

# Journal of Contract Management

*Linking scholarly research with best practices  
in the contract management field*

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# EDITOR'S WELCOME

NCMA is pleased to present the 2022 issue of the *Journal of Contract Management (JCM)*. Since 1966, the *JCM* (originally called the *National Contract Management Journal*) has been supporting the NCMA mission of advancing the contract management profession through advocacy and the execution of programs to connect NCMA members and enable their professional development. Specifically, the *JCM* does this by publishing research aimed at expanding the contract management body of knowledge, serving both the buying and selling communities of the private and public sector.

The *JCM* scope spans a wide range of topics in the contract management field, as reflected in the Contract Management Body of Knowledge® (CMBOK®). It strives to comprehensively cover the contract management body of knowledge by publishing conceptual, empirical, and practice-based application research that demonstrates substantial conceptual development, appropriate methodology, proven best practices, and value-added topics.

We hope the *JCM* will promote and foster discussion of both theory and practice across the CMBOK competencies. To this end, the *JCM* brings together key theory and practice applications, making the research available not only to the academic community but also to the private and public sector buying and selling communities. The *JCM* seeks research on both cutting-edge theories and practice applications in areas impacting the contract management profession. We invite both academics and practitioners to contribute to and read the *JCM*.

The *JCM* uses a double-blind, peer-review process. Neither the authors nor the reviewers are made aware of each other's identity during the manuscript review process. This approach removes potential biases in the review process, thereby retaining quality and objectivity. The authors submit manuscripts with findings based on their own perspective, and the blind peer reviewers provide comments related to the quality, impact, and technical accuracy of the research.

This year's issue contains four peer-reviewed articles covering a range of contract management topics. In the first article, "Information Technology Acquisitions: Consumption-Based Contracting," Robert Mortlock,

Kate Bukowski, and William Parkin examine the current Department of Defense (DoD) contracting supplies and services models and investigate methods to modernize to a consumption-based approach. Their research found that cloud-based solutions were often mischaracterized as a product or service under the DoD's existing taxonomy. The authors recommend the adoption of a new contract type, proposed as the Consumption-Based Variable Price (CBVP) type, offering the ability to acquire items that are neither strictly products nor services, in the same manner that such items are procured commercially.

In the second article, "Improving Procurement Ethics: A Revolving Door Regime Analysis," Corey Richards examines the U.S. Ethics Reform Act and Procurement Integrity Act (PIA), with a specific focus on the revolving door restrictions the Acts impose. Her research touches upon the corollary concerns related to the broader concepts of conflicts of interest and argues that, despite the strengths of the United States' ethics regime, one should not overlook four principal weaknesses. She concludes with recommendations that contribute new ideas to reform the revolving door provisions within the PIA and increase transparency.

The third article is authored by Anisa Spotswood and is entitled "Multilateral Competitive Negotiations for the Benefit of Technological Innovation." In this article, the author discusses how the *Federal Acquisition Regulation (FAR)* European Union Directives, United Nations Commission on International Trade Law Model Law, and the World Bank's Procurement Framework utilize the method of multilateral competitive negotiations to help stimulate technological innovation and the achievement of best value/value for money. The author presents the advantages and perceived disadvantages of using multilateral competitive negotiations and takes the position that the benefits outweigh the costs.

The final article authored by Brady Weaver, Clay Koschnick, Jonathan Ritschel, and Edward White is entitled "Financial Ratio Relationship to Defense Contract Cost Overruns." In this article the authors research if financial ratio analysis is a useful risk metric in DoD acquisition through statistical analysis. Their analysis finds that poor financial ratios at the time

of contract start are related to cost overruns on that contract. Their research findings indicate that acquisition professionals may improve risk assessments of a cost overrun by analyzing company financial ratios at both the source selection phase and throughout the cost estimation process.

As you can see from the above description of these articles, the *JCM* covers a wide range of topics in the CMBOK. This *JCM* issue would not have been possible without the support of our editorial board and the volunteer efforts of its members in conducting the manuscript reviews. I would like to thank the editorial board members for taking time out of their busy schedules to perform the reviews of these manuscripts. I sincerely appreciate the sharing of their time and expertise to ensure that the *Journal of Contract Management* continues as the top contract management journal for both scholars and practitioners across the globe.

**Dr. Rene G. Rendon, CPCM, CFCM, CPSM,  
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# INFORMATION TECHNOLOGY ACQUISITIONS: CONSUMPTION-BASED CONTRACTING

BY ROBERT F. MORTLOCK, PHD, COL, USA (RET.);  
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## Abstract

**PURPOSE:** Current procurement efforts suggest the Department of Defense (DoD) is applying outdated approaches to acquiring modern information technology (IT) capabilities. The development of new and innovative IT occurs every day in the commercial sector, while the DoD languishes with procurement methods that prohibit rapid acquisition. This failure to meet the pace of evolving IT developments with appropriate procurement strategies potentially threatens missions. A gap exists within DoD acquisitions of IT because of an inability to fully leverage cloud-based and consumption-based solutions. This research examined the current DoD contracting supplies and services models, seeking methods to modernize to a consumption-based approach.

**DESIGN/METHODOLOGY/APPROACH:** Qualitative analysis of data from current acquisitions allowed the evaluation of the impact of procuring capabilities as consumption-based solutions and identified costs and benefits.

**FINDINGS:** The study found that cloud-based solutions were often mischaracterized as a product or service under the DoD's existing taxonomy. It is recommended that the government institute commercial accounting practices to posture toward payment methods following consumption of cloud-based solution offerings to avoid Antideficiency Act violations. The government purchase card is suggested as a viable means of funding consumption-based acquisitions.

**ORIGINALITY/VALUE:** The authors recommend the adoption of a new contract type known as Consumption-Based Variable Price (CBVP). It will offer the ability to acquire items that are neither strictly products nor services, in the same manner that such items are procured commercially. The implementation of consumption-based acquisition procedures would allow the DoD to invoke commercial practices. These include paying based upon actual usage and allowing for more rapid acquisition of upgraded technologies.

