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THESIS

**PUBLIC-PRIVATE PARTNERSHIPS IN DEFENSE
ACQUISITION PROGRAMS—DEFENSIBLE?**

by

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December 2009

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**PUBLIC-PRIVATE PARTNERSHIPS IN DEFENSE ACQUISITION
PROGRAMS—DEFENSIBLE?**

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Submitted in partial fulfillment of the
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ABSTRACT

Public-Private Partnerships (PPPs) in defense have gained momentum in various countries around the world over the past decade. This research project explores the experiences and evolutions of PPPs in the United Kingdom (UK), the United States (U.S.), Australia, and Singapore. Each of these countries has its own unique fiscal system, operating environment, and defense focus. It is timely to study how defense PPPs has evolved around the world since their inception in the UK in the 1990s. Through the study of these four countries' journeys into defense PPPs, the objective of this project is to first determine whether there are any key common denominators that steer the countries toward the adoption of PPPs to meet their defense needs. The next objective is to determine whether PPPs are suitable for defense acquisitions. The final objective is to determine whether there are specific areas in defense that are more suitable than others for PPPs.

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LIST OF ACRONYMS AND ABBREVIATIONS

ABS	Accounting Standards Board (Australia)
ADF	Australian Defence Force
AECOM	AECOM Technology Corporation
BBC	British Broadcasting Corporation
BWC	Basic Wings Course
CBO	Congressional Budget Office (U.S.)
CONDO	contractor on deployed operations
DBFO	design, build, finance, and operate
DMO	Defence Materiel Organisation (Australia)
DoD	Department of Defense (U.S.)
EADS	European Aeronautic Defence and Space Company
EC	European Commission
EIB	European Investment Bank
EU	European Union
Eurostat	European Accounting Standard
FSTA	Future Strategic Tanker Aircraft
FY	fiscal year
GAO	Government Accountability Office (U.S.)
GDP	gross domestic product
HATS	Helicopter Aircrew Training System
HET	Heavy Equipment Transporter
HM	Her Majesty's (UK)
IFRS	International Financial Reporting Standards
IMF	International Monetary Fund
IPA	Infrastructure Partnership Australia
IT	information technology
MFTS	Military Flying Training Service
MHPI	Military Housing Privatization Initiative
MINDEF	Ministry of Defence (Singapore)
MOD	Ministry of Defence (UK)

MRO	maintenance, repair and overhaul
NAO	National Accounting Office (UK)
NPV	net present value
NSW	New South Wales
OCU	operational conversion unit
OECD	Organization for Economic Cooperation and Development
OMB	Office of Management and Budget (U.S.)
PFI	private finance initiatives
PPP	public-private partnership
PSC	public sector comparator
PWC	PricewaterhouseCoopers
RAF	Royal Air Force (UK)
RBTS	Royal Brunei Technical Services
Ro-Ro	roll-on/roll-off
RSAF	Republic of Singapore Air Force
RSME	Royal School of Military Engineering (UK)
RSN	Republic of Singapore Navy
SR	Sponsored Reserves
SRV	Submarine Rescue Vehicle
SSRV	Submarine Support and Rescue Vehicle
STS	Simulation, Training and Support (a division of Lockheed Martin)
TCA	transaction cost analysis
U.S.	United States
UK	United Kingdom
UKMFTS	United Kingdom Military Flying Training System
USD	United States dollars
VfM	value for money

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I. BACKGROUND ON PUBLIC-PRIVATE PARTNERSHIPS (PPPS) AND PPPS IN DEFENSE

A. INTRODUCTION

Perhaps the oldest in the world, the practice of different forms of privatization, such as—contracting out, partnership building, and marketization—goes back to the ancient time under the Persian World-State Achaemenid Empire (the first such state in World history)...For example, banks and financial firms (one Persian and one Jewish) in the Babylon satrapy collected taxes for the government and received fees from their contracted activities under the administration of Darius and Great King some 2,500 years ago. (Farazmand, 2001, p. 176)

The origin of partnerships between the public and private sectors in the delivery of public goods and services can be traced as far back as the first Persian Achaemenid Empire in (559–328 BC). The recent growth in worldwide popularity of a Public-Private Partnership (PPP) model—first introduced by government of the United Kingdom (UK) in the early 1990s—takes the evolution of PPPs to new heights. Currently, PPPs take many different forms and definitions. This chapter sets the stage for the subsequent discussion of “*Public-Private Partnerships in Defense Acquisition Programs—Defensible?*” by first defining PPPs, and thereby differentiating PPPs from traditional procurement and privatization. This is followed by an overview of the global movement of PPPs, with primary focus on defense PPPs. Next, the evolution of research themes on PPPs from the 1990s to the present will be discussed and the chapter will conclude with the framing of research questions for this project.

B. DEFINING AND DIFFERENTIATING PPPS

According to Her Majesty’s (HM) Treasury (UK) public-private partnership Web site:

Public private partnerships (PPPs) are arrangements typified by joint working between the public and private sector. In the broadest sense, PPPs can cover all types of collaboration across the interface between the public and private sectors to deliver policies, services and infrastructure. Where

delivery of public services involves private sector investment in infrastructure, the most common form of PPP is the Private finance initiative. (HM Treasury (UK))

There is, however, no standard definition for PPPs, which vary from country to country, organization to organization, and stakeholder to stakeholder. Some view PPPs as a politically motivated and opaque terminology to further the government's political interest.¹ The view of PPPs as a language game was purported by academics such as Linder (1999), who suggested that the government essentially replaces the term "privatization" or "contracting out" with "partnership," a new buzz word, and Hodge and Greve (2008), who refer to the term PPPs as "public policy language games" tailored to suit the political objectives, confusing, rather than clarifying and explaining, the purpose of partnerships.

Putting aside the heated debate over the definition of PPPs, this research project anchors the discussion of its research topic around the characteristics of PPPs as described in the next paragraph and, for the purpose of this research project, PPPs will be defined as a form of agreement between the government and the private sector (private companies and financiers) working together toward the common goal of effective and efficient delivery of public services, through cooperation and optimal risk-sharing. The preceding definition of PPP draws on the common themes found in the various PPP definitions used by credible world professional bodies.²

One of the most popular forms of PPPs is private finance initiatives (PFIs), which typically involves design, build, finance and operate (DBFO) programs. The term, "PFIs" is commonly used interchangeably with PPPs.³ Today, PFIs dominate the global PPPs arena (Broadbent & Laughlin, 2003) and are the focus of this research paper. The general

¹ Flinders (2004) viewed PPPs as "government on a credit card," which enable the government to garnish electorate advantages as government is in a position to promise and deliver the public good and services that might not be possible under traditional procurement due to various constraints (for example, lack of funding).

² Namely, the Organization for Economic Cooperation and Development (OECD), the International Monetary Fund (IMF), the European Investment Bank (EIB), and Standard and Poor's (see Appendix A).

³ As some of the literatures cited in subsequent discussion used PPPs interchangeably with PFIs, for the purpose of this research project, "PPPs" shall have the same meaning as "PFIs."

characteristics of PFIs often involve the construction of new assets by the private sector for the provision of public services over a long period of time⁴ and with the public sector defining the service requirement “output” in terms of quantity and quality. The emphasis is on an optimal transfer of risk to the private sector to provide sufficient “incentive,” such as no payment until services are provided, to ensure efficient operations. The public sector and/or the direct end-user would pay for services provided. At the end of a PFI agreement, the public sector can opt to become the owner by paying the contractually agreed residual value, which is usually independent of the actual market value of the asset at that point in time. In short, the government bears the residual value risk.

The Organization for Economic Cooperation and Development (OECD) described PPPs as “situated between traditional procurement and full private provision” (OECD, 2008, p. 21). According to OECD (2008), the distinguishing factors are risk transfer and mode of delivery. In the case of traditional procurement, the government is wholly responsible for the entire spectrum of acquisition activities—from cradle to grave—involving:

- Design: based on requirements (quality and quantity) identified by the government. Design is performed in-house, outsourced, or jointly developed with the private sector.
- Build: comprises procurement of goods (capital assets) and related services from the private sector.
- Finance: entails sourcing and obtaining the requisite funding by the government, either from its revenue collection, increased taxation, or issuing bonds.
- Operate: entails the delivery of services generated by the capital assets comprising maintenance, upgrade, and disposal. Typically, these activities are carried out through a combination of in-house efforts and outsourcing.

In a traditional procurement, the government bears the risk in the service delivery. At the opposite end of the continuum from traditional procurement is full privatization—where the private sector fully takes over the role of the government in the DBFO activities in providing the services (including free rein to set the prices) to the end users directly. The government is thus out of the picture and the private sector bears the service

⁴ Usually over the economic life of the asset (between 10 to 20 years, with some as long as 30 years).

delivery risk. In the middle of the continuum are PPPs, where the private sector essentially takes over all the DBFO activities. The key distinction from privatization is the “partial” involvement of government throughout the DBFO (i.e., in setting the quality and quantity requirement, in ensuring private sector compliance to agreed output specification, and in negotiating for the prices of services provided by the private sector using the capital assets). The comparison is illustrated in Table 1 using a hypothetical case of an air-grading program for the selection of candidates for a military pilot training program:

Table 1. Comparison of Traditional Procurement, PPP, and Privatization Using a Hypothetical Case of an Air-Grading Program

	Traditional Procurement	PPP	Privatization
Design	Government prescribes the design through detailed specification of the course syllabus, aircraft types, the site for the training, and the maintenance and operation standard	Government provides the service (output) specification by defining (i) the number of candidates to be air-graded each year (quantity) and (ii) the expected passing rate of the selected candidates in the subsequent training phase (quality). The private sector designs the program (for example, the syllabus, and the aircraft types) that will meet the government’s service specification.	This assumes that the private sector completely takes over the air-grading certification for both the military and for commercial pilot training. Thus, the prerequisite for applying the military pilot training program is an air-grading certification by the private sector, which attests that the interested candidate meets the basic requirements and possesses the requisite aptitudes. The government in this case does not set the standards nor provide the output specification. The private sector therefore designs the program based on the market’s needs.
	Traditional Procurement	PPP	Privatization

	Traditional Procurement	PPP	Privatization
Build	Government buys the required capital assets (for example, aircraft and construction of hangars) and the supporting service directly from the private sector. Typically, there is no single prime contractor who has overall responsibility to the government for the success of the program. All risks (for example, production and delivery) rest with the government.	Government buys air-grading service in terms of number of candidates to be air-graded. The private sector buys the required capital assets and the supporting services. The private sector has overall responsibility to the government in ensuring that the services to the government will commence on schedule and meet the government's requirements. The private sector bears all the risks, with the exception of demand risk that remains with the government (for example, insufficient quantity of candidates for air-grading).	Government is not involved. The interested candidate will buy the air-grading services directly from the private sector. All risks (including demand risk) rest with the private sector.
Finance	Government's responsibility.	Private sector's responsibility.	Private sector's responsibility
Operate	Similar to the "Build" phase. There is no single prime contractor that the government can hold accountable for the overall program.	While this remains the responsibility of the public sector, government is involved in checking for compliance to agreed quality and performance standards.	Private sector's responsibility.

Having differentiated PPPs from both traditional procurement and privatization, there is one last thing to note regarding PPP terminology for the purpose of interpreting

the global PPP movement. Specifically, there are 14 documented variations of PPPs (OECD, 2008). In each of these variations, the existence and degree of the DBFO characteristics vary.

C. OVERVIEW OF GLOBAL PPP MOVEMENTS

Traditionally, PPPs are found predominantly in public-use infrastructures, most commonly in the transportation sector (i.e., roads, bridges, tunnels, railroads, airports, and seaports), followed by water-and-waste management, and public buildings (i.e., schools and hospitals). Over the last two decades, globally, approximately 2,100 partnerships⁵ have been responsible for the delivery of public-use infrastructures amounting to approximately 887 billion U.S. dollars (USD) (AECOM, 2005). Many reviews have pointed to the imperative to continuously improve a nation's social and economic infrastructures while at the same time also containing the national debt (i.e., to keep debt "off-balance sheet") as the invisible hand pushing governments toward PPPs and the growing popularity of PPPs globally. The phenomenon is perhaps also fused by the widely publicized (some would call it propagandized) benefits of PPPs. Specifically, despite the higher borrowing cost for the private sector compared with government, the private sector provides better value for the money through innovation, efficiency savings, and risk transfers:

PFI delivers a number of important benefits. By requiring the private sector to put its own capital at risk and to deliver clear levels of service to the public over the long term, PFI helps to deliver high quality public services and ensure that public assets are delivered on time and to budget. (HM Treasury (UK))

The underlying assumption is that the private sector is more efficient and possesses the expertise and best practices that the public sector lacks. However, to date there is insufficient evidence to categorically conclude that PPPs are delivering on their promises (Hodge & Greve, 2008). The main contentions on PPPs include the subjectivity

⁵ Including both PPPs (in different variations) and concession agreement. A concession agreement exhibits most of the characteristic of PPPs except that the asset remains the legal property of the government and must be transferred to the government at the end of the concession agreement. In addition, in a concession agreement the concessionaire bears higher risk.

of the Value for Money Analysis (VfM)⁶ model used to justify PPPs and their off-balance sheet treatment. The latter erodes government's accountability on budgets as PPPs allow more public projects to be undertaken through private financing, outside public budget constraints.

In the mid-1990s, the UK government, being in the forefront of PPPs, started venturing into new sectors, such as information technology (IT) and defense. However, by mid-2000, IT PPPs ceased as the structural characteristics⁷ of the IT sector were assessed to be “at odds with the principal benefits of PFI, and PFI has not been able to deliver.” (HM Treasury, 2003, p. 14). On the other hand, UK defence PPPs have continued to gain momentum since the first PPP contract was signed in 1996 for the provision of non-combat vehicles (known as the “White Fleet”). By 2008, based on the number of PPP contracts signed, the UK Ministry of Defence (MoD) had become the fourth-largest user of PPPs in the UK central government. In terms of annual payment to the PPP contractors, MoD led with over £1 billion per year, overtaking the health, transportation, and school PPPs. The nature of UK's defence PPPs—covering four broad categories of accommodation, training, equipment, and infrastructure—had also gradually grown in complexity, from indirect support to front-line operations, such as aircrew training service and the Medium Support Helicopter Aircrew Training Facility, to directly supporting front-line military operations as seen in the Strategic Sea Lift Roll-on/Roll-off ferries and the Heavy Equipment Transporter projects.

