empirical foundation to explore fundamental questions about political accountability and PSF usage. Questions concerning whether the use of PSF alters political accountability and audience costs

heighten the broader impact of this project. Is the public as responsive to PSF casualties as military casualties (Koch and Gartner 2005; Gelpi, Feaver, and Reifler 2009; Mueller 1971) or does the use of PSFs allow politicians more foreign policy flexibility? More directly, do private firms alter audience cost dynamics for democratic and autocratic regimes? Are there stark differences in the use of PSFs by democratic and non-democratic actors?

This project initiates a line of research integrates prominent international relations theories and research lines. PSFs continued to alter how democratic states prepare for and execute war. PSFs increasingly shape competition between states and non-state actors for resources. For states, reduction in force structure and the increased reliance on private actors influences each phase of warfare including war preparations, combat operations, and reconstruction efforts. For non-state actors, PSFs' continued and expanding role in corporate security and peacekeeping operations embodies the growing inability (or unwillingness) of states to provide security. Private security firms have been and will continue to be a critical actor in the international system.

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