## Keywords

information technology acquisitions, consumption-based contracting, cloud computing procurement

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4.0 Pre-Award

5.0 Award

6.0 Post-Award

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## Information Technology Acquisitions: Consumption-Based Contracting

In the 21st century, warfare conducted by the U.S. Armed Forces has shifted from fighting under an irregular doctrine in Iraq and Afghanistan to that of multi-domain operations (MDO; Nettis 2020). In 2019, former Air Force Chief of Staff General David L. Goldfein addressed the need for these systems to be connected to bring about effective results (Pop 2019). In terms of existing technologies that enable the seamless connection of systems, cloud-based computing solutions offer on-demand access to shared resources. This is accomplished through rapidly configured application or infrastructure models to satisfy continually evolving requirements (Dudash 2016).

One of the major advantages of cloud-based solutions is in the ease of scalability and flexibility with respect to delivery size, as opposed to legacy IT systems currently used by the U.S. Armed Forces (Bhardwaj et al., 2010). IT is rapidly evolving and requires a fluid

acquisition approach to harness its full capabilities and modernize the force in accordance with the National Defense Strategy.

Current procurement efforts suggest the DoD is applying outdated approaches to acquiring modern IT capabilities when compared to its private industry counterparts. This inhibits scalability and drives cost increases. In terms of DoD acquisition, cloud-based solutions do not fall cleanly into the existing product or service acquisition taxonomies because they inherently possess attributes of both categories.

A gap exists within DoD acquisitions of IT by the inability to fully leverage cloud-based and consumption-based solutions. It is imperative that the DoD revise its contract types to permit a new type. It should be one fashioned for commercial goods to be procured on a consumption basis, allowing for fair and accurate pricing based upon actual usage. Application of this concept to cloud computing permits a scaled approach, which can be applied to the DoD's annual billion dollar IT procurement.

This research examines the current DoD contract-

ing supplies and services models, seeking methods to modernize and incorporate a consumption-based approach. Data from current acquisitions allows the evaluation of the impact of procuring capabilities as consumption-based solutions and identifies costs and benefits of this approach. The research objectives include the following:

- Examine the structure of recent large contracts for cloud services (e.g., Defense Enterprise Solutions, Joint Enterprise Defense Infrastructure) and compare them to commercial best practice methods.
- Determine types of defense acquisitions that are currently miscategorized as either supply or service and discover the cost of this mismatch.
- Identify laws or regulations that would need to change to allow for the acquisition of consumption-based solutions.
- Recognize oversight and accountability processes that could be affected by consumption-based acquisition.
- Investigate the potential benefits of instituting a consumption-based approach to acquisition to enhance the DoD's ability to procure modern capabilities.

## BACKGROUND/LITERATURE REVIEW

New and innovative IT is developed every day in the commercial sector, while the DoD languishes with procurement methods that prohibit rapid acquisition. This failure to meet the pace of evolving IT developments with appropriate procurement strategies places the DoD behind its enemies and potentially threatens missions.

One aspect of IT that suffers from obsolete procurement methods is cloud computing. Acquisition methods must be expanded to allow for flexible, consumption-based methods to acquire these capabilities.

The National Institute of Standards and Technology defines cloud computing as “a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction,” (U.S. Congressional Research Service [CRS] 2020 under “Summary”).

When procuring cloud computing, acquisition professionals must choose between categories of sup-

plies or services established by current *Federal Acquisition Regulations (FAR)* and *Defense FAR Supplement (DFARS)*. The fiscal year (FY) 2020 National Defense Authorization Act proposed to explore the practicality of including consumption-based solutions in defense acquisition policy. Additionally, the Advisory Panel on Streamlining and Codifying Acquisition Regulations identified the need to “revise acquisition regulations to enable more flexible and effective procurement of consumption-based solutions,” (Section 809 Panel 2019).

The *FAR* defines a *service contract* as “a contract that directly engages the time and effort of a contractor whose primary purpose is to perform an identifiable task rather than to furnish an end item of supply,” (*FAR* 37.101, 2021). This definition infers that a service is performance-oriented and involves an intangible result. The *DFARS* defines *cloud computing services* as:

“a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. This includes other commercial terms, such as on-demand self-service, broad network access, resource pooling, rapid elasticity, and measured service. It also includes commercial offerings for software-as-a-service, infrastructure-as-a-service, and platform-as-a-service.” (*DFARS* 239.7601, 2021)