Meanwhile, the rest of the world was slow to catch up with the UK defence PPPs phenomenon. PricewaterhouseCoopers (2005) reported that, out of the 28 European Union (EU) member countries, Germany was the only other country that implemented

⁶ In VfM analysis, comparison is made between the value of PPPs versus traditional procurement in deciding whether to proceed with PPPs. The PPP project costs are compared with a similar project scenario, referred to as “public sector comparator (PSC).” The comparison is theoretical and its outcome is dependent on the assumptions used in the analysis (Morallos & Amekudzi, 2008).

⁷ For example, fast-pace changes in IT that (i) make it difficult for the public sector to define its output specification in a long-term contract; and (ii) result in the cost of ongoing demand becoming the main cost-driver instead of initial upfront investment.

some defence PPPs. Others, such as Finland, France, the Netherlands, and Sweden, were in the midst of discussions. In the U.S., the barriers to defense PPPs are succinctly summed up by Held, et al. (2002):

The most prominent barriers to greater collaboration are (1) intellectual property concerns, which combine with the fact that most companies do research for their own purposes, not as a service for hire; and (2) excessively bureaucratic requirements and the related distrust of government involvement and oversight in company affairs. When commercially oriented companies weigh these burdens against the relatively small size of the Army market, other limitations on profits, and the perceived fickleness of the government as a customer, the benefits of collaboration generally fail to overcome them. (p. 36)

Given the high barriers, not surprisingly, the 1996 Military Housing Privatization Initiative (MHPI) remains the only defense PPP successfully launched in the U.S. MHPI was implemented to improve the quality of military housing through private-sector financing, expertise, and innovation. Bromund (2009) reported that the U.S. subsequently conducted feasibility studies on other defense PPPs, but these studies did not result in PPP implementation (for example, a leasing plan for air tankers in 2001 and a private-sector solution instead of a Joint Simulation System in 2002).

Similarly, in Australia—one of the early trend setters for PPPs—the implementation of defense PPPs by the Defense Material Organisation (DMO) has not made much progress. To date, only two defense PPPs (i.e., the Defense Headquarters Joint Operation Command Facility and the provision of 1,300 units of accommodation for Australia Armed Forces) were implemented in mid-2000. The slow progress of defense PPPs in Australia prompted the Infrastructure Partnership Australia (IPA)⁸ (2008), in its review of defense procurement and sustainment, to express its concerns that:

...there has been no use of PPP procurement by DMO since the Commonwealth's PPP policy was established in 2001. In the same seven-

⁸ According to its Web site, the IPA was launched in December 2005 by the Australian government jointly with more than 100 of the nation's most senior public and private sector Chief Executives. IPA represents "a unified voice advocating the best solutions to meet national economic and social objectives" (IPA, 2009).

year period, the UK Ministry of Defense has successfully used PPP procurement in respect of over 25 specialist military equipment Defense projects. (p. 1)

IPA (2008) further suggested that the Parliamentary Secretary Assisting the Minister for Defense and the Defense Procurement Advisory Board should take an active role in identifying defense projects that are suitable for PPP procurement and to convene dialogue sessions with the industry.

The Australia Department of Defense is currently exploring the possibility of contracting out its Helicopter Aircrew Training System (HATS) using a PPP that is valued at between 441 million USD and 671 million USD. Under the HATS program, the PPP partner (assuming that PPP mode is selected) would be responsible for providing a turnkey aircrew training facility, including acquiring a fleet of new training helicopters to replace the existing Eurocopter Squirrel (Navy) and Bell OH-58 Kiowa (Army) training helicopters along with air, ground and maritime facilities; an aviation training vessel; and a synthetic training environment that includes full-motion simulators, fixed-base simulators, part-task trainers, and computer-based training (Emma, 2008).

In Southeast Asia, the Singapore government was the first to embark on the PPP journey in mid-2000. Like the other newcomers to the PPP arena, the first pilot PPP project for Singapore was in the infrastructure sector (water and waste management) before it moved to other sectors such as IT and defense. The first defense PPP was contracted in 2005 for the Republic of Singapore Air Force (RSAF) Rotary Wing Course, a helicopter pilot-training program. In 2006, the Basic Wings Course (BWC), a 20-year PPP contract, was awarded. Under the BWC, the prime contractor is responsible for providing all aspects of pilot training, including analysis, aircraft, maintenance, simulators, courseware, and ground-based instructors to the RSAF at RSAF's training base at Royal Australian Air Force Base Pearce, north of Perth in Western Australia. The BWC PPP contract was awarded the 2007 Asia Pacific PPP Deal of the Year⁹ and is considered by the industry as the world's first PPP training system where "RSAF

⁹ The annual award by Project Finance International, a trade journal under Reuters Professional Publishing, is widely considered a prestigious accolade in the project finance industry.

provides the students, Lockheed Martin [the BWC prime contractor] turns them in to pilots.” (Lockheed Martin, 2009) “BWC is unique in the world of military flight training,” said Dale Bennett, president of Lockheed Martin Simulation, Training and Support (STS). “We are taking a systems integration approach to training and providing the RSAF with a true turnkey program—everything from courseware to cockpits—that will serve the Republic and its pilot trainees for the next 20 years” (Lockheed Martin, 2006, p. 1).

The following year saw the signing of the first PPP for the Republic of Singapore Navy (RSN) for submarine rescue services. The PPP contract involves the provision of a ship and submarine rescue system and maintenance services to the RSN. The rescue system comprises a Submarine Support and Rescue Vessel (SSRV) that can transport a Submarine Rescue Vehicle (SRV) and its handling systems out to sea. The SSRV then lowers the SRV into the water to reach a submarine in distress. Under the contract, the prime contractor designs and builds a fully integrated ship and submarine rescue system and operates and maintains the system over 20 years (Singapore Technologies Engineering Ltd [STAE], 2007, p. 1). It appears that the Singapore government is maintaining its momentum in defense PPPs.

Around the region, Brunei—a wealthy economy with crude oil and natural gas production accounting for nearly half of its GDP—has recently expressed interest in implementing PPPs. According to the Deputy Chief Executive of Royal Brunei Technical Services (RBTS),¹⁰ “the implementation of PPP and private finance initiatives play a part in increasing efficiency, the successful transfer of technology from experts to locals, and in assisting the government to enhance its fiscal environment” (*Brunei Times*, 2008). With such a positive outlook on PPPs, the timing appears ripe for the implementation of defense PPPs in Brunei.

¹⁰ According to its Web site, RBTS is the Brunei government’s procurement agency that “manages the acquisition of a wide range of systems and equipment, and material and services for those systems and equipment...The systems and equipment include vehicles, ships, aircraft, electronics, IT, communications, weapons, security, surveillance, and simulation & training. Material includes spares, components and assemblies. Services include maintenance, repair & overhaul (MRO) and upgrade, supply and training.” (RBTS, 2009)

The previous discussion suggests the following main observations on the global defense PPP trend. These four observations form the basis for framing the research topic of this project, which would be discussed in detail in the next section:

1. First observation: Outside UK, defense PPPs do not appear to be gaining global popularity.
2. Second observation: Thus far, defense PPPs are more commonly found in indirect support of front-line operations, in particular accommodations and training.
3. Third observation: IT PPPs have been determined as “non-PPP-compatible” because of their fast-paced technology changes and complexity. Notably, these are features also common to major defense weapon acquisitions.
4. Fourth observation: Countries with strong reserves and economy (such as Singapore and Brunei), that do not really need private funds,¹¹ have nevertheless opted to embrace the PPP mode of contracting.

D. FRAMING OF RESEARCH QUESTIONS

The first generation of academic research into PPPs was centered on the “hardware” of PPPs, such as their nature, purposes, and financial accounting treatment (English, 2005). The following five central research questions on PFI, first suggested by Broadbent and Laughlin (1999), are significant:

1. Is PFI a form of privatization of the public sector?
2. What is the nature of PFI and who is regulating its application?
3. How are definitions of PFI in terms of value for money (VfM) and risk transfer derived and operationalized?
4. How are PFI decisions made in different areas of the public sector and what are the effects of these decisions?
5. What is the merit and worth of PFI?

¹¹ To recap, one of the most controversial benefits of PPP is that it enables governments facing budget constraints to shift the financial burden of providing public goods and services to the private sector.

On the first question, Hodge and Greve (2008) found that while the PPP definition remains controversial, broad consensus exists on the important elements of PPPs. Across the PPP literature, the commonly found elements include: sharing (i.e., of risks, costs, benefits, resources, and responsibilities) and the concept of joint, partnership, cooperation and complex arrangements (i.e., legal and financial). In addition, three different permutations of PPP project financing exist: public, private, or a hybrid of the two. Different countries have different preferences for these permutations.¹²

According to Hodge and Greve (2008), curiously, the second question, which essentially questions the legitimacy of PPPs in jurisdiction, has not been subject to much deliberation. In fact, the third question, regarding the VfM of PPPs, has been the central point of numerous reviews. The VfM analysis has been hindered by the lack of empirical evidence, as the pioneer PPPs were operationalized only around the early 2000s. Even then, reports from PPP proponents showing impressive positive benefits of efficiencies as well as on-time and on-budget deliveries are often vigorously contested by PPP opponents with another set of reports indicating otherwise.¹³ As pointed out by Hodge and Greve (2008), the evidence is mixed on the proposition that PPPs deliver VfM; world organizations such as OECD and the European Union “are also hesitant in full endorsement of PPPs” (p. 11).

Given that the jury is still out on the issue of VfM, it would be difficult to answer the fifth question and it is further complicated by the need to first establish from which stakeholder’s perspective one is ascertaining its worth and benefits.¹⁴ The fourth question is equally difficult to answer, considering the low PPP transparency and highly complex nature of the PPP deals. Combining the unanswered first-generation research question and the new PPP issues¹⁵ that arose in recent years, Hodge and Greve (2008) proposed

¹² Private financing for UK and Australia. Public financing for the U.S. and Canada.

¹³ The proponents of PPPs typically comprise the governments, the legal and financial consultants, and the business communities. On the opposite side are the public servant unions, some citizen groups, and a number of academics (Hodge & Greve, 2008).

¹⁴ Hodge and Greve (2008) purported these “questions are not simply questions of accounting or even economics, but matters concerning governance, political economy and power.”

¹⁵ For example, the increasing use of private finance and the changing assumptions on governance and accountability.

the following second-generation set of research questions with a new focus on the “software” of PPP, which “is about better understanding why the political preference for PPPs exists and what the implications of these preferences are” (p. 17):

1. What is the merit/worth of PPP?
2. In what circumstances do PPPs provide an effective and efficient tool for governments in terms of simply VfM and innovation?
3. In what circumstances do PPPs provide governments with a successful governance tool to overcome traditional governance failures?
4. How can PPPs be best regulated in the public interest in future?
5. What role to date have Auditors General undertaken in PPP evaluation, and how might we meta-summarize their assessments to date?
6. Why and how are PPPs promoted in some jurisdictions and not others?
7. What is the nature and consequence of a global “PPP industry”?
8. What is the place of PPPs in development activities?
9. What is the next chapter for PPPs and what are the implications?

In the course of answering the question “*Public-Private Partnerships in Defense Acquisition Programs—Defensible?*”, this research project will deal with the first, second, sixth, and ninth questions raised in the Hodge and Greve (2008) second-generation of research questions, but with specific focus on defense PPPs. In particular, through a more detailed analysis of the experiences of the UK, U.S., Australia, and Singapore in defense PPPs, the paper examines the following issues:

1. Are there common denominators that steer the countries, both with and without pressure of national debt containment, toward the adoption of PPPs to meet their defense needs? Do these common denominators point toward PPPs as an effective contracting tool rather than a political tool to conceal government borrowing? This issue is linked to the fourth observation, highlighted in Section C (Overview of Global PPP Movements).
2. Are PPPs suitable for defense acquisitions? Bromund (2009) points out, “Efficiency is a particularly nebulous goal in the realm of defense.” (p. 7)

The answer to this issue would perhaps shed some light on the first observation, that defense PPPs are not gaining as much popularity as the other PPPs around the globe.

3. From the second and third observations, this research project questions whether there are some areas in defense acquisitions that are more suitable than others to be contracted out as PPPs?
4. Contracting out can and should be applied where suitable. It is not suitable in cases like the FSTA [Future Strategic Tanker Aircraft] program in which the state must make strategically risky decisions to write a commercially viable contract.” (Bromund, 2009, p. 15)

Reports¹⁶ have suggested that PPPs seem to work better for prisons and roads than for hospitals or schools. Clearly, the extent of complexity in defense PPPs is not less than that in the hospital and school PPPs. Similarly, most new military weapon systems today rely heavily on IT, especially on software to deliver their capability. Given the serious problems encountered in the IT PPPs that led to their cessation in 2003 and the negative findings on the hospitals and schools, further research into these areas would be beneficial in addressing this third issue.

The three key issues highlighted above will form the backbone of the research on *“Public-Private Partnerships in Defense Acquisition Programs—Defensible?”*.

E. SUMMARY

In summary, amongst the many forms of PPPs, this research project focuses on PFIs involving DBFO activities. While PPPs—particularly in public-use infrastructure—are growing in popularity globally, the defense sector has not experienced such phenomenal global growth. In fact, besides the UK, only a handful of countries have ventured into defense PPPs, for seemingly different reasons, and mostly in indirect operational support. To be able to answer the three issues highlighted in Section D, it is essential to first take a closer look at the experiences of UK, U.S., Australia, and Singapore in defense PPPs, which will be the next building blocks for this research project.

¹⁶ Flinders (2005) and Commission on Public Private Partnerships (2001).