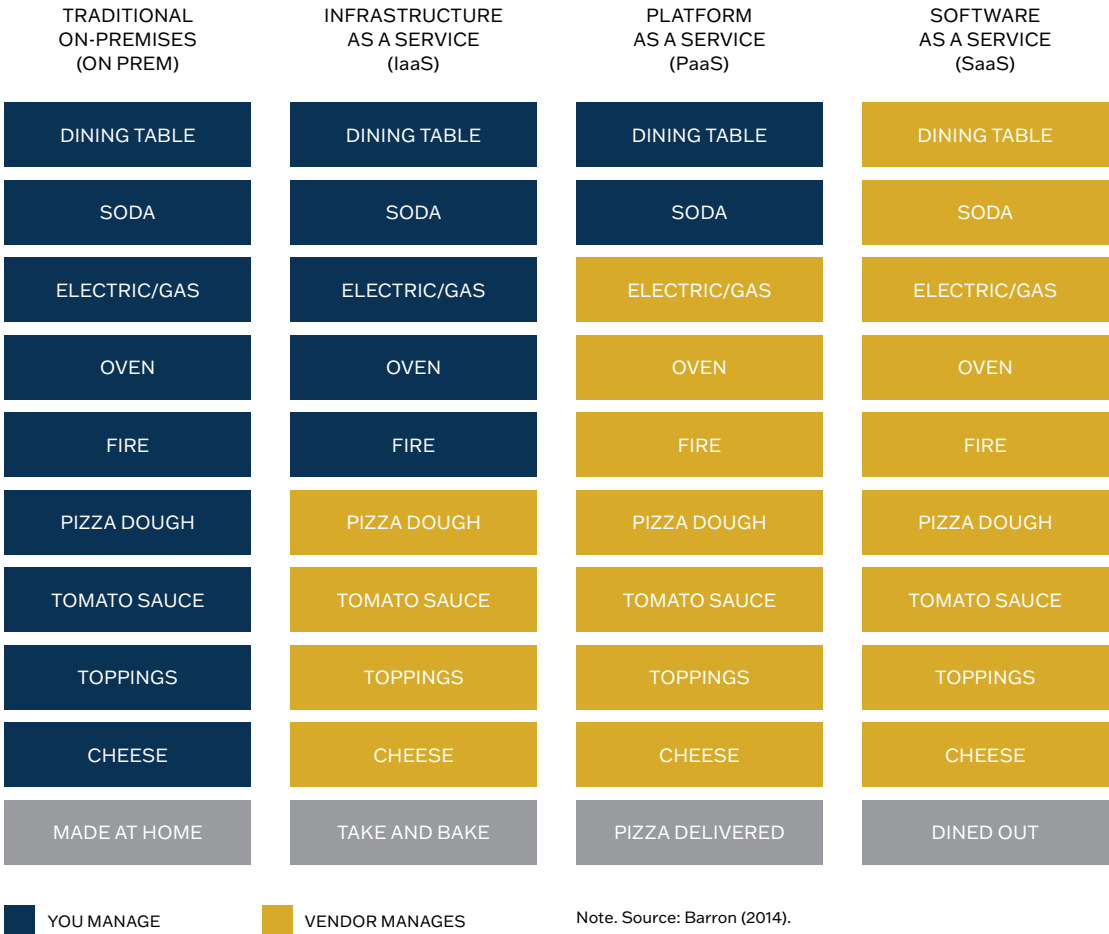
All three commercial offerings include the word *service* in their title, but vary in the amount of service being rendered, and the level of responsibility that remains with the end user. They are described by the U.S. CRS as follows:

- “Software as a Service (SaaS): In the SaaS model, customers use applications that the provider supplies and makes available remotely on demand, rather than using applications installed on a local workstation or server. SaaS is the most readily visible and simplest service model to the end user. Examples include web-based services such as Google Apps and online storage such as DropBox.” (U.S. CRS 2020)
- “Platform as a Service (PaaS): With PaaS, customers create applications on the provider's



## INFORMATION TECHNOLOGY ACQUISITIONS: CONSUMPTION-BASED CONTRACTING

**FIGURE 1. IaaS, SaaS, and PaaS IN TERMS OF PIZZA**



infrastructure using tools, such as programming languages, supplied by the provider. Facebook is one example of such an application. Such a platform could include hosting capability and development tools to facilitate building, testing, and launching a web application. The user controls the applications created via the platform, and the provider controls and maintains the underlying infrastructure, including networks, servers, and platform upgrades.” (U.S. CRS 2020)

- “Infrastructure as a Service (IaaS): IaaS providers supply fundamental computing resources that customers can use however they wish. Customers can install, use, and control whatever operating systems and applications they desire, as they might otherwise do on desktop computers or local servers. The

provider maintains the underlying cloud infrastructure. Examples of IaaS are Amazon Web Services and Microsoft Azure.” (U.S. CRS 2020)

To better understand the difference between IaaS, SaaS, and PaaS, Barron (2014) used the analogy of pizza to compare these services, as displayed in Figure 1. The traditional on-premises model relies on full development by the user, requiring creation and updates to the software as well as management and housing of the servers. All work is performed in-house, and nothing is contracted out.

The FAR definition of a service contract indicates that the commercial offerings of cloud computing are not accurately characterized.

If the requirement is for PaaS, the requirement owner is gaining access only to the hardware framework

hosted by the contractor. Services are being rendered for maintenance and housing of the implements, but no work product is being provided to the user's data. It is little more than an intellectual parking garage.

IaaS expands closer to the concept of a service and offers the "fundamental resources" (U.S. CRS 2020) to the end user, but still depends on the customer to control the operation of the information.

Only SaaS truly fits the definition of a service, as the end user expends no effort in its creation or management.

Pursuing a services contract for acquiring cloud-based solutions introduces risk in terms of complexity throughout the buying process due to the intangible nature and performance-based focus of a service requirement (Smeltzer & Ogden 2002). However, the SaaS model for cloud-based offerings includes in its definition the issuance of a user license by the providers for their customers to use a given software application (Bhardwaj et al., 2010). This may be offered via digital download, as well as physical media such as a compact disc, which could form the basis for classifying cloud-based solutions as a tangible end item.

Conversely, the *FAR* defines products as synonymous with supplies, which includes a broad definition "(but is not limited to) public works, buildings, and facilities; ships, floating equipment, and vessels of every character, type, and description, together with parts and accessories; aircraft and aircraft parts, accessories, and equipment; machine tools; and the alteration or installation of any of the foregoing," (*FAR* 2.101, 2021). The language used to describe these products possesses inherently tangible characteristics. Yet, cloud computing deals exclusively with web-based hosting where data is both stored and accessed utilizing the provider's remote servers at an off-site location (Bhardwaj et al., 2010).

One method for mitigating risk in federal acquisitions is the selection of the appropriate contract type. For IT acquisitions, it is helpful to think in general terms—build, buy, or rent. These three simple categories are a means of understanding the benefits attainable through selection of the proper contract model (Kohl 2012).

Procurement of commercially available IT as a product represents the buy model. Build and buy models are well researched (as reported in the Institute of Electrical and Electronics Engineers (IEEE) 0162, Recommended Practice for Software Acquisition), but constrain the end user to a particular model or

version of a software (Kohl 2012).