II. COMMON DENOMINATORS FOR ADOPTING PPPS

A. INTRODUCTION

The view that PPPs are nothing more than a “buy now, pay later” installment scheme has plagued the implementation of PPPs in the UK since their inception in the 1990s:

The Treasury has long been criticised by those who believe that the PFI is little more than a wheeze to get debt off the public balance sheet....On defense the civil servants have abandoned that fig leaf. Ministers have let slip that they **could not afford** [emphasis added] to revamp their training facilities if the government had to assume the costs at the start, rather than spreading payments over decades.

This leads to a disturbing conclusion. Although PFI deals may offer value, that is not the yardstick by which they are being measured. Instead, the pressure of fighting two wars on a peacetime budget seems to be driving the government to enter into hasty deals, the true costs of which will become apparent only in years to come. (*The Economist*, 2007)

Under PPPs, the private sector arranges for the financing and the possible sources of funding include the bond market, commercial bank debt, government soft loans,¹⁷ and exporter credit agency. PPPs thus enable the government to circumvent the highly restrictive and tightly controlled public borrowing policy. As a result, more public projects can be implemented as the upfront capital investment is replaced with a stream of future liabilities, which does not show up in the government’s account. This is also known as “off-balance sheet” financing, one of the most controversial issues surrounding PPPs. Over the years, criticisms are mounting against such “off-balance sheet” financing arrangements, especially after Enron—one of the world’s leading electricity, natural gas, pulp and paper, and communications companies—went bankrupt in 2001 after using “off-balance sheet” financing to hide its losses.

¹⁷ A government soft loan typically may have lower interest rates and will not usually need security as a guarantee of payment. The requirements for soft loans will not be as stringent as those laid out by traditional lenders.

In this chapter, this research project traces the policy considerations leading to the emergence and rise of PPPs in the UK—specifically, is “off-balance sheet” financing *the* prime driver? Next, are there other pertinent factors that support the implementation of PPPs? Lastly, of these factors, which are the common denominators shared by the other countries?

B. “OFF-BALANCE SHEET”—THE PRIME DRIVER?

Prior to 1989, the Ryrie Rules set out two fundamental principles that governed the use of private capital in the financing of public sector projects in the UK:

- private finance could only be introduced where it offered cost effectiveness; and
- privately financed projects for public sector programmes had to be taken into account by the Government in its public expenditure planning (**i.e., such projects had to have public expenditure cover**) [emphasis added]. (Grahame, 2001, p. 14)

In the 1990s, the aggressive privatisation of the public sector that took place between the 1970s and 1980s ceased as “there was little else that could legitimately be sold off...this cessation was probably due to the political and economic problems endangered by the privatisation programme that had been pursued.” (Broadbent & Laughlin, 2003) At the same time, the UK government was under pressure to tackle the falling standards in schools, hospitals, and other public-service assets resulting from decades of under-investment in public-service infrastructure. The Conservative Government in power then held firm to the belief that private-sector involvement was the answer to improve public services. The PFI subsequently replaced the Ryrie Rules in 1992 and this cleared the way for a new form of partnership with the private sector for the growing backlog of public projects.

Specifically, the PFI that was announced in 1992 eliminated the second guiding principle of the retired Ryrie Rules, which stipulated the requirement for privately financed projects to be covered by public expenditures. However, the first principle, cost effectiveness, was contained within the PFI-guiding principles of genuine transfer of risk to the private sector and value for money. The UK government made it clear that its priority was to reserve public capital for ventures where private finance was assessed to

be inappropriate or where value for money could not be demonstrated. In short, capital projects would not be funded by public capital unless private finance had been explored and ruled out (Grahame, 2001).

A country's national debt level is one of the key performance measures for a government. PPP's "off-balance sheet" accounting treatment would be attractive to a government like the UK's, whose borrowing is limited by the Sustainable Investment Rule for the economic cycle of 1997/98 to 2006/07:

...sustainable investment rule: public sector net debt as a proportion of GDP would be held over the economic cycle at a stable and prudent level. Other things being equal, net debt would be maintained below 40 per cent of GDP over the economic cycle. (HM Treasury (UK))

The perception that "off-balance sheet" financing is *the* prime factor is perhaps fueled in part by the UK government's actions to preserve the "off-balance sheet" status of the PFI schemes. In 1999, following discussions between the UK government and the Accounting Standards Board (ABS), ABS's initial accounting guidance (issued in 1998) for the capital value of PPP to be recorded on the government's balance sheet was revised to one that "allowed most PFI transactions to be excluded from government borrowing figures on the grounds that they were 'operating leases,' not 'finance leases.'" (Grahame, 2001) However, in the same guidance note (Treasury Taskforce, 1999), the UK government attempted to debunk the perception that "off-balance sheet" financing was the prime driver and the guidance note emphasized value for money (VfM) as the key determinant:

The objective of PFI procurement is to provide high quality public services that represent value for money for the taxpayer. It is therefore value for money, and not the accounting treatment, which is the key determinant of whether a project should go ahead or not. Purchasers should focus on how procurement can achieve risk transfer in a way that optimises value for money and must not transfer risks to the operator at the expense of value for money. (para 1.8)

In 2003, the UK government reiterated its position that the accounting treatment of PFI investment is a moot point and that it has no influence in the decision process on the acquisition methods:

The decision to undertake PFI investment is taken on value for money grounds alone, and whether it is on or off balance sheet is a subsequent decision taken by independent auditors and is not relevant to the choice of procurement route. Almost 60 per cent of PFI projects by value are on balance sheet. (HM Treasury, 2003)

In defense acquisition, the UK MoD fully embraced the policy considerations for private-sector involvement, “reserving” capital funding for non-PFI viable projects and VfM as the prime driver for PFI. All of which were consistently applied and prominently featured in UK MoD defense acquisition policy as shown below:

1. In 1997, the UK MoD launched the Smart Procurement Initiative, which aimed to “get better and cheaper equipment faster, and to work more effectively in partnership with industry, rather than the sterile confrontation of the past.” (UK MoD, 1999)
2. The Defense Acquisition Handbook stipulated that MoD’s own capital funding resources should only be considered after PFI has been demonstrated to be “unworkable, inappropriate or uneconomic” (UK MoD, 2002).
3. PFI is not given preference over other procurement methods, each of these methods is assessed on its own merits:

The MOD selects PPP projects on their merits. It employs PPP tools such as the Private Finance Initiative (PFI) and Partnering where they offer the potential to achieve greater value for money than could be achieved under more traditional ways of doing business, while improving or sustaining front-line capability. The MOD has no dogmatic preference for private over public, or vice versa. (UK MoD, 2001)

From the UK government’s standpoint, PPPs have never been about disguising “off-balance sheet” financing or circumventing the tight fiscal policy, rather PPPs have always been about value for money. The UK government’s position is substantiated by the fact that 60 percent of the PPP transactions are on the balance sheet. Moreover, as pointed out by Grahame (2001), the cap in borrowing to 40 percent of the GDP is not sacrosanct and the UK government has the flexibility to vary the ceiling to meet the

changing economic environment.¹⁸ Furthermore, the UK government's 'golden rule'¹⁹ allows the government to borrow for capital investment. Therefore, the UK government has the alternative to borrow and finance projects using traditional methods of acquisition (i.e., the non-PPP route).

While there is no apparent fiscal constraint that pushes the UK government to go down the PPP route, one cannot underestimate the political payoff of being able to spend more without having to raise taxes, or borrow more to balance the books, or the political pressure to keep the national debt low. The pressure has just been intensified with Standard and Poor's recent warning that UK might lose its AAA rating as the UK's national debt is at its highest level since 1978²⁰ and is forecasted to reach 100 percent of its national income. The loss of the top credit rating could raise the cost of financing the national debt and further strain public financing (Giles & Shallock, 2009). At the ministry level, UK MoD has already sustained significant budget cuts—from approximately 5 percent of the gross domestic product (GDP) in the 1980s to its current all-time low at 2.3 percent of GDP (2008/2009) (Management of Defense, 2009), with expected further reductions of between 10 and 15 percent in real terms between 2010 and 2016 (Blitz 2009). In the words of Junior Health Minister Alan Milburn, "When there is a limited amount of public-sector capital available, as there is, it's PFI or bust" (BBC, 2001). Thus, at the ministry level, overcoming budget constraints through PPP is *the* driver.

The UK government's adoption of International Financial Reporting Standards (IFRS) from 2008/2009 has the effect of putting *all* PFI transactions on balance sheet, (*Financial Times*, 2007). In addition, the international professional bodies' had also

¹⁸ As of June 2009, the UK national debt stood at 56.6 percent of gross domestic product (GDP), above the 40 percent mark. Since 2008, the UK's national debt has increased sharply due to the economic recession and financial bailout (Office of National Statistics, 2009).

¹⁹ Under the 'golden rule', introduced in 1992, over the economic cycle, the government will borrow only to invest and not to fund current spending. This ensures fairness between generations where "each generation is expected to meet the current cost of the public services from which they benefit" (Office of National Statistics, 2009).

²⁰ UK national debt (in early 2009), before adding "off-balance sheet" PFI transactions, was 47.5 percent of GDP. "On their own, PFI contracts (at 7 percent of GDP) comprise one-third of Britain's liabilities off the balance sheet. Taken together, these liabilities raise Britain's public debt by almost one-third, to 62.8% of GDP." As of August 2009, UK national debt (before including the "off-balance sheet" PFI transactions) has already increased from 47.5 percent to 56.6 percent of GDP. (Bromund, 2009).

reached consensus to regard PPP debt as government borrowing (Murray, 2006). With these new developments, contrary to the PFI industry players' expectation that this controversial issue of "off-balance sheet" as driver will finally be put to rest, it will continue to be controversial as the UK government intended that the IFRS would not apply to its national account.²¹ As a result, most of the PPPs would remain off-balance sheet (Timmins, 2009).

Next, this research project examines whether the same controversy (i.e., off-balance sheet accounting treatment as *the* driving factor) shadows the other three countries' implementation of PPPs. In the U.S, the underlying principles behind the MHPI is for the U.S. Department of Defense (DoD) to tap the private sector's investment funds and expertise in housing construction as an alternative to using the traditional military construction appropriation. At first glance, it would appear that the driver for the U.S. MHPI PPP is in stark contrast to the UK. It is unequivocally clear that the U.S. MHPI would be accounted for on the balance sheet. However, upon closer examination of the accounting treatment of MHPI by the U.S. Office of Management and Budget (OMB), it would appear that MHPI was only "partially" on the balance sheet:

By scoring²² each transaction in that piecemeal fashion, to date, DoD has been able to acquire more than \$6 billion in housing while recording the use of only \$580 million in budget authority in the Family Housing Improvement Fund. By recording only a portion of the project's cost in the budget, DoD is able to acquire more housing with a given amount of budget authority than it would be able to if it recorded the full investment amount in the budget. In effect, the Administration's accounting enables DoD to record the costs of the projects incrementally over time rather than up front. (CBO, 2004)

MHPI, being the first of its kind to be implemented the U.S., would require some fine-tuning of its scoring policy. Thus, it would be hasty for one, solely based on the

²¹ The European accounting standard (Eurostat, a different accounting standard) will apply to the UK government's budgeting purposes and its national account. According to OECD (2008), the Eurostat's criterion of recording PPPs on the government book is rather loose. This will result in many PPPs where the government still bears a significant part of risks not being recorded on the government's book.

²² Scoring is the process used to determine the cost that should be recognized and recorded as an obligation of DoD at the time of the contract signing. This ensures that sufficient appropriations are available to cover the amount obligated for each contract.

MHPI experiences, to conclude that “off-balance sheet” treatment has a role to play in steering the U.S. government towards PPPs. However, there is no denying that the MHPI enables the U.S. DoD to stretch its limited housing funds with private-sector financing, and for the housing improvement to materialize faster with significantly less government funding upfront. In short, PPP is a means for the U.S. DoD to overcome the budget constraint, a driving force similar to that experienced by its counterpart in the UK MoD.

In Australia, the PPP driver for the Australian government has evolved from pre-2000 use of PPPs to remove debt “off-balance sheet”²³ to its post-2000 focus on using PPPs to attain VfM (English, 2004). In 2002, the Australian government issued the following statement to categorically repeal the notion of “off-balance sheet” as a driver for PPP:

...both NSW (New South Wales) and Victoria do not regard the use of private finance or public-private partnerships as a means of expanding the overall level of resources available... Even though social infrastructure may be financed by the private sector, the government, through payments made through the contract’s life will ultimately fund it. These payment commitments are as real as those associated with servicing balance sheet debt...Private provision of public infrastructure is therefore not a “magic pudding” that can alleviate the resource constraints all governments necessarily face. Unlike in the United Kingdom, where its “Private Finance Initiative” was introduced initially to circumvent strict fiscal constraints, neither State views private provision of social infrastructure as a way of disguising borrowing off-balance sheet. (New South Wales [NSW] Treasury, 2002, p. 4)

Unlike in the UK, where there is still lingering doubt because of its application of “double standards” in the accounting treatment of PPPs, the general consensus is that for the Australian government, the dust has more or less settled on this issue of the “off-balance sheet” driver.²⁴ The majority of the PPPs, especially those that are post-2000, would be on the Australian government’s balance sheet. The Australian use of PPPs has thus moved beyond this controversial issue.

²³ To circumvent the borrowing limits set by the Australian Loan Council.

²⁴ See English (2006), as well as PriceWaterhouseCoopers (2008), for details on the perceived “double standards” in the UK’s accounting treatment versus that of the Australian government.

In Singapore, PPPs were first launched around mid-2000, during a period of relatively strong GDP growth rate, approximately 6.9 percent per year (Trading Economics, 2009). Defense spending has also remained steady at between 4.5 percent and 5 percent of GDP since 2002 (*The Straits Times*, 2009). The strong Singapore economy shows no sign to suggest that the Singapore government and its Ministry of Defense are under tight fiscal constraints that necessitate the use of PPPs to “supplement” its spending or to move its debt “off-balance sheet.” To date, the Singapore government has not firmed up its policy on how PPPs should be accounted for in the books of the public-sector agencies (Singapore Ministry of Finance, 2009(a)). But the Singapore government is likely to follow closely the IFRS guidance, resulting in most PPPs being on the balance sheet. The rationale is that, since 2002, Singapore has been “closely modeling our Singapore Financial Reporting Standards or SFRS after the IFRS—deviating from IFRS only in very specific and exceptional instances where there are strong reasons backed by economic and business substance arguments” (Singapore Ministry of Finance, 2009(b)). Therefore, it would be a reasonable deduction that “off-balance sheet” treatment has never been a driving factor for the Singapore government’s adoption of PPPs.

C. OTHER DRIVERS?

From the discussions so far, both the UK and the Australian governments have cited VfM as the official and primary objective of implementing PPPs. The same VfM objective is also shared by the Singapore government as stated in its official PPP Web site:

Through PPP, the public sector seeks to bring together the expertise and resources of the public and private sectors to provide services to the public at the **best value for money** [emphasis added]. (Singapore Ministry of Finance, 2009 (b))

Of the four countries studied, the U.S. (i.e., MHPI) is the exception, where Bromund (2009) observed that VfM was not the driver:

The MHPI’s primary purpose is not to save money, though it is forecast to cost about 10 percent less than traditional methods of military

procurement. Rather, it is a way to force the services to spend money on a dull but necessary commodity--military housing--that they traditionally have preferred to underfund in deference to more exciting items such as weapons systems. It produces a better product more quickly today and more reliably over time for slightly less money. This is an important fact to bear in mind when evaluating British claims that PFI delivers value for money.

Globally, VfM has also been upheld by both the European Commission (EC) (EC, 2003), the International Monetary Fund (IMF) (IMF, 2004) as well as many of the governments of OECD countries (OECD, 2008) as the single most important factor for a country to consider when deciding whether to pursue the PPP route versus a traditional procurement. PPPs bring about VfM where the higher financing costs (i.e., private-sector cost of borrowing and cost of capital) are offset through reduced life-cycle costs, better allocation of risks to the party best able to manage them at the least cost, faster completion, improved quality, output-based specification, performance measurement and incentives, private-sector expertise, and competition (Morallos & Amekudzi, 2008). The UK government defined VfM as:

...the optimum combination of whole-of-life costs and quality (or fitness for purpose) of the good or service to meet the user's requirement. VfM is not the choice of goods and services based on the lowest-cost bid. (HM Treasury, 2006, p. 7)

Typically, a VfM assessment involves a quantitative assessment, which plays a major role, and a qualitative assessment. There is no prescriptive method of conducting a qualitative assessment. Areas of assessment may include non-quantifiable costs and the track record of the private-sector participants (Morallos & Amekudzi, 2008).

In a quantitative assessment, the costs of pursuing a project through PPP are compared against the costs of traditional procurement under a similar project scenario referred to as public sector comparator, or PSC.²⁵ If the costs of the traditional procurement are assessed to be higher than the PPP route, the gap in costs represents the benefits (VfM) that accrue from PPPs. Both the UK and the Australian governments are

²⁵ PSC calculates the in-house implementation costs as a benchmark comparison against the PPP alternative.

firm believers in using PSC in ascertaining VfM, while the Singapore government relies on competitive bidding to ensure VfM. However, OECD (2008) is concerned that without a PSC, it would be difficult to determine whether there is any cost savings and achievement of VfM.

In theory, there is no dispute that VfM should be the main driver for implementing PPPs. In reality, VfM is a “blinking word” where the same words or phrases are subject to different interpretations. The PSC computation is derived based on a hypothetical scenario and is thus highly subjective and vulnerable to bias. Its complex financial models are also prone to errors (Corner, 2006). Specifically, a change in the assumptions, the forecasts, the assessment of risk or the discount factor (i.e., the cost of money) used in the net present value (NPV)²⁶ calculation of PSC can tilt the result in PPP’s favour or against it:

The UK House of Commons Committee of Public Accounts believes there have been many cases where the public sector comparator has been incorrectly used as a pass or fail test. **In these cases the desire to show that the Private Finance Initiative deal is “cheaper” than the public sector comparator has led to manipulation of the underlying calculations and erroneous interpretation of the results (Table 2)** [emphasis added]. There are likely to be qualitative and non-financial differences between the options that cannot simply be subsumed in a difference in forecast costs. (Corner, 2006, p. 44)

The difficulties in capturing, quantifying, and verifying the value of risks transferred²⁷—a key determinant factor in the VfM computation²⁸—is another major source of concern. According to Pollock and Price (2004), professional bodies in the UK such as the Public Accounts Committee and the Association of Chartered Certified

²⁶ PSC is used to generate the NPV of what a traditional procurement would cost for comparison against the NPV of a PPP.

²⁷ Shaoul (2005) pointed out that the number of possible outcomes of each risk occurring is infinite. OECD (2008) highlighted that there will always be some risks that are still held by the public sector and the general public, which are often overlooked in the VfM assessment.

²⁸ For example, the UK hospital PFI shows that traditional procurement would be cheaper until risk transfer is factored in, at which point PPP becomes favorable (Pollock & Price, 2004).

Accountants, are concerned with the lack of sufficient evidences (i.e., data of risks actually transferred and the risk premium charged for them) to evaluate the government's key justification of VfM through risk transfer.

Besides risk allocation, other important contributing factors to the VfM include the extensive due-diligence process carried out by the private-sector risk-taker in assessing the project and the presumably superior private sector's management skills. The importance of the due-diligence process was extensively discussed in the PricewaterhouseCoopers (PWC) report, "The value of PFI—Hanging in the Balance (sheet)?" (PricewaterhouseCoopers, 2008). The report examined the future of PFI in the UK, following the UK government's announcement of the adoption of IFRS from 2008/2009. The pertinent question was whether this change in the accounting rule would result in a decline of PFI. More specifically, the business case for using PFI would now be solely on its merits as an effective procurement tool. PWC argued that only some—but not all—benefits of private finance could be replicated by reforms to acquisition management and other non-PFI contracting strategy. In particular, PWC maintained that the "F" in PFI—i.e., the role of private finance in exercising its due diligence and exerting beneficial discipline on both public and private sectors at the outset of the project—is the key factor in bringing about many of these PFI benefits. The theme and the conclusion of PricewaterhouseCoopers (2008) are summed up by Jon Sibson, partner, public-private advisory practice, PricewaterhouseCoopers LLP:

The urge to adopt new models should be approached with caution. Two models involving public sector equity have been applied in primary health care and schools. There should be a pause for digestion and reflection before considering whether the public sector equity model should be applied more widely. Whatever the benefits of public sector equity—and they may be considerable—**it should not be forgotten that many of the benefits of PFI have come from plain, old-fashioned, private sector equity** [emphasis added]. PricewaterhouseCoopers, 2009)

Financial and legal experts have always been strong advocates of PFI as they have a big stake in pushing for PFI, an extremely complex transaction, which the government lacks the requisite capability to manage without the assistance of external financial and legal experts (Hodge, 2006, p. 68). Today, globally, consultancy work to government is a

multi-billion dollar business, employing more than half a million people with revenue of more than \$71 billion USD (Hodge, 2006, p. 121). PWC is among one of the top five financial advisors for PPP for the period 2004 to 2007. These accounting firms' conflicting roles of being both on the government's side (i.e., as consultant on secondment in advising on PPP policy formulation or as financial advisor in evaluating bidders' offer) and on the private sector's side (i.e., as auditor and as financial advisor in advising on how to derive a winning PPP bid) have drawn much controversy on the impartiality of their stand and views on PPP matters (Hodge, 2006; Shaoul, Stafford, & Stapleton, 2007; Unison, 2002)²⁹. In short, PWC is potentially biased in promoting PPP.

The notion of private-sector superiority is an unsupported assumption. According to Hall and Lobina (2005), there is no empirical evidence to support this assumption. On the contrary, the empirical evidence strongly points to the fact that “there is no systematic significant difference between public and private operators in terms of efficiency or other performance measures. The theory behind the assumption of private-sector superiority is also being shown to have serious flaws” (Hall & Lobina, 2005). The same sentiment is echoed by the IMF, while the World Bank adopts a neutral stand on the relative efficiency of private versus public operators. The VfM assessment will be less opaque with the presumption of relative efficiency taken out of the equation.

D. SUMMARY

In this chapter, regarding the use of PPPs, this research project observed that the Australian government—but not the UK government—has moved past the “off-balance sheet” driver. For the U.S., it is non-conclusive as to whether the U.S. is motivated by this same driver in the military housing PPP. However, it would appear that both the UK MoD and U.S. DoD are resorting to PPPs as means to overcome budget constraints. For Singapore, the research strongly indicates that neither the advantage of “off-balance sheet” treatment nor overcoming budget constraints has ever been a driver.

²⁹ UNISON is a UK public-services union and it has an ax to grind as PFI has resulted in the loss of public-sector jobs to the private sector. However, some of the points presented in their paper are factual and consistent with the views expressed by the academics in Hodge (2006) and Shaoul, Stafford, & Stapleton (2007).

This chapter highlighted the weaknesses of the VfM methodology. The VfM is the common denominator in the UK, Australia, and Singapore implementation of PPPs. However, it is an ambiguous objective in these governments' pursuit of PPPs. It is important to recognize that such an ambiguous objective could potentially distort policy decisions, resulting in costly economic and social consequences.

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III. SELECTED COUNTRIES' EXPERIENCES WITH DEFENSE PPPS

A. INTRODUCTION

Since the signing of its first defense PPP (i.e., the “White Fleet”) in 1996, the UK MoD has engaged in a wide range of PPP deals—from simple accommodations to technologically sophisticated Skynet 5 satellite communication projects. As of October 2009, 63 defense PPPs amounting to £10.088 billion have been signed and 52 of them are in an operational phase (Partnerships UK, 2009). The global financial crisis during the years 2007–2009, the worst since the Great Depression, has resulted in a credit crunch—specifically, the availability of private finance and increased rates of borrowing. The PPPs, though of investment quality, are not insulated from the crisis because of their long maturities (up to 25-years long-term financing). In 2008, UK MoD managed to close³⁰ five PPP deals³¹ (Baker, 2009) totaling approximately £4.279 billion in capital value in spite of the slow-down in worldwide PPP deals. The high-value and high-profile Future Strategic Tanker Aircraft (FSTA) and Military Flying Training Service (MFTS) were two of these PPP deals:

The confirmation that PFI is working in the MoD, together with renewed confidence in our ability to deliver deals effectively, both point to a positive outlook for the initiative in the sector. (Prior, 2006)

In this chapter, the research on the countries’ experiences in defense PPPs will concentrate mainly on the UK MoD’s experiences. These have the most diverse profiles (from back-end to front-line support) and the highest numbers (including the numbers of

³⁰ This refers to financial closing and the time when the documentation has been executed with the financial institutes/lenders and conditions precedent to the drawdowns have been satisfied or waived. Drawdowns are now permissible. (Business Dictionary.com)

³¹ Future Provision Marine Services, Future Strategic Tanker Aircraft (FSTA), Military Flying Training Service (MFTS), Corsham Development Project, and the Royal School of Military Engineering (see Appendix 1 for summaries of these PPPs).

operational PPPs)³² among the four countries. In addition, there has not been any significant growth or evolution of defense PPPs in the other three countries.

B. UK EXPERIENCES

A snapshot of the profile of UK defense PPPs established since 1996 is presented in Table 2:

Table 2. Profile of UK Defense PPPs

Categories	Examples of Program Types	Numbers of Deals	Estimated Total Capital Value (£ Billion)
Accommodation ³³	Barracks, Offices, Housing, School/Training Facilities, and Others	20	3.493
Training ³⁴	Simulators, Flight Training	10	1.274
Equipment ³⁵	FSTA, Strategic Sea Lift, Skynet 5	16	4.574
Infrastructure ³⁶	Waste Water Management & Information Technology	17	0.747
Total		63	10.088

Table 2 shows that the high-value defense PPPs are in accommodation and equipment, accounting for approximately 80 percent of the total PPP capital value. Specifically, the top three PPPs (in terms of capital value) are FSTA (£2.689 billion-equipment), Allenby-Connaught (£1.257 billion-Accommodation), and Skynet (£1.079

³² These operational PPPs will shed some light as to whether PPPs have delivered their promised objectives.

³³ This included all MoD PPPs categorized under “All Accommodation,” “All Housing,” and “All Properties (excluding Project ID-11475)” (PartnershipsUK, 2009).

³⁴ This included 10 MoD PPPs categorized under “All Equipment, Project ID-11466, 11467, 11482, 11487, 11488, 11493, 11496, 11851, 11508” and “All Properties, Project ID-11475” (PartnershipsUK, 2009).

³⁵ This included 16 MoD PPPs categorized under “All Equipment—All the remaining Project IDs excluding those under footnote 5,” “Information, Technology and Change (ITC) - Project ID-11503,” and “Transport - Project ID-12128” (PartnershipsUK, 2009).

³⁶ This included 17 MoD PPPs categorized under “All Environment” and “All ICT—Excluding Project ID 11503” (PartnershipsUK, 2009).

billion-equipment) (see Appendix B for project summaries). The National Audit Office (NAO) (2008) reported favorably that the majority of the UK MoD PPPs are delivered on schedule, on budget, and are performing satisfactorily:

These new projects have enabled the Department to achieve considerable benefits from a range of services. Some of the projects are delivering new equipment and training which are contributing to improving the effectiveness of military personnel. Others are providing support services which are helping the Department to carry out its work more efficiently. (NAO, 2008)

These defense PPPs shared the common features found in non-defense PPPs, such as availability- and usage-based payments, deductions for unavailability and third-party revenue to offset operation costs. However, the defense PPPs are arguably more complex because the military operates in an unpredictable and fast-changing threat environment. The defense PPPs are larger in scale and involve requirements that are harder to define and not commonly found in the private sector (i.e., unique to the military). These characteristics pose unique challenges in the tendering process, the management of changes in requirements, and in ensuring satisfactory performance of critical operations. Failure is not an option!