Updateability is key to long-term acquisition of IT, which supports consideration of a rental model. The government does not need to possess the server farms, programmers, or software, but needs access to the best of these commercially available solutions at the speed of a commercial acquisition.

Commercial software acquisition practices favor the use of build or buy strategies as documented in IEEE 0162–1998 (1998). According to Kohl (2012), the buy strategy refers to the acquisition of a commercial-off-the-shelf (COTS) item whereby the user gains permanent possession and control over the item. This approach fails to offer updateability without further acquisition (Kohl 2012). However, for SaaS, use of a rent method is a better representation of the acquisition, as the software is not directly possessed by the user (Kohl 2012).

For federal acquisition of cloud computing, the *FAR*'s language is inflexible. Legislation such as the Federal Information Technology Acquisition Reform Act (FITARA) and the Office of Management and Budget's (OMB) Cloud First policy place buyers at a disadvantage when selecting the most appropriate contract vehicle. This results in longer procurement lead times, ultimately devaluing and reducing the efficacy of the solution's impact on the end user's requirement (Section 809 Panel 2019).

In terms of impacting the warfighter, the DoD's inability to modernize the acquisition process for emerging IT solutions has left it at a disadvantage in achieving parity with its public sector counterparts (Section 809 Panel 2019). As early as 2016, organizations in the public sector embraced the SaaS model of cloud-based applications over legacy IT systems (Raghavan & Nargundkar 2020). The DoD responded with its Joint Enterprise Defense Infrastructure (JEDI) contract award in 2019 to Microsoft for cloud computing services (U.S. DoD 2020).

As innovative as JEDI's strategy was that each of the DoD components could leverage based on their individual needs, the process to acquire it was challenging. Instead of using a novel contract type such as a time-and-materials contract, which was suggested by the 809 Panel (Section 809 Panel, 2019), JEDI's request for proposal (RFP) reflected the standard services acquisition strategy of utilizing a firm-fixed price (FFP), indefinite-delivery, indefinite-quantity (IDIQ) contract (Washington Headquarters Services 2018).

JEDI's decision to follow a services acquisition

**Table 1. DoD Enterprise Cloud Contracts**

<b>DEOS</b>	<p>“DEOS (Defense Enterprise Office Solution) is an enterprise commercial cloud environment supporting the DoD strategy to acquire and implement enterprise applications and services for joint use across the Department, standardize cloud adoption, and enable cross-department collaboration. DEOS will provide commercial cloud services that unify many existing capabilities and is intended to aid the Department in replacing disparate legacy enterprise information technology services for office productivity, messaging, content management, and collaboration. DEOS will be deployed on NIPRNet, SIPRNet, and in denied, disconnected, intermittent, and limited bandwidth environments worldwide.” (U.S. Department of Defense, 2021)</p>	<ul style="list-style-type: none"> <li>• “Tiered user consumption (i.e., browser vs client based) and flexible pricing structures” (U.S. Department of Defense, 2021)</li> <li>• Blanket Purchase Agreement (BPA) with a FFP contract type</li> <li>• \$4.4B ceiling</li> <li>• 10-year period (General Services Administration, 2020)</li> </ul>
<b>JEDI</b>	<p>“The DoD’s General Purpose Enterprise Cloud, also known as the Joint Enterprise Defense Infrastructure (JEDI) Cloud, is the initiative that will deploy foundational cloud technology, while leveraging commercial parity, to the entire Department, with a focus on where our military operates--from the home front to the tactical edge. JEDI Cloud will provide fast, responsive, flexible, and adaptive cloud services to users at all classification levels. This initiative will create a foundation for efficient data sharing via its evolutionary cross domain solution, advanced data analytics capabilities, and a cutting-edge cybersecurity posture for the Department of Defense.” (U.S. Department of Defense, 2021)</p>	<ul style="list-style-type: none"> <li>• “Consumption-based services; estimate, plan, and track actual spending” (U.S. Department of Defense, 2021)</li> <li>• Indefinite-delivery, indefinite-quantity (IDIQ) with FFP contract type (U.S. Department of Defense, 2020)</li> <li>• \$10B ceiling</li> </ul>
<b>milCloud 2.0</b>	<p>“DISA’s milCloud 2.0 portfolio includes an integrated suite of cloud-based infrastructure services. Connecting commercial cloud service offerings to DoD networks in a private deployment model, the solution provides mission partners the latest cloud technologies at competitive prices, with uncompromising performance. Approved to support Impact Level 5 data (IL6 authorization is in progress), milCloud 2.0 includes a central cloud portal which provides real-time visibility, payment, and workload provisioning.” (U.S. Department of Defense, 2021)</p>	<ul style="list-style-type: none"> <li>• Pay-As-You-Go cost model</li> <li>• Indefinite-delivery, indefinite-quantity (IDIQ) with a FFP contract type</li> <li>• \$500M ceiling</li> <li>• 8-year contract</li> <li>• Awarded June 2017</li> </ul>

strategy approach positioned the government at a disadvantage. Commercial cloud providers bill on a consumption-based model while FFP contracts require a set price. Therefore, FFP contracts cannot capitalize on potential cost savings based on usage and fluctuating market conditions. In addition, FFP contracts require obligated funds to prevent Antideficiency Act (ADA) violations. Obligated funds are not appropriate for a consumption-based billing model and may result in paying for services not received or overpaying (Section 809 Panel 2019).

The JEDI contract used an IDIQ contract type with FFP task orders (TO). Use of fixed-price contracts for commercial items is mandated by FAR 16.201(a) and FAR 12.207(a), except when provisions of 12.207(b) apply. Selection of an FFP performance-based contract

or TO is further supported by FAR 37.102(a)(2)(i) when acquiring services. In addition, the DoD *Guidebook for the Acquisition of Services* notes that the contracting officer’s rationale must be documented if any contract type other than FFP is selected (DoD 2012).