1. Challenge 1

Lengthy tendering period translates to higher bid costs, reduced competition, and undue delays in service commencement. NAO (2008) reported that, on average, UK MoD's PPPs took slightly longer to establish than the UK government-wide averages. This is to be expected as some of UK MoD's PPPs are unprecedented and one-of-a-kind. Other government departments' PPPs are repetitive (e.g., schools and hospitals) and relatively more straightforward.

Of concern are the larger PPP deals, such as the Colchester Garrison, MFTS, FSTA, and Allenby-Connaught, which took between five to seven years from tendering to financial close. The industry has commented that the long lead time is a sign that the UK MoD is being overly ambitious by combining so many things into a single contract:

Certainly, the insistence on lumping so many things into a single contract must be questioned. It took four years to go from preferred partner to signature on Allenby-Connaught, a giant accommodation deal, for example. And it's already well over three years since preferred partner was reached on the tanker aircraft deal—with signature another year away. (Indefensible, 2007)

The Allenby-Connaught PPP and the MFTS (see Appendix B for project summaries) are examples of the lengthy tendering process. The sheer size of the Allenby-Connaught PPP and the complexity of pricing the long-term refurbishment requirements are the main causes for its delay. This gives rise to the question of whether a series of smaller and simpler deals might have been more appropriate (Indefensible, 2007).

Next, the MFTS would probably be hailed as the most complex of the UK MoD PPPs—with the MFTS contractor assuming the role of lead integrator (akin to the program manager role)—in taking over 72 of the UK MoD's existing flying training contracts to provide all aircrew training from post-aircrew selection to operational conversion training:

MFTS, however, is far more complicated and bolder than almost all other UK defense procurements. Not only will it be acquired under the private finance initiative (PFI), it will also encompass the gamut of UK military training: the three services pilots, navigators and “rear-crew,” from post-selection screening to operational conversion unit (OCU) entry... with handing over the entire training system to a private contractor, that in turn will have to manage a large number of subcontractors providing not only trainers, but personnel, airfield operation services and the other aspects of running an air force and its infrastructure. (Flight International, 2003)

Though the MFTS contractor has overall responsibility for the management of the training information system, the training design, and delivery, the MFTS contractor will not have a free hand to select Tier 2 suppliers. In addition, the MFTS contractor “will be prohibited from competing for Tier 2 contracts unless it can be shown that there are ‘overriding value for money’ reasons” (Anderson, 2008).

The concept of engaging a private-sector firm as the lead integrator is not new and has been implemented in the U.S. for executing large, complex, defense-related acquisition programs. The U.S. has restricted the use of lead integrator because of

concerns over transparency and potential conflict of interest (Matthews, 2007). It would appear that the UK MoD has similar concerns—hence the imposition of these restrictive measures (i.e., no free hand, prohibited from competing). But these measures run contrary to the concept of optimal risk transfer to drive VfM where output specification are used and the government specifies the service it wants and the basic standards. In a typical PPP, the government leaves the contractor with the flexibility and responsibility over how to deliver the service and, through this process, it transfers the design, construction, and operational risks to the private-sector party.

2. Challenge 2

The global security environment is dynamic, fast-changing, and unpredictable. Therefore, it is not possible to foresee and plan for every possible eventuality and plan for it in the contract. The military requires flexibility³⁷ in its PPP contracts that will facilitate its timely responses to changes in the global security environment. While most UK MoD PPP contracts have the flexibility to deal with changes, it comes with a price—VfM might be jeopardised when changes are made (NAO, 2008).

3. Challenge 3

The most controversial issue confronting the defense PPPs is the contracting out of activities bordering front-line operations or supporting critical military missions. These front-line programs include the Strategic Sea Lift roll-on/roll-off ferries (Ro-Ro Program), Heavy Equipment Transporter (HET), FSTA, and Skynet 5 (see Appendix B for project summaries). The media dubbed the recently signed FSTA as much closer to the “front line” of the military than previous PPPs and “would be an impressive achievement...it is the largest defense deal, indeed the largest PFI deal of any kind, ever” (Project Finance, 2009).

The propriety of contracting out activities at the front-line operation, bordering front-line operation, or supporting critical military missions can be traced back to the

³⁷ Examples include varying its demand for accommodation with its troops’ movements, adopting new technology, or modifying the existing services or equipment in responses to new threats.

long, drawn-out debate on contracting out inherent governmental functions. Prior to 1980, the cornerstone of UK defense policy was self-sufficiency on the premise that the capacity, expertise, and institutional structure to execute national defense programs reside in MoD and not the private sector:

...the armed services provided directly all the services for which they were responsible and owned the main resources necessary to provide those services. Comprehensive in-house self-sufficiency across the spectrum of “front line” and support functions was considered essential for operational effectiveness. (Uttley, 2005)

During the Blair government era (1997 to 2007), the UK defense PPP boundary was pushed unprecedentedly beyond non-front-line operations (Library Research Paper, 2008). The contractors roles are expanded from home bases to deployed operations (referred to as “Contractors on Deployed Operations” or “CONDO”).

There are **no no-go areas** [emphasis added] for PFI as far as we are concerned,” says one defense official. “The key point is to deliver what the armed services want in terms of both military capability and efficiency. (BBC News, 2001)

The UK MoD asserted that the contractor is a crucial force multiplier that augments the military personnel and enables the military personnel to focus on mission-critical activities during battle, by relieving the military personnel of non-core but tedious support missions. The UK MoD adopts a liberal approach in drawing the “no-go” line at “combat/fighting” and capabilities³⁸ explicitly mandated by policy to be retained in-house (Uttley, 2005). The UK MoD’s broad definition of “no-go” areas has drawn strong criticism that it has gone too far in bringing contractors so close to the front line and in contracting out mission-critical operations such as the Skynet 5 (military satellite communication) where failure of the private sector to deliver would be catastrophic during crisis and war.³⁹

³⁸ Armed security, provost, secure couriers, and marine hydrography.

³⁹ The U.S. DoD has a totally opposite view from the UK MoD with regards to the outsourcing of military satellite communication: “there has been no suggestion that all military demand for satellite communication should be satisfied by the private sector. At best, a mix of dedicated satellites, owned and operated by the U.S. Department of Defense and leased commercial capability is called for. Indeed one report by the independent U.S. General Accounting Office in 1997 advocated the accelerated introduction of a dedicated military successor to the Defense Satellite Communications System, precisely to avoid the higher cost of leasing the necessary capability from the commercial sector” (McLean, 1999).

First, instead of freeing up critical military resources at the front line, the military has to deploy resources to protect contractors operating near the front line.

Second, the legal status of contractors under international law and Geneva Protocol is vague. The contractor personnel run the risk of not being accorded “lawful combatant” status and, if captured, they can be held personally responsible for violation of civilian laws under the domestic justice system of the detaining state (unlawful combatant, wikipedia.org, n.d.).

Third, the involvement of contractors complicates the accountability chain and compromises mission success at front-line activities, as a commander’s freedom and ability to “improvise quickly in using tactics, employing weapons, and deploying personnel” Uttley (2005) is hampered by the contract. As correctly pointed out by Uttley (2005), “a contract—a legal, binding document—even when written with the best of intentions, cannot cover every possible contingency in advance.”

Fourth, contractors are not civil servants and are less reliable than military personnel. Specifically, they cannot be compelled to perform missions (i.e., they cannot be punished for desertion or dereliction of duty), especially in the face of conflicts and dangers. Nor can they be expected to possess the duty of loyalty to the greater good. Contractors’ duties of loyalty are—first and foremost—to their shareholders, not to the country employing them.

Over the years, the UK Defense Committee⁴⁰ has on a number of occasions expressed its concern that the MoD, by introducing PPPs into activities increasingly close to the front line, faces the danger of PPPs taking control of war-fighting capabilities out of MoD hands:

It is...right that “operational effectiveness” and “quality of service” should be taken into account [in considering the use of PFI]. Whether PFI delivers value for money should depend not just on a purely financial balance of costs and benefits, but also on whether risk is managed more

⁴⁰ Committee of fourteen Members of Parliament, appointed by the House of Commons and drawn from the three largest political parties, whose responsibility is to monitor and to hold to account the Ministry of Defence and its associated public bodies, including the Armed Forces, on behalf of the House of Commons and the people who elect it. (House of Commons Defence Committee, 2009)

efficiently. **In the defence field getting the risks wrong does not just undermine the calculation of cost-benefit of particular projects; it can have profound consequences for the operational readiness and effectiveness of our Armed Forces, and ultimately for the safety of our Service personnel operating in hostile environment** [Emphasis added]. (House of Commons Defense Committee, 2002 (a))

Furthermore, one of the key drivers of VfM is the allocation of risks to the party best able to manage them at the least cost. The fact that the PPP assets are brought so near to the front line implies that MoD will have to retain most of the risks and flexibilities⁴¹ associated with the operational use of the PPP assets near the front line. For such assets, it will be difficult to establish the case for VfM through risk transfer to the contractor, third-party revenue to offset running costs, and for the case for PPP. (House of Commons Defence Committee, 2002 (b)).

In response, the UK MoD reassured the Defence Committee that measures are in place to mitigate the risks and concerns highlighted. They include step-in rights, recall of contractor's standby assets by the UK MoD to take over the assets and operations during emergencies, and termination. Of greater significance is the use of a mixed workforce, comprising contractor personnel, regular military personnel, and Sponsored Reserves (SR) to minimize risks to operational critical missions. The SR concept, introduced in 1996, is relatively new and is intended to address the perceived "unreliability" of the private sector employees and their lack of military ethos. Under SR, contractors providing services in or near the front line will enroll parts of their workforces as voluntary SR. These employees will be trained as reservist members of the Armed Forces and are subject to the Service Discipline Acts and Service regulations, and are compelled to answer to a call-out (Krahmann, 2008).

The Heavy Equipment Transporter (HET) PPP was the pilot project implementing the SR concept. In this project, the contractor will operate the new HET vehicles that are capable of transporting the Challenger II tank anywhere in the world. The SR forces,

⁴¹ Flexibility both in scheduling and in designing the assets. According to the House of Commons Defence Committee (2002 (b)), "the more military characteristics that have to be built into an asset, the more difficult it becomes for the service provider to use them flexibly using commercial disciplines."

accounting for one-third of the total HET workforce, will be responsible for driving, maintenance, and supporting the logistics of the vehicles. Similar arrangements are made for the Ro-Ro program and the FSTA. In the Ro-Ro program, the crews belong to the contractor and are eligible to be called out as SR when the ships transit a “warlike zone” (House of Commons Defense Committee, 2002 (a)). Under the FSTA, Royal Air Force (RAF) pilots will fly the tanker aircraft when in military use (in both peacetime and military crisis) and RAF engineering personnel will undertake maintenance activities alongside contractor’s civilian employees, some of whom are SR (UK MoD, 2009).

With or without the PPP, the outsourcing of front-line, close to front-line operations, and mission-critical operations will remain controversial regardless of the contracting modes. The crux of the debate involves a greater public policy issue of what should and should not be outsourced by the military, which is beyond the scope of this research project. However, for the purpose of this research project, suffice it to say that PPP introduces additional layers of complication with regard to the assets belonging to the contractor and the involvement of lenders.⁴² This might potentially constrain the military’s flexibility in deploying and modifying the assets or service provision at short notice to meet the dynamic and fast-paced nature of front-line operations and mission-critical operations.

C. U.S. EXPERIENCES

The progress of the U.S. MHPI program—the only defense PPP successfully launched in the U.S.—has been slower than expected. The initial target in 1996 was to repair, replace, and rehabilitate over 200,000 inadequate family housing units by Fiscal Year (FY) 2006. However, as of FY 2009, the MHPI program has only reached 67 percent of the target and is projected to reach 98 percent by FY2012 (GAO, 2009 (a)). The delay is attributable to the lack of supporting fiscal infrastructure to guide the Services’ implementation of the MHPI program. The Services faced a steep learning curve and were confronted with a whole range of new issues “involving contract and

⁴² Under project finance, the lender takes security of the future cash flow of the project rather than any direct security over assets. As such, any changes that potentially put the cash flow at risk will be subject to the lenders’ scrutiny.

fiscal law, installation control and criminal jurisdiction, ethics and environmental law” (Vest, 2002). Before the Services can proceed with the program, they have to address fundamental issues, such as approaches to solicitation and the applicability of Federal Acquisition Regulations and the various procurement statutes. The lack of policy guidance resulted not only in delay, but also in inconsistent practices among the Services in the implementation of the MHPI program. The success of the MHPI program is dependent on the demand (i.e., occupancy rate) for housing. The demand risk is vested with the developer. According to GAO (2009 (a)), the occupancy rates for housing at some military bases are lower than expected. A low occupancy rate would affect the developer’s ability to generate sufficient revenue to repay debt and to plough back the funds into the housing program for more construction or future upgrades. In addition, the MHPI program also has to grapple with the ongoing defense force structure and infrastructure initiatives⁴³ that make demand forecast and planning difficult. Lastly, the MHPI is not spared from the global credit crunch that will slow down its progress.

This research project did not find any negative report on the MHPI. However, there is some uncertainty in the U.S. that the MHPI will pave the way for more defense PPPs. The current Administration has expressed strong criticism of “outsourcing services that should be performed by the government” (The White House, 2009). It is often harder to justify that outsourcing of services as appropriate for defense. But one should not be too hasty to completely rule out the possibility of defense PPPs taking root in the U.S. Recently, Congress directed a feasibility study of a pilot program on Commercial Fee-For-Service air-refueling support, which might open up a new chapter in outsourcing. Specifically, the study identified the requisite legislative actions on multiyear contracts and indemnification provisions before the pilot program moves forward (GAO, 2009 (b)). Some of these challenges in the Commercial-Fee-For-Service are common to the implementation of defense PPPs. Therefore, their resolution could potentially stimulate the introduction of more defense PPPs in the U.S.

⁴³ For example, base realignment, closure, increasing force sizes, etc. (GAO, 2009 (a)).

D. AUSTRALIAN EXPERIENCES

The Australian Defence Force (ADF) is not convinced that a business case exists for PPPs. Currently, all its military equipment is directly purchased from the manufacturer rather than through PPPs (Grevatt, 2008). Over the years, ADF had duly considered the feasibility of PPPs in a number of its major acquisition programs, such as air-to-air refueling, “Sea 1444,”⁴⁴ Helicopter Aircrew Training School (HATS), and Fixed-Wing Pilot Training. In some of these programs, the ADF requested that the tenderers submit bids for *both* the PPP and the direct purchase option for the provision of the same goods and services. This permitted a detailed comparative evaluation of the two approaches. Eventually, the decisions were direct purchase for the air-to-air refueling, the “Sea 1444,” and the Fixed-Wing Pilot Training,⁴⁵ while the feasibility of PPP for HATS is still under deliberation (Franchi, 2009). For the “Sea 1444,” uncertainty over VfM was cited as the main reason for not going down the PPP route:

In announcing the shortlisted bidders, the government also indicated that it had decided not to undertake the project via a private finance initiative (PFI) arrangement, opting instead to directly purchase...Citing uncertainty over value for money...It is understood that the boats could not be commercially insured because of the possibility that they could be involved in combat. (Bostock, 2002)

E. SINGAPOREAN EXPERIENCES

In its pursuit of PPP, the Singapore Ministry of Defense (MINDEF) is guided by the VfM fundamentals and there is no official “no-go” line. Instead, MINDEF is open-minded to suggestions from industry on potential candidates for PPP, including the provision of operations capability:

MINDEF is open to PFI in other areas, where it makes economic sense. **We welcome PFI proposals from our industry partners, even for those that could involve provision of operations capability** [Emphasis added]. For example, the UK MOD is planning to lease out their air refuelling tankers for commercial use. For MINDEF, we are exploring the possibility

⁴⁴ For acquisition of up to 15 new patrol boats for the Royal Australian Navy.

⁴⁵ Contracted using a performance-based contract for construction and delivery of pilot training (Franchi, 2009).

of leasing out our stockpile of military transport vehicles to commercial logistics service providers. (Singapore Permanent Secretary (Defense), 2003)

Nevertheless, to date, the profile of Singapore defense PPPs signed and the new PPPs currently under consideration⁴⁶ remain predominantly for back-end support and in training. The PPP of the military transport vehicles, which envisions “the assets would be used by the commercial sector during peacetime and by the military during emergency,” (Singapore Permanent Secretary (Defense), 2003) did not materialize. As for those defense PPPs signed around the mid-2000s, they have just been operationalized and no report is yet available to assess the performance of these PPPs.

F. SUMMARY

From the above discussion of the different countries’ experiences, this research project observed that only the UK MoD has taken its quest for PPPs beyond back-end support. For similar requirements, some countries found a business case for PPPs while the others opted for conventional procurement tools instead. Table 3 provides a comparison of the countries’ approaches. The exception is accommodation requirements, where the countries have unanimously embraced PPPs. In Chapter IV, this research project will analyze and identify the factors that caused the defense PPPs to thrive and succeed better in some countries than in the others.

Table 3. Comparison of Countries’ Approaches

	UK	U.S.	Australia	Singapore
Air-to-Air Refuelling	PPP	Non-PPP	Non-PPP	NA*
Fixed-Wing Training	PPP	NA*	Non-PPP	PPP
Military Satellite Communication	PPP	Non-PPP	NA*	NA*
White Fleet (i.e., military admin vehicles)	PPP	NA*	NA*	Non-PPP

*NA = Not Applicable as insufficient information is available for discussion.

⁴⁶ The two PPPs currently under tender are: (i) Fixed Wing Course, involving “the development of an aircraft flight-training PPP and the procurement of new training jets after the first MINDEF PPP project - the basic wings course” [Project Finance International, 2009 (a)] and, (ii) Multi-Mission Range Complex, “for the development of a new rifle range and provision of small arms for firing exercises” (Project Finance International, 2009b).

IV. CONCLUSION AND RECOMMENDATION

A. INTRODUCTION

To recap, in Chapter I, this research project raised the following three issues as the backbone of this research project:

- Do the common denominators point toward PPPs as an effective contracting tool rather than a political tool to conceal government borrowing?
- Are PPPs suitable for defense acquisitions?
- Are some areas in defense acquisitions more suitable than others to be contracted out as PPPs?

This research project explored the evolution of PPPs in four countries: the UK, the United States (U.S.), Australia, and Singapore. In Chapter II, VfM—an ambiguous objective—was determined to be the common denominator in three of the countries' pursuits of PPPs. In Chapter III, this research project highlighted that unanimous adoption of PPPs does not extend to all defense requirements. In this concluding chapter, this research project will address the three issues raised in Chapter I by summarizing the findings from the discussions in the previous chapters.

B. PPPS—EFFECTIVE CONTRACTING TOOL OR POLITICAL TOOL?

Like any other tool, PPP as a contracting tool is only as good as its implementation. Hence, the issue of whether PPP is an effective contracting tool or a political tool cannot be addressed adequately without first addressing whether there is a stable, structured, and transparent procurement environment in which PPPs can operate. The absence of any of the following factors⁴⁷ in the environment in which PPPs operate will impair a PPP's effectiveness as a contracting tool:

⁴⁷ Adapted from “Good Practices in the public-private partnership process” (OECD, 2008).

1. Affordability and VfM as the benchmarks for determining the viability of a PPP. Government has to take a longer term view on the sustainability of debt repayment and the impact of current PPP decisions on the government's future financial position.
2. Strict adherence to VfM as the key driver. This means not proceeding with a PPP when there are uncertainties in VfM, as seen in the ADF "Sea 1444" project and the UK MoD's cancellation of the Combat Support Vehicles PFI in 2001:

The decision to cancel the PFIs was not taken on 3rd party revenue ground alone. The difficulty in defining output-based specifications, the limited scope for innovation, the complexity of the requirement and **uncertain value-for-money** [emphasis added] advantage over the Public Sector Comparator (PSC) were all as important as 3rd party revenue and they all contributed to the decision. (House of Commons Defense Committee, 2002 (b))

3. Categorical ruling-out of "off-balance sheet" financing as the driver.
4. Risk-sharing as one of the pillars for achieving VfM. It is important to recognise that the allocation of risks to the party best able to manage them at the *least* cost could potentially result in a lopsided allocation of risks to a particular party. As discussed in Chapter III, such lopsided risk-sharing will call into question the case for VfM through risk transfer and the very viability of a PPP. To reiterate, this issue is especially acute for defense PPPs, which will have a higher content of uninsurable risks or insurable risks with high premiums because of its operation modus.⁴⁸
5. Competition and contestability as the other pillar to drive VfM. In the defense industry, following the massive consolidation of the defense industrial base after the Cold War, today there are only a small number of defense contractors:

In the United States, changing market conditions have prompted the consolidation of the industry into a handful of "super" prime contractors: Boeing, Lockheed Martin, Raytheon and Northrop

⁴⁸ For a risk to be insurable, five conditions must be present: (1) There must be an insurable interest in the thing or person being insured; (2) There must be a large number of similar risks being insured; (3) Any losses incurred must be accidental; (4) The risk must not be too catastrophic for the insurance company, i.e., the possible loss should not be so great as to ruin the insurance company; (5) It must be possible to calculate the risk of a loss occurring. It is obvious that a majority of the defence PPPs will not be able to meet a number of these conditions and it is also not unusual for insurance policy to contain a "WAR, HI-JACKING AND OTHER PERILS" exclusion clause.

Grumman. Within Europe...BAE Systems and European Aeronautic Defense and Space Company (EADS) have emerged... (UK MoD, 2002 (b))

According to Bromund (2009), over 70 percent of recent PPPs attract three or fewer bidders. The small defense industrial base thus limits the effectiveness of competition to drive VfM.

6. Transparency in the assessment of VfM, the PPP's regulatory and legal framework, the documentation⁴⁹ and disclosure of decision making in PPPs. Transparency is the core principle and prerequisite of an effective public policy. With transparency, there will be fewer distractions from recognizing the true benefits of PPPs.
7. Institutional capacity (i.e., a PPP unit) to provide expertise and support for PPP implementation, sharing of best practices, and promulgation of PPP policies. In the U.S., the lack of institutional capacity (i.e., guidance on policy and procedures) has resulted in delay and inconsistent practices in the implementation of the MHPI program. In the UK, the PPP institutional capability is currently provided by Partnership UK, itself a PPP with 51% private-sector partnership. However, the probity of letting such an entity (i.e., one largely owned by the private sector) spearhead and shape PPP implementation in the public sector is debatable:

Partnership UK receives a fee when a PPP contract reaches fruition... Its launch was backed by the European Investment Bank, the European Union's financing arm, whose priorities include the promotion of development of PFI/PPP projects in Europe. The Advisory Council to Partnerships UK...told the company in Summer 2002 to draw up a **clearer code of conduct to avoid conflicts of interest** [emphasis added]. It was concerned that both shareholders and directors have a variety of commercial involvements in schemes in which Partnerships UK acts as an adviser. (UNISON, 2002)

8. Competency to manage PPPs. The public sector needs a new skill set as PPPs transform the role of a public-sector manager from being a manager of assets to a manager of contracts (Bromund, 2009). This new skill set places much greater emphasis on the contract management skill of the public-sector manager and less on their technical expertises. Such skill is currently lacking in most public-sector managers, who are mostly technical specialists in their narrow fields. In terms of PPP proficiency,

⁴⁹ Information on, "what and when the government will pay, and full details of guarantees and contingent liabilities," (OECD, 2008).

even after almost a decade since its inception, the competence of the public-sector managers is still found wanting:

There has been no improvement in tendering times, significant risks to value for money continue to be taken when public authorities make late changes to deals, and **there is a continuing lack of skills and experience** [emphasis added] in public sector PFI teams. (House of Commons Committee of Public Accounts, 2007)

Other reputable observers continue to argue that the MoD suffers from serious managerial shortcomings...These **managerial weaknesses** [emphasis added] have contributed to cost and schedule overruns on many of the MoD's large procurement programs. (Bromund, 2009)

From the above discussion, and coupled with the observations⁵⁰ made in Chapter II, if one were to set “PPP as a Political Tool” at one end of a continuum and “PPP as a Contracting Tool” at the opposite end, the UK will be at the one end (i.e., “PPP as a Political Tool”), with Singapore and Australia at or close to the opposite end (i.e., “PPP as a Contracting Tool”), and the U.S. in the middle of the continuum.

C. ARE PPPS SUITABLE FOR DEFENSE ACQUISITIONS?

The discussion in Section A leans toward the argument that PPPs are not suitable for defense acquisitions. However, it could be argued that one could possibly inculcate some of the factors⁵¹ currently found lacking in the countries' PPP environments through the exercising of political will, discipline, and the investment in human capital. Addressing these factors has the potential to enhance the use of PPPs as a viable contracting tool for defense acquisition. However, for defense it is not possible to alter the environment in which the defense operates (Factor 4). In addition, it will take considerable effort, resources, and time to rejuvenate the competitiveness in defense industries (Factor 5).

⁵⁰ Three key observations from Chapter Three: (1) The UK has not been able to shed the shadow of “off-balance sheet” as a driver; (2) Both the UK and the U.S. appear to be driven by budget constraints; (3) All countries uphold VfM as the goal for implementing PPPs.

⁵¹ Factors 1(Affordability as benchmark), 2 (Strict adherence to VfM), 3 (“Off-balance sheet” not a driver), 6 (Transparency), 7 (Institutional Capacity), and 8 (Competency to manage PPPs).

This research project will now expound on the proposition that PPPs are not suitable for defense through the economic theory of Transaction Cost Analysis (TCA). In the context of PPPs, transaction costs are the costs of arranging for the contracts and enforcing them. TCA is an economic theoretical framework, founded by Ronald Coase in 1937, for predicting when certain economic tasks would be performed internally by firms, and when they would be performed by the market. (Transaction Cost, n.d.), wikipedia.org). The underlying concepts of TCA are (i) the two main behavioral assumptions of *bounded rationality* and *opportunism*. Bounded rationality explains rational decision making by buyers and sellers under imperfect information and *opportunism* assumes that, given the opportunity, the decision makers will exploit the incomplete or distort the disclosure of information to their advantage. (ii) Asset specificity (i.e., transaction-specific assets) whereby, when there is a special investment by one party and the investment loses value outside this transaction, the invested party is a “hostage” (i.e., held-up).

The basic assumption of TCA is that if an organization is highly adaptive to environmental changes, it can assess the performance of its partnered firm, and if the safeguarding costs are low, then it will favor market governance (i.e., outsourcing). Conversely, in-sourcing will be appropriate if there will be unforeseen changes in circumstances surrounding an exchange (i.e., environmental uncertainty), there is difficulty in monitoring and assessing the performance of the parties (i.e., behavioral uncertainty), and the transaction involves highly specific assets (sunk costs) that have little value outside of a particular exchange relationship (Hawkins, 2009). It is apparent that the defense PPPs share most of the characteristics of transactions more appropriate for in-sourcing.

In the words of Parker and Hartley (2001), “the defense sector appears to be acutely prone to information imperfections and asymmetries when PPP contracts are negotiated,” and there are factors⁵² peculiar to the defense PPPs that increase their transaction costs and render defense acquisition not a suitable candidate for PPPs:

⁵² Some of these factors were discussed in Chapter III.

1. The difficulty of writing long-term contracts that cover all contingencies in peacetime, crisis, and war implies that the government has to rely on relational contracting (i.e., trust and reputation) to minimize the transaction costs in a PPP. As discussed in Chapter III, the private and public sectors have divergent goals⁵³ and different culture. Therefore, it will not be realistic to rely on relational contracting to be effective in minimising transaction costs.
2. The long-term nature of the PPP contracts means the government would lose its organic in-house capability to provide the outsourced services. This, coupled with the highly specialized military equipment (asset specialties), provides an opportunity for opportunism by the private sector.