The government prefers to use FFP contracts for service requirements because cost risk is mitigated through locked-in pricing. However, IT, especially cloud computing, does not fit into the classification of just a service or just a product. In the JEDI contract, the FFP contract type offered no incentive to the contractor to pass on cost savings to the government (Schneider 2018). Locked-in prices can be detrimental in IT procurements as they can prohibit the government from realizing cost savings as the price of the acquired IT ages and invariably declines.

The DoD's Enterprise Cloud webpage, cloud.mil, states that the Enterprise Cloud is a "multi-cloud and multi-vendor ecosystem composed of a general-purpose and multiple fit-for-purpose clouds that are available globally and at the tactical edge," (DoD 2021). The DoD Enterprise Clouds include Defense Enterprise Office Solution (DEOS), JEDI Cloud, and milCloud 2.0, which are summarized in Table 1. The most recent acquisitions for cloud services were JEDI and DEOS, which were FFP contracts under a single provider.

This strategy reflects the DoD's historically established position in the post-World War II era as a limited consumer of technology with a major focus on industrialized operations. It did not position itself as a driver of technological requirements as the battlefield transitioned into the modern age of multi-domain operations centered around real-time information processing (Schneider 2018).

The DoD's structuring of the JEDI and DEOS acquisitions do not align with commercial best practices in the private sector. With commercial cloud-based service providers currently offering SaaS, PaaS, and IaaS hosting services based on infrastructure and scalability needs (Bhardwaj 2010), private organizations have utilized a multiple-cloud provider model for various applications used under an enterprise-wide solution, thereby leveraging the latest offerings in a mature and swiftly evolving cloud computing marketplace (Schneider 2018).

The private sector has also moved to a subscription-based service model over the traditional software ownership model. It outsources IT-centric cloud expertise and allows for greater focus on business operations (Raghavan & Nargundkar 2020).

This move caused a shift in organizational buying behavior as it relates to the cloud-based service acquisition process. Instead of a top-down approach to selecting applications initiated by an organization's chief information officer, SaaS assessment and selection is driven by the end user. This shifts the power dynamic due to users possessing more expertise and involvement with a particular SaaS application (Raghavan & Nargundkar 2020). Both solicitations for JEDI and DEOS enterprise solutions illustrate that the DoD is using a top-down acquisition strategy that limits its organizations from capturing the latest cloud-based innovations that a multi-provider agreement could provide.

In the case of both JEDI and DEOS, controversies surrounding the contract award delayed the procure-

ments. As a result, various DoD entities are either acquiring individualized commercial solutions or utilizing DoD-approved cloud contracts (i.e., milCloud 2.0 and Cloud One) in the interim. This is creating a disjointed network of capabilities to meet evolving requirements. The strategy to adopt decentralized cloud solutions creates limitations in both the compatibility of legacy systems and infrastructure security for classified information (Doubleday 2020).

Significant regulation reform is necessary to permit a flexible contract type that would allow for consumption-based acquisitions. FFP contracts, such as those for JEDI and DEOS, limit the government's savings. These contracts also require that the contractor shoulder most of the cost risk resulting in high proposal and award prices.

A fixed price with economic price adjustment (FP-EPA) contract type is recommended by the General Services Administration's Best Business Practices for USG Cloud Adoption (2016). However, it is a poor option for the consumption-based modeling needed for cloud computing, as it only offers a means to adjust established prices (Section 809 Panel 2019).

The Section 809 Panel suggested the creation of a new contract type, like a time-and-material (T&M) contract, as the structure would offer a decrease in material costs when the technology prices inevitably decrease over time (Duncan 2019). This proposed contract would be called a "Fixed-Price Resource Units" (Garland 2019). The new contract type would set a base price for the consumable unit of service (e.g., one hour), impose a contract ceiling price, and permit the necessary scalability for consumption to be billed in arrears (Garland 2019). Certain laws such as the Clinger-Cohen Act (CCA) were applicable when written (Rose & Wagner 2019), but Recommendation 44 lists redundant CCA compliance guidance that impedes rapid acquisition (Duncan 2019).

## RESEARCH ANALYSIS

### Research Methodology

This research included a qualitative examination of federal statutes, regulations, and contract data sources for IT acquisitions. Additionally, a qualitative case study-based approach analyzed the current DoD procurement of cloud-based solutions.

Analytical techniques included the following: cost effectiveness analysis, contemporary contract analysis,

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**Table 2. PSC Mismatch**

PSC Code	PSC Description	CAR Description of Acquisition
7025	Information Technology Input/Output and Storage Devices	Cloud Computing
7030	Information Technology Software	Cloud Computing
7045	Information Technology Supplies	Cloud Computing
AC61	R&D-Electronics & Comm EQ-B RES	Cloud Computing
DB10	IT and Telecom – Compute as a Service: Mainframe/Servers	Cloud Computing
D305	IT and Telecom – Teleprocessing, Timeshare, Cloud Computing, and High-Performance Computing	Cloud Computing Services
D307	IT and Telecom – IT Strategy and Architecture	Cloud Computing Services
D318	IT and Telecom – Integrated Hardware/Software/Services Solutions, Predominately Services	Cloud Computing Services
D399	IT and Telecom – Other IT and Telecommunications	Federal Supply Schedule Contract & Cloud Computing
L070	Tech Rep SVCS/ADP EQ & Supplies	Cloud Computing

Note. Source: Federal Procurement Data System-Next Generation (2021).

and policy analysis. These tools are used to assess the current state of DoD procurement efforts regarding modern capabilities and the impact of pivoting to a consumption-based solutions approach. The analysis results in recommended changes needed to enable more flexible contract types for these acquisitions, the oversight processes affected by financing payments post factum, and a summary of the benefits gained from a consumption-based acquisition model.