D. CONCLUSION AND RECOMMENDATION

The findings from this research project suggest that PPPs are not suitable for the majority of defense acquisition, especially for requirements supporting front-line and mission-critical operations. Even the “simplest” requirement in defense, such as accommodation, is not spared from uncertainties arising from the continual and dynamic defense force re-structuring, such as base closure, realignment, and force-size expansion/downsizing. Similarly, the PPPs of other back-end defense support, such as training, also come with a cost—the loss of internal capability and resources that can supplement the front line in crisis and conflict.

This brings one back to the point that “efficiency is a particularly nebulous goal in the realm of defense” Bromund (2009). The impact from loss of internal capability is often not felt until years later. To return to internal resources will be an uphill task. The loss of system engineering capability in the U.S. DoD over the last 20 years is a good example:

The Defense Science Board Task Force on Developmental Test and Evaluation reported in May 2008 that “the single most important step necessary” to address high rates of failure on defense acquisition programs is “a viable systems engineering strategy from the beginning.” The Government Accountability Office has reached similar conclusions.

⁵³ Wealth accumulation versus social good.

Unfortunately...the Air Force has systematically dismantled its systems engineering organizations and capabilities over the last twenty years. The other services have done the same. (Levin, 2009)

In closing, for defense PPPs to be an effective contracting tool, its costs and benefits must be judiciously compared against the costs and benefits of the traditional procurement tool. This includes improving the realism of calculating in-house implementation costs. The current process places a heavy reliance on historical cost data and hypothetical assumptions. One possible approach is to request tenderers to submit bids for *both* the PPP and the direct-purchase option for the provision of the same goods and services. This approach is currently being practiced by Australia and Singapore in some of their PPPs. This approach facilitates a detailed comparative evaluation. However, this must be balanced against the adverse impacts of increased costs, complexities, efforts, and time incurred by all the parties involved in the tender. There must also be a close scrutiny of the comparative outcome to ensure that it is fair, reliable, and unbiased. Therefore, an independent (i.e., nonpartisan) agency that is competent, objective, and free from any potential or appearance of conflict of interest is required for the review.

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APPENDIX A. DEFINITIONS OF PPPS

(1) OECD (2008):

an agreement between the government and one or more private partners (which may include the operators and the financiers) according to which the private partner deliver the service in such a manner that the service delivery objectives of the government are aligned with the profit objectives of the private partners and where the effectiveness of the alignment depends on a sufficient transfer of risk to the private partnership. (p. 17)

(2) IMF (2004):

Public-private partnerships (PPPs) refer to arrangements where the private sector supplies infrastructure assets and services that traditionally have been provided by the government. PPPs are involved in a wide range of social and economic infrastructure projects, but they are mainly used to build and operate hospitals, schools, prisons, roads, bridges and tunnels, light rail networks, air traffic control systems, and water and sanitation plants. PPPs can be attractive to both the government and the private sector. For the government, private financing can support increased infrastructure investment without immediately adding to government borrowing and debt, and can be a source of government revenue. At the same time, better management in the private sector, and its capacity to innovate, can lead to increased efficiency; this in turn should translate into a combination of better quality and lower cost services. For the private sector, PPPs present business opportunities in areas from which it was in many cases previously excluded. (p. 4)

(3) European Investment Bank (2004):

a generic term for relationships formed between the private sector and public bodies often with the aim of introducing private sector resources and/or expertise in order to help provide and deliver public sector assets and services. The term PPP is thus used to describe a wide variety of working arrangements from loose, informal and strategic partnerships, to design-build-finance-and-operate (DBFO) type service contracts and formal joint venture companies. (p. 2)

(4) Standard and Poor's (2005):

any medium- to long-term relationship between the public and private sectors, involving the sharing of risks and rewards of multi-sector skills, expertise and finance to deliver desired policy outcomes. (p. 19)

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APPENDIX B. PROJECT SUMMARIES FACT SHEET— EXTRACTS FROM THE PARTNERSHIPSUK WEB SITE

(1) Allenby/Connaught:

Project Allenby/Connaught is the largest estates PFI project the MoD has ever undertaken, and will see the significant redevelopment of Aldershot Garrison and garrisons in the Salisbury Plain area, including the construction of several new barracks. In all, the project will provide 18,000 military and civilian staff with brand new or refurbished living and working accommodation

(2) Colchester Garrison:

Redevelopment, rebuilding and refurbishment of Colchester Garrison to provide accommodation and associated services (messing, education, storage, workshops, etc.)

(3) Royal School of Military Engineering:

The project is for the provision of Training and associated Services Support and Infrastructure to the Royal School of Military Engineering (RSME) at its sites in Medway, Kent and Minley in Hampshire. This project will improve essential training and provide significant investment for new and refurbished soldier accommodation, delivering around 1700 soldier bedspaces.

(4) Strategic Sealift (Ro-Ro Ferries):

The Strategic Defense Review specifically identified the need for a rapid transport service in order to give an enhanced strategic sealift capability to support Joint Rapid Reaction Forces (JRRF) on a global basis. The Strategic Sealift Service Project (the Project) is one of the largest global defense PFI projects being for the provision of a six ship transport service (ships, crew operations and maintenance) for over 20 years. The capital assets, the ships, were developed to meet the specific requirements of the MoD from a successful commercial design. This followed an extensive survey of recent deliveries worldwide to establish a suitable combination of shipyard and ship design. This increase in the capital cost was minimised whilst providing the operational flexibility and performance required by the MoD. The requirement to derive third party commercial revenue was also reflected in the design of the ships by increasing the ice class and by installing larger engines in three of the ships to ensure that an operating speed in excess of 20 knots is achieved to meet the demands of

the charter market. Private supplier, Foreland Shipping, is exposed to significant trading risks. It has successfully operated ships in the commercial market, trading in the Baltic and Northern Europe. The ships have moved cargo for the MoD and have increased efficiency by carrying part cargoes for other European defense organizations when space allows. Foreland Shipping also arranged a commercial time charter for one of the ships on behalf of the MoD during a period when the MoD had a gap in its schedule for the ship. These operations generated additional revenue for the MoD.

(5) UK Military Flying Training System (UKMFTS):

The UK Military Flying Training System (UKMFTS) is a Tri-Service programme that will cater for the future flying training needs of the UK Armed Forces. UKMFTS will deliver the training of 19 aircrew disciplines, including Defense Helicopter Flying School, to the quality and quantity specified by MOD. It covers the period from the entry of students who have passed through Aircrew Selection up to the point they leave UKMFTS ready to enter their respective Operational Conversion Units (OCU). UKMFTS also covers the training of the Instructors (both military and civilian) needed within UKMFTS, plus refresher training. In addition it covers the provision of aircraft for University Air Squadrons and Air Experience Flights. UKMFTS cannot operate in isolation from other elements of the Armed Forces and many dependencies will need to be managed coherently to deliver the requirement. Importantly, UKMFTS is concerned with the delivery of training and training capability, rather than the procurement of platforms and infrastructure. UKMFTS will begin to incrementally replace the present flying training arrangements for the Royal Navy, the Royal Air Force and the Army Air Corps in 2007.

(6) Future Strategic Tanker Aircraft (FSTA):

The Future Strategic Tanker Aircraft (FSTA) program is a MOD PFI contract to provide air refuelling and air transport services to the RAF. It will replace the RAF's current fleet of VC 10 and TriStar aircraft. The aircraft will be owned and supported by the private sector partner AirTanker while the RAF will have operational control and fly the military missions.

(7) Skynet 5:

Provision of satellite communication services to MoD including:
Operation of existing Skynet 4 satellites Upgrade and support of ground-based infrastructure in the UK Design, build and launch of Skynet 5 satellites The provision of new remote terminals (land mobile and Royal Navy ships)

LIST OF REFERENCES

- AECOM. (2005). *Synthesis of public-private partnership projects for roads, bridges, and tunnel from around the world, 1985-2004*. Retrieved May 15, 2009, from http://financecommission.dot.gov/Documents/Background%20Documents/ppp_global_sy_rpt_83005.pdf
- Anderson, G. (2008). "Ascent rises to meet MFTS requirement." *Jane's Defense Industry*. Retrieved October 15, 2009, from <http://jdin.janes.com>
- Baker, A. (2009). "PFI crunch time." Retrieved October 15, 2009, from http://www.mod.uk/NR/rdonlyres/E4C8245D-2337-4A76-8EB7-65A832E7FB55/0/desider_10_feb09.pdf
- Blitz, J. (2009). "Warning of 10–15% reduction in defense budget." *The Financial Times*. Retrieved September 1, 2009, from http://www.ft.com/cms/s/0/bb7ff72c-6691-11de-a034-00144feabdc0,dwp_uuid=bc5ebee8-713c-11de-877c-00144feabdc0.html
- Bostock, I. (2002). "Royal Australian Navy shortlists patrol boat tenders." *Jane's Defense Industry*. Retrieved October 15, 2009, from <http://jdin.janes.com>
- British Broadcasting Corporation (BBC). (2001, May 17). "The NHS and the private sector." Retrieved September 1, 2009, from http://news.bbc.co.uk/vote2001/hi/english/main_issues/sections/facts/newsid_1182000/1182645.stm
- British Broadcasting Corporation. (2008, December 3). "Security concerns halted behind the frontline." Retrieved October 15, 2009, from <http://news.bbc.co.uk/2/hi/business/1689031.stm>
- Broadbent, J., & Laughlin, R. (2003). "Public private partnerships: An introduction." *Accounting, Auditing & Accountability Journal* 16(3): 332–341.
- Bromund, T.R. (2009). *Contracting out in defense: Lessons from the British experience for the U.S. and Great Britain*. Washington, D.C.: The Heritage Foundation. Retrieved June 5, 2009, from <http://www.heritage.org/Research/NationalSecurity/bg2278.cfm>
- Brunei Times. (2008, August 13). *UK expert's lecture on best practices in PPP*. Retrieved June 5, 2009, from http://www.bt.com.bn/en/home_news/2008/08/13/uk_experts_lecture_on_best_practices_in_ppp

- Congressional Budget Office (CBO). (2004). *H.R. 4879, Military Housing Improvement Act of 2004*. Retrieved September 1, 2009, from <http://www.cbo.gov/ftpdocs/56xx/doc5696/hr4879.pdf>
- Commission on Public Private Partnerships. (2001). *Building better partnerships: The final report of the Commission on Public Private Partnerships*. London, United Kingdom: Institute for Public Policy Research.
- Corner, D. (2006). *The United Kingdom private finance initiative: The challenge of allocating risk*. Retrieved May 15, 2009, from <http://www.oecd.org/dataoecd/5/19/43479923.pdf>
- The Economist. (2007, January 11). *Under PFIRE*. Retrieved November 21, 2009, from http://www.economist.com/world/britain/displaystory.cfm?story_id=E1_RVNSQ_GJ
- European Investment Bank (EIB). (2004). *The EIB's role in public-private partnerships (PPPs)*. Retrieved June 5, 2009, from <http://www.eib.org/projects/publications/the-eibs-role-in-public-private-partnerships-ppps.htm>
- Emma, K. (2008, February). "Changing times down under: Australia's two aircrew projects to emphasize jointness." *Training and Simulator Journal*. Retrieved June 5, 2009, from <http://www.tsjonline.com/story.php?F=3283288>
- English, L. (2004). *Using PPP to deliver social infrastructure: Health care delivery in Victoria*. Retrieved September 1, 2009, from <http://www.smu.edu.sg/events/apira/2004/Final%20Papers/1209-English.pdf>
- English, L. (2005). *Submission to the legislative assembly Public Accounts Committee inquiry into public private partnerships*. Sydney, Australia: The University of Sydney. Retrieved June 5, 2009, from [www.parliament.nsw.gov.au/prod/PARLMENT/committee.nsf/0/6128924cfc4e1cc4ca25709f001108d0/\\$FILE/Sub.No.4.pdf](http://www.parliament.nsw.gov.au/prod/PARLMENT/committee.nsf/0/6128924cfc4e1cc4ca25709f001108d0/$FILE/Sub.No.4.pdf)
- English, L. (2006). *Public private partnerships in Australia: An overview of their nature, purpose, incidence and oversight*. Retrieved September 1, 2009, from <http://www.austlii.org/au/journals/unswlj/2006/46.html#footnote48>
- European Commission (EC). (2003). *Guidelines for successful public private partnerships*. Directorate-General Regional Policy, European Commission. Retrieved September 1, 2009, from http://ec.europa.eu/regional_policy/sources/docgener/guides/ppp_en.pdf

- Farazmand, A. (2001). *Privatization or public enterprise reform? International case studies with implications for public management*. California: Greenwood Publishing Group.
- Financial Close. (n.d.). Business Dictionary.com definition of financial close. Retrieved October 10, 2009, from <http://www.businessdictionary.com/definition/financial-close.html>
- Financial Times. (2007, July 27). *Time to set the PFI record straight*. Retrieved September 1, 2009, from http://search.ft.com/ftArticle?queryText=pmi+net+debt+IFRS&y=0&aje=false&x=0&id=070727000705&ct=0&nclick_check=1
- Flight International. (2003). *Get it right*. Retrieved October 15, 2009, from <http://www.flightglobal.com/articles/2003/09/16/171243/get-it-right.html>
- Flinders, M. (2004, November). "The politics of public-private partnerships." *British Journal of Political and International Relations* 7: 215-239.
- Franchi, P. (2009). *Australia gives green light to first step in new helicopter pilot training system*. Retrieved October 15, 2009, from <http://www.shephard.co.uk/news/3689/>
- Government Accountability Office. (2009) (a). *Military housing privatization: DoD faces new challenges due to significant growth at some installations and recent turmoil in the financial markets*. Retrieved October 15, 2009, from <http://www.gao.gov/new.items/d09352.pdf>
- Government Accountability Office. (2009) (b). *Briefing on Air Force's response on fee-for-service aerial refuelling*. Retrieved October 15, 2009, from <http://www.gao.gov/new.items/d10124r.pdf>
- Giles, C., & Shellock, D. (2009). "Warning to Britain over high debt level." *The Financial Times*. Retrieved September 1, 2009, from <http://www.irishtimes.com/newspaper/finance/2009/0522/1224247112311.html>
- Grahame, Allen. (2001). *The private finance initiative (PFI)*. Retrieved September 1, 2009, from <http://www.parliament.uk/commons/lib/research/rp2001/rp01-117.pdf>
- Grevatt, j. (2008). "Australia seeks to emulate UK procurement process." *Jane's Defense Industry*. Retrieved October 15, 2009, from <http://jdin.janes.com>
- Held, et al. (2002). *Seeking non-traditional approaches to collaborating and partnering with industry* (MR-1401-A, 2002). Santa Monica, California: RAND Corporation.

- Hall, D., & Lobina, E. (2005). *The relative efficiency of public and private sector water*. Retrieved September 1, 2009, from www.psir.org/reports/2005-10-W-ffic.doc
- Hawkins, T. (2009). *Transaction cost analysis and outsourcing*. Unpublished PowerPoint presentation. Naval Postgraduate School.
- Her Majesty's (HM) Treasury. (2003). *PFI: Meeting the investment challenge*. Retrieved June 5, 2009, from http://www.hm-treasury.gov.uk/press_88_03.htm
- HM Treasury. (2006). *Value for money assessment guide*. Retrieved September 1, 2009, from http://www.hm-treasury.gov.uk/ppp_vfm_index.htm
- HM Treasury (UK), UK PPP Web site. Retrieved August 7, 2009, from http://www.hm-treasury.gov.uk/ppp_index.htm
- Hodge, G. (2006) *Privatization and market development: Global movements in public policy ideas*. UK: Edward Elgar Publishing.
- Hodge, G., & Greve, C. (2008, March). *The PPP debate: Taking stock of the issues and renewing the research agenda*. Paper presented at the International Research Society for Public Management Annual Conference. Retrieved June 5, 2009, from <http://unjobs.org/authors/graeme-hodge>
- House of Commons Committee of Public Accounts (HCCPA). (2007). *HM treasury: tendering and benchmarking in PFI*. Retrieved October 15, 2009, from <http://www.publications.parliament.uk/pa/cm200607/cmselect/cmpublicacc/754/754.pdf>
- House of Commons Defense Committee. (2002) (a). *Major procurement projects, fourth report of session (2001–2002)*. Retrieved October 15, 2009, from <http://www.publications.parliament.uk/pa/cm200102/cmselect/cmdfence/779/779.pdf>
- House of Commons Defense Committee. (2002) (b). *Major procurement projects, sixth special report of session (2001–2002)*. Retrieved October 15, 2009, from <http://www.publications.parliament.uk/pa/cm200102/cmselect/cmdfence/1229/122904.htm>
- House of Commons Defense Committee. (2009). Retrieved October 15, 2009, from http://www.parliament.uk/parliamentary_committees/defense_committee.cfm
- Indefensible. (2007). *Public private finance, 115*, 11. Retrieved May 20, 2009, from <http://www.ebscohost.com>

- Infrastructure Partnerships Australia. (2008). *Submission to defense procurement & sustainment review*. Retrieved June 5, 2009, from www.infrastructure.org.au/DisplayFile.aspx?FileID=57
- Infrastructure Partnerships Australia (2009). Retrieved November 21, 2009, from <http://www.infrastructure.org.au/Content/History.aspx>
- International Monetary Fund (IMF). (2004). *Public private partnerships*. Retrieved June 5, 2009, from www.imf.org/external/np/fad/2004/pifp/eng/031204.pdf
- Krahmann, E. (2008). *Controlling private military services in the UK and Germany: between partnership and regulation*. Retrieved October 15, 2009, from <http://www.who-owns-the-world.org/wp/wp-content/uploads/2008/05/krahmann-european-security.pdf>
- Levin, C. (2009). *Summary of the Weapon Systems Acquisition Reform Act of 2009*. Retrieved October 15, 2009, from <http://levin.senate.gov/newsroom/release.cfm?id=308525>
- Library Research Paper. (2008). *British defense since 1997*. Retrieved October 15, 2009, from www.parliament.uk/commons/lib/research/rp2008/rp08-057.pdf
- Linder, S. (1999, September). "Coming to Terms with the public-private partnership: A grammar of multiple meanings." *The American Behavioural Scientist* 43(1): 35–51.
- Lockheed Martin. (2006, November). *Lockheed Martin selected by Republic of Singapore to lead 20-year pilot training program*. Retrieved June 5, 2009, from http://www.lockheedmartin.com/news/press_releases/2006/LockheedMartinSelectedByRepublicOfS.html
- Lockheed Martin. (2009). Retrieved November 21, 2009, from <http://www.lockheedmartin.com/products/BasicWingsCourse/index.html>
- Management of Defense. (2009). Retrieved August 10, 2009, from <http://www.armedforces.co.uk/mod/listings/10012.html>
- Matthews, W (2007). "An end to lead systems integrators." *Federal Times*. Retrieved on October 15, 2009, from <http://www.allbusiness.com/government/government-bodies-offices-government/11968914-1.html>
- McLean, A. (1999). *PFI in the sky, or pie in the sky? — Privatising military space*. Retrieved October 15, 2009, from <http://www.ebscohost.com>
- Moore, J. (2008). The dust settles. *Public Private Finance*, 120, 31–32. Retrieved May 20, 2009, from <http://www.ebscohost.com>

- Morallos, D., & Amekudzi, A. (2008, October). "The state of the practice of value for money analysis in comparing public private partnerships to traditional procurements." *Public Works Management & Policy*. 13(2): 114–125.
- Murray, S. (2006). *Value for money? Cautionary lessons about P3s from British Columbia*. Retrieved September 1, 2009, from http://www.cupe.bc.ca/files/p3_value_for_money.pdf
- National Audit Office (NAO). (2008). *Allocation and management of risk in Ministry of Defense PFI projects*. Retrieved June 5, 2009, from www.official-documents.gov.uk/document/hc0708/hc03/0343/0343.pdf
- New South Wales Treasury (NSW Treasury) (2002). *Office of Financial Management Research and Information Paper, Private Provision of Public Infrastructure and Services*. Retrieved September 1, 2009, from http://www.treasury.nsw.gov.au/data/assets/pdf_file/0017/5390/trp02-3.pdf
- Office for National Statistics (UK). (2009). Latest Indicators. Retrieved July 7, 2009, from <http://www.statistics.gov.uk/instantfigures.asp>
- Organisation for Economic Co-operation and Development (OECD). (2008). *Public-private partnerships: In pursuit of risk sharing and value for money*. London, United Kingdom: OECD Publishing.
- Pallock, A. & Price, D. (2004). *Public risk for private gain? The public audit implications of risk transfer and private finance*. Retrieved September 1, 2009, from <http://www.unison.org.uk/acrobat/B1428.pdf>
- Parker, David, & Hartley, Keith. (2002). "Transaction costs, relational contracting and public private partnerships: A case study of UK defense." *Journal of Purchasing & Supply Management* 9 (2003): 97–108.
- PartnershipsUK. (2009). Projects database. Retrieved October 10, 2009, from <http://www.partnershipsuk.org.uk/PUK-Projects-Database-advanced-search.aspx>
- Prior, N. (2006). "Defense in the Realm." *Public private finance, 10-year review*, 8–9. Retrieved May 20, 2009, from <http://www.ebscohost.com>
- PriceWaterhouseCoopers. (2005). *Delivering the PPP promise: A review of PPPs across Europe*. Retrieved June 5, 2009, from [www.pwc.com/extweb/industry.nsf/docid/D6E013E956CAA8C985257280007B9ED5/\\$File/promise-re](http://www.pwc.com/extweb/industry.nsf/docid/D6E013E956CAA8C985257280007B9ED5/$File/promise-re)

- PriceWaterhouseCoopers. (2008). *The value of PFI hanging in the balance (sheet)?* Retrieved September 1, 2009, from http://www.infrastructureaustralia.gov.au/files/The_Value_of_PFI.pdf
- PriceWaterhouseCoopers. (2009). PriceWaterhouseCoopers Web site, United Kingdom, Home. Retrieved October 15, 2009, from <http://www.ukmediacentre.pwc.com/content/Detail.asp?ReleaseID=2617&NewsAreaID=2>
- Project Finance International [2009 (a)] Retrieved October 15, 2009, from <http://www.pfie.com/pfideal.asp?dealnumber=2435321158>
- Project Finance International [2009 (b)] Retrieved October 15, 2009, from www.pfie.com/story.asp?storycode=299041
- Royal Brunei Technical Services (RTBS). (2009). "Capabilities: Acquisition management." Retrieved November 21, 2009, from http://www.rbts.com.bn/capabilities_acqman.htm
- Shaoul, J. (2005). "A critical financial analysis of the private finance initiative: Selecting a financing method or allocating economic wealth?" *Critical Perspectives on Accounting* 16(4), 441–471.
- Shaoul, J., Stafford, A., & Stapleton, P. (2007). "Partnership and the role of financial advisors: Private control over public policy." *Policy and Politics* 35(3), 479–495.
- Singapore Ministry of Finance. [2009 (a)]. Speech by the Minister of State for Finance on the Accounting Standards Bill. Retrieved November 21, 2009, from http://app.mof.gov.sg/newsroom_details.aspx?news_sid=20090930792398684290
- Singapore Ministry of Finance [2009 (b)]. Singapore Ministry of Finance PPP Website. Retrieved October 15, 2009, from <http://www.mof.gov.sg/policies/ppp.html>
- Singapore Ministry of Finance. [2009 (c)]. Address by Mr. Tharman Shanmugaratnam, Minister for Finance, at the HPMG Asia-Pacific IFRS Conference at the Grand Copthorne Waterfront Hotel on May 27, 2009, Convergence of Global Accounting Standards. Retrieved September 1, 2009, from http://www.news.gov.sg/public/sgpc/en/media_releases/agencies/mof/speech/S-20090527-1.print.html?AuthKey=

- Singapore Permanent Secretary (Defense). (2003). Keynote Address by Mr. Peter Ho, Permanent Secretary (Defense) and Chairman, DSTA, at the D-logistics Seminar 2003, at the RSAF Air Force School Auditorium, on September 12, 2003. Retrieved October 15, 2009, from http://www.dsta.gov.sg/index.php?option=com_content&task=view&id=3192&Itemid=401
- Singapore Technologies Engineering Ltd (STAE). (2007, March). *ST Engineering's Marine Arm Awarded Submarine Rescue Contract by Singapore Navy worth about \$400M*. Retrieved June 5, 2009, from http://www.epicos.com/epicos/portal/mediatype/html/user/anon/page/default.psm1/js_panename/News+Information+Article+View?articleid=74275&showfull=false
- Standard and Poor's. (2005). *Public private partnerships: Global credit survey 2005*. Retrieved June 5, 2009, from <http://www2.standardandpoors.com/portal/site/sp/en/eu/page.article/2,1,7,0,1114054813217.html>
- Straits Times. (2009, February 13). *Steady defense spending*. Retrieved September 1, 2009, from http://www.straitstimes.com/Breaking%2BNews/Singapore/Story/STIStory_337818.html
- Timmins, N. (2009). "PFI projects to 'stay off the books'." *The Financial Times*. Retrieved September 1, 2009, from: <http://bx.businessweek.com/intl-financial-reporting-stds/pfi-projects-to-stay-off-the-books/605617894157493538-810b0823384f99083452625bfeaed666/>
- Trading Economics. (2009). Singapore GDP growth rate. Retrieved November 21, 2009, from <http://www.tradingeconomics.com/Economics/GDP-Growth.aspx?Symbol=SGY>
- Transaction Cost. (n.d.). Wikipedia.org definition of transaction cost. Retrieved November 9, 2009, from http://en.wikipedia.org/wiki/Transaction_cost
- Treasury Taskforce. (1999). *How to account for PFI transactions*. Retrieved September 1, 2009, from http://webarchive.nationalarchives.gov.uk/+http://www.hm-treasury.gov.uk/media/E/D/PPP_TTF_Technote1.pdf
- Unlawful Combatant. (n.d.). Wikipedia.org definition of unlawful combatant. Retrieved November 21, 2001, from http://en.wikipedia.org/wiki/Unprivileged_combatant
- UK Ministry of Defense (MoD). (1999). *Smart initiatives modernise defense*. Retrieved September 1, 2009, from http://www.gov-news.org/gov/uk/news/smart_initiatives_modernise_defense/44451.html

- UK MoD. (2001). *Defense acquisition*. Retrieved September 1, 2009, from http://www.mod.uk/NR/rdonlyres/1B07C74B-F841-4E78-9A13-F4A0E0796061/0/polpaper4_def_acquisition.pdf
- UK MoD. [2002 (a)]. *The acquisition handbook*. Retrieved September 1, 2009, from <http://home.cetin.net.cn/storage/cetin2/QRMS/ywxzqt3.pdf>
- UK MoD. [2002 (b)]. *Policy paper No.5 defense industrial policy*. Retrieved November 9, 2009, from <http://www.berr.gov.uk/files/file10008.pdf>
- UK MoD. (2009). FSTA Q&A. Retrieved October 15, 2009, from <http://www.mod.uk/DefenseInternet/FactSheets/ProjectFactsheets/FutureStrategicTankerAircraftfstaQuestionsAnswers.htm>
- UNISON. (2002). *A web of private interest: How the big five accountancy firms influence and profit from privatisation policy*. Retrieved September 1, 2009, from <http://www.unison.org.uk/pfi/discussion3.asp>
- Uttley, M. (2005). *Contractors on deployed military operations: United Kingdom policy and doctrine*. Retrieved October 15, 2009, from <http://www.york.ac.uk/depts/econ/documents/research/outsourcing.pdf>
- Vest, R. (2002). *Military housing privatization initiative: A guidance document for wading through the legal morass*. Retrieved October 15, 2009, from <http://www.afjag.af.mil/shared/media/document/AFD-081204-025.pdf>
- White House (2009). *Remarks by the president on procurement*. Retrieved October 15, 2009, from: http://www.whitehouse.gov/the_press_office/Remarks-by-the-President-on-Procurement-3/4/09/

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