**Miscategorized Acquisitions**  
*Analysis of Current DoD Cloud Computing Taxonomy*

The DoD’s Taxonomy for the Acquisition of Services and Supplies & Equipment includes cloud computing under the Product Service Code (PSC) D305 in its IT Services Portfolio Category (Office of the Under Secretary of Defense 2012). Further, the *DFARS* includes procedures and clauses specifically for cloud computing at Subpart 239.75, under the purview of

acquiring IT products or services. A search for North American Industry Classification System (NAICS) codes for cloud computing produced only service-related results such as 518210—Data Processing, Hosting, and Related Services (NAICS, 2018). This illustrates that the DoD has firmly rooted cloud computing in the services acquisition category, which causes complexities in the procurement process.

The confusion caused by the lack of PSC specification for cloud computing is evident in a search of Federal Procurement Data System–Next Generation (FPDS-NG). On April 3, 2021, a search of FPDS-NG for the term *cloud computing* returned 7,605 results. Of the first 30 results, sorted by relevance, the PSCs selected varied wildly and included a mix of products and services. The results of the first page included the entries shown in Table 2.

Removing cloud-based solutions from the services taxonomy would prove beneficial. From a service standpoint, the elimination of cloud computing from the IT Services Portfolio (Office of the Under Secretary

of Defense 2012) will reduce the administrative burden associated with keeping PSC D305 current as it relates to cloud-based service offerings through the marketplace and spend analyses. The resultant cost savings may then be transferred to support other portfolios.

From a product standpoint, although it is not listed in any Product Portfolio Group, removing cloud-based solutions such as SaaS offerings from consideration as a potential addition ensures consistency in DoD decision-making. It structures the portfolio groups to maximize buying power, while giving cloud-based solutions the flexibility needed to scale at a more rapid pace without being constrained by the stipulations of a supply contract (e.g., FAR Part 8—Required Sources of Supplies and Services).

The Section 809 Panel recommended that the principal director of defense pricing and contracting within the Office of the Secretary of Defense designate a special task force to update the Taxonomy for the Acquisition of Services and Supplies & Equipment policy with the addition of a new portfolio category, Dynamic Resources (Office of the Under Secretary of Defense 2012).

Subsequently, the Defense Acquisition Regulation Council should remove language in DFARS Subpart 239.76 and DFARS PGI 239.76 that designates cloud computing as a service to enable more flexible terms and conditions than what are provided under FAR Part 37 procedures.

### **Cost Effectiveness Analysis**

The Producer Price Index (PPI) was used to measure price escalation for producer output based on demand for services for the selected industry, Software Publishers-Primary services. The Software Publishers-Primary services category was selected after a search on the U.S. Bureau of Labor and Statistics website revealed NAICS code 51, a service-providing information sector that includes industries such as software publishing, telecommunications, and data processing. This aligns with the DoD's Taxonomy for the Acquisition of Services and Supplies & Equipment, which uses NAICS code 518210 - Data Processing, Hosting, and Related Services for its cloud computing requirements. The OPM Salary Calculator rates were generated using the locality and step increases for standardization purposes to illustrate costs.

Current DoD Enterprise Cloud offerings were examined to determine the effectiveness of the calculators. Forward funding was examined by analyzing

the amount obligated on each call or task order versus the amount deobligated by the end of the period of performance (PoP). For this research, milCloud 2.0 was selected for review, due to its successful performance since award in 2017, and its pay-as-you-go payment model.

The BLS's Data Viewer tool for PPI industry data reveals a 2.6 percent increase from January 2017 through January 2021 for Software Publishers – Primary services. This data establishes a consistent pattern of price escalation within the last five years for services directly related to cloud-computing vendors. To quantify the potential risk to mission partners currently employing service contracts for cloud-based requirements, milCloud 2.0's contract (HC102817D0004) was used to illustrate the impact of a 2.6 percent price increase. By taking the ceiling price of the subject contract's initial ordering period at \$500,000,000 and multiplying it by a 2.6 percent escalation rate, the resultant amount reflects a \$13,000,000 projected increase in producer costs over the next five years. This data indicates that pricing rates will continue to rise due to inflation over the life of this contract and will require significant administrative oversight to avoid Antideficiency Act violations.

The administrative burden attached to a services contract varies depending upon its complexity and PoP. As an example, the milCloud 2.0 contract required a Contract Specialist, Contracting Officer, Flight Chief, and Chief of the Contracting Office, at a minimum, to successfully execute contract actions. Using the OPM's General Schedule Salary Calculator, the salaries for each acquisition-coded position (1102) were calculated from FY17 and FY21 to ascertain the amount the government would pay in administrative fees. As shown in Table 3, the resultant pay rates added a total of \$23,532 or a 1.07 percent increase in projected costs to administer the milCloud 2.0 contract over the next five years, which contradicts OMB Circular A-76's established policy to achieve cost savings of commercial support services (Inspector General, DoD 1994).

The initial DoD IG audit report regarding cost-effectiveness for services, 95–063, found that cost comparisons had not been performed, despite being required per DoD Directive 4205.2. As a result, the IG was unable to confirm that the government's service requirements were being fulfilled by the most cost-effective means (Inspector General, DoD 1994). More concerning is the recent GAO report regarding

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**Table 3. Federal Acquisition-Coded Personnel Pay Rates FY 17–FY 21 Comparison**

Position	Rank	FY 17 Rates	FY 21 Rates	% Increase
Contract Specialist	GS-11	\$60,210.00	\$64,649.00	1.07%
Contracting Officer	GS-12	\$72,168.00	\$77,488.00	1.07%
Flight Chief	GS-13	\$85,816.00	\$92,143.00	1.07%
Chief of the Contracting Office	GS-14	\$101,409.00	\$108,855.00	1.07%
	Total	\$319,603.00	\$343,135.00	1.07%

Note. Source: Adapted from U.S. Office of Personnel Management (2021).; Note. OPM’s General Schedule Salary Calculator rates were calculated using the minimum locality and step increases for standardization purposes and to illustrate minimum feasible costs only.

service acquisitions, 21–267R, which found that the DoD is still struggling with tracking and forecasting future budget amounts for its service requirements (GAO 2021).

DoD IG’s report on the JEDI Cloud Procurement detailed a memorandum from the contractor officer (CO) that stated “in a multiple award scenario, competition and source selection for each task order would require significant work from multiple acquisition and programming personnel. For instance, a single task order could take up to a year to complete, creating delays to access cloud services for warfighters,” (Inspector General, Department of Defense 2020 p. 44).

The estimated cost of administering and executing a TO was calculated to be \$127,851.84 for a multiple award versus \$2,595.71 for a single award IDIQ format. The CO concluded that over the 10-year contract, with an estimated 4,032 task orders annually, the DoD could save at least \$500 million in contract administrative costs utilizing a single-award contract (Inspector General, Department of Defense 2020 p. 44). Even though the JEDI procurement team minimized the risk associated with excessive costs, the single award IDIQ will end up costing the DoD approximately \$10,465,902.72 in administrative costs per year, and \$104,659,027.20 in total administrative costs over the life of the contract, utilizing this same data.

The DoD recently announced its re-award of the DEOS Blanket Purchase Agreements (BPA), with a lower ceiling of \$4.4 billion dollars and inclusion on the GSA IT Schedule 70 contract vehicle, (GSA 2020) under the GSA eLibrary SIN 518210C, Cloud and Cloud-Related IT Professional Services (GSA 2021). The award of the agreement was made to CSRA LLC, as well as its “contractor teaming partners Dell Marketing L.P. and Minburn Technology Group,” (GSA 2020). A search of Electronic Data Access (EDA) revealed that CSRA LLC (BPA number GS35F393CA) has eight calls to date. Dell Marketing L.P. (BPA number GS35F059DA) has 410 calls, of which only eight had an obligation value greater than the simplified acquisition threshold. Minburn Technology Group (BPA number GS35F309AA) has 31 calls. The orders occasionally used incremental funding though none included a modification for deobligation.

A search of Electronic Document Access (EDA) revealed that since June 2017, when milCloud 2.0 was awarded, 22 modifications have been made to the IDIQ, contract number HC102817D0004. Eight TOs were cut from the IDIQ with a total of 32 modifications. The primary purpose of the modifications was to obligate and deobligate funds. Of the 32 modifications made, 16 were actions for the obligation of additional funds or deobligation of unused funds.

Table 4 depicts the TOs, the amount obligated, the amount deobligated by modification, the total amount of funds remaining after deobligation, and the percentage the TOs total funding decreased through deobligation. It is important to note that in Table 4, deobligation for all TOs occurred outside of the fiscal year in which the obligation took place. Depending on the appropriation category and year, funds are potentially susceptible to expiration. Further analysis is necessary to identify and accurately quantify potential monetary losses caused by appropriation classifications and the obligations/deobligations occurring across fiscal years.

To visually present the amount of funds removed from each TO, Figure 2 depicts a bar graph of each TO, sequentially, comparing the amount of funds remaining after deobligation. The funds used are depicted in blue, and the amounts deobligated are represented by gray. The total height of the bar indicates the total amount of funds obligated to the TO during its entire PoP.

It is evident that the procuring office improved their calculation of the amount of service necessary, decreasing the percentage deobligated from each TO over time. However, this highlights the inaccuracy of the usage calculators and represents a significant amount of funds that are obligated and ultimately unused for the purpose for which they were certified. Each TO was over-funded by at least a third.

When viewed cumulatively, as represented in Figure 3, it becomes apparent that the current structure of forward funding contracts is not efficient. The government is essentially parking funds on a contract or order until those funds are deobligated and made available for other use. Figure 3 highlights the fact that for all milCloud TOs, more than 54.16 percent of the funds obligated ultimately were removed from the TOs. If forward financing is mandated for federal contracts, any procurement with a variable need will continue to require deobligation of unused funds. Consequently, the administrative burden will increase and the government's access to the funds will be restricted.

This analysis suggests that cloud-based solutions are not cost effective as a service-based acquisition and need to be classified as a new acquisition category with greater flexibility. At the very least, those cloud-based agreements should be structured as a BPA to minimize the administrative burdens outlined above.

### **Recommended Changes to Implement Contract Type—Time-and-Materials**

The Section 809 Panel recommended that a new contract type be established for IT acquisitions using time-and-materials contracts as its basis. The panel further concluded that the “optimal contract type for consumption-based solutions will function more like a time-and-material than a firm-fixed-price contract and will automatically capture price reductions in contractors’ commercial pricing,” (Section 809 Panel 2019). JEDI addressed this issue by including a “clause in the JEDI RFP and GSA’s order-level materials rule that permits up to 33.33 percent of the value of an order to be used for supplies or services not known at the time of award,” (Section 809 Panel, 2019, p. 12).

Another option would be the inclusion of price lists or schedules, such as those used for IDIQ contracts and BPAs, which offer significant flexibility. Inclusion of newly developed technology, whether materials or services, could be accomplished rapidly through modification of an existing contract. It also ensures that the government obtains commercially available price rates or discounts through leveraging purchasing power, like federal supply schedules.

Time-and-materials and labor-hour contracts are not classified as FP contracts per FAR 16.201(b) and FAR 16.600. Application of a time-and-materials contract suits the requirement for cloud computing. The FAR states that “a time-and-materials contract may be used only when it is not possible at the time of placing the contract to estimate accurately the extent or duration of the work or to anticipate costs with any reasonable degree of confidence,” (FAR 16.601(c), 2021). Due to the evolving, variable nature of direct costs associated with the materials necessary for cloud computing and the inability to estimate the number of labor hours necessary to meet the government’s needs for rapid scalability, a time-and-materials contract appears to be a viable solution.

Unfortunately, the existing regulations around time-and-materials contracts are written with a strict definition of services—labor being performed. For example, FAR 16.601(c)(1) requires government surveillance of contractor performance, as there is no incentive provided to the contractor to control costs or labor performed. Surveillance would be unnecessary for cloud computing if proper performance-based metrics were established and incentives provided.

Use of time-and-materials contracts in acquisition of commercial items further constrains these contracts



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**Table 4. milCloud 2.0 Task Order Obligations and Deobligations**

Task Order	Modification	Obligation / Deobligation Amount	Date
HC102817F0647	Order P00002	+\$600,000.00 -\$200,000.00 Total: \$400,000.00; Decrease by Deobligation: 33.33%	09 JUN 17 21 FEB 19
HC102818F0589	Order P00002	+\$2,102,700.00 -\$2,052,320.52 Total: \$50,379.48; Decrease by Deobligation: 97.60%	10 APR 18 04 FEB 19
HC102818F0857	Order P00003	+\$600,000.00 -\$600,000.00 Total: \$0.00; Decrease by Deobligation: 100%	07 JUN 18 04 FEB 19
HC108419F0001	Order P00001	+\$600,000.00 -\$600,000.00 Total: \$0.00; Decrease by Deobligation: 100%	18 OCT 18 17 SEP 20
HC108419F0004	Order P00002 P00003 P00005	+\$4,770,500.00 -\$400,000.00 -\$2,889,642.99 -\$28,824.47 Total: \$1,452,032.54; Decrease by Deobligation: 69.56%	18 OCT 18 03 SEP 19 16 OCT 19 21 DEC 20
HC108419F0136	Order P00001 P00002 P00005 P00007	+\$4,495,069.37 +\$2,200,000.00 +\$5,000,000.00 -\$4,004,500.00 -\$593,768.39 Total: \$7,096,800.98; Decrease by Deobligation: 39.32%	28 MAR 19 29 MAR 19 31 JUL 19 13 FEB 20 22 DEC 20
HC108420F0003	Order P00002 P00003 P00005	+\$11,599,345.00 +\$4,150,000.00 +\$12,764,000.00 -\$8,822,335.95 Total: \$19,691,009.05; Decrease by Deobligation: 30.94%	04 OCT 19 14 JAN 20 23 MAR 20 22 DEC 20
HC108420F0294	Order P00001 P00003	+\$19,405,000.00 +\$495,000.00 +\$10,597,973.16 Total, Year-to-Date: \$30,497,973.16	01 OCT 20 01 OCT 20 30 DEC 20

to services, requiring either competitive procedures or offers from two or more responsible offerors when using other than full and open competition, according to FAR 12.207(b)(1)(i). The CO must execute a determination and findings stating that no other contract type is suitable, per FAR 12.207(b)(1)(ii)(A). For these reasons, the existing time-and-materials contracts are insufficient for consumption-based acquisitions.

Due to the current structure and limitations of time-and-materials contracts, a new type of contract is necessary to procure consumption-based solutions. To

highlight the capabilities and potential applications of this contract, the proposed name is the consumption-based variable price (CBVP) contract type.

This consumption-centric contract type, like the time-and-materials contract, would be added as a section under FAR 16.6 Time-and-Materials, Labor-Hour, and Letter Contracts, in the same manner that indefinite-quantity contracts fall at FAR 16.504, under FAR 16.5, indefinite-delivery contracts. Supplementation of the language in FAR 16.6, especially expansion of the definitions of hourly rate and materials,

would permit consumption-based procurements of commercial items and not limit the applicability of time-and-materials contracts to cloud computing.

Implementation would require the *FAR* Council to modify the content under FAR Part 16 to include the new contract type CBVP. It incorporates characteristics of both time-and-materials as well as labor-hour contract terms and conditions that are more favorable to the government than FFP arrangements.

### **Contract Type—Modular Contracting**

The *FAR* states that “when acquiring information technology and related services, consider the use of modular contracting to reduce program risk,” (FAR 16.505(a)(5), 2021).

The *FAR* defines *modular contracting* as the “use of one or more contracts to acquire information technology systems in successive, interoperable increments,” (FAR 39.002, 2021). Modular contracting offers a means to reduce the risk inherent in rapidly evolving IT procurements while incentivizing contractor performance, per FAR 39.103(a). More importantly, this guidance establishes the basis for agencies to procure IT services in the increment necessary to their requirement. FAR 39.103(b) stipulates that modular contracting be used to divide an IT system into smaller increments. Furthermore, the *FAR* emphasizes a need to procure IT rapidly and states that “to avoid obsolescence, a modular contract for information technology should, to the maximum extent practicable, be awarded within 180 days after the date on which the solicitation is issued,” (FAR 39.103(e), 2021).

The *FAR* is silent regarding the policies used for modular contracting (FAR 39.104, 2021). This section of the *FAR* could include the new contract type policy and provide further guidance for modular contracting methods to be used in the acquisition of IT services. Inclusion of recommendations for selection of the proper contract type could significantly reduce Procurement Administrative Lead Time (PALT). It would also reduce the unnecessary administrative burden caused by unwieldy contract types that are ill-suited to the evolving space of IT acquisitions and cloud computing.

### **Contract Type—Utilities**

Utility acquisitions are not exempt from the ADA. They require an entire payment to be charged to the funding appropriations that fall at the end of a given service’s billing cycle, despite fluctuating quantity

usage. If a requirement covers several fiscal years, the charge will be prorated to prevent metered costs from exceeding a one-year period (GAO 2006).

Despite this appropriations-related limitation, utility contracts include the contract clause 52.241-8, Change in Rates or Terms and Conditions of Service for Unregulated Services. The clause allows either party to request a change in the rates of an unregulated service at any time after an established period (FAR 52.241, 2021). This protects the government from volatile market conditions, but also allows it to take advantage of cost savings during periods of relative stability. Unfortunately, this clause does not extend to the rest of the service-based contracts.

## **Affected Oversight/Accountability Processes**

### **Contract Financing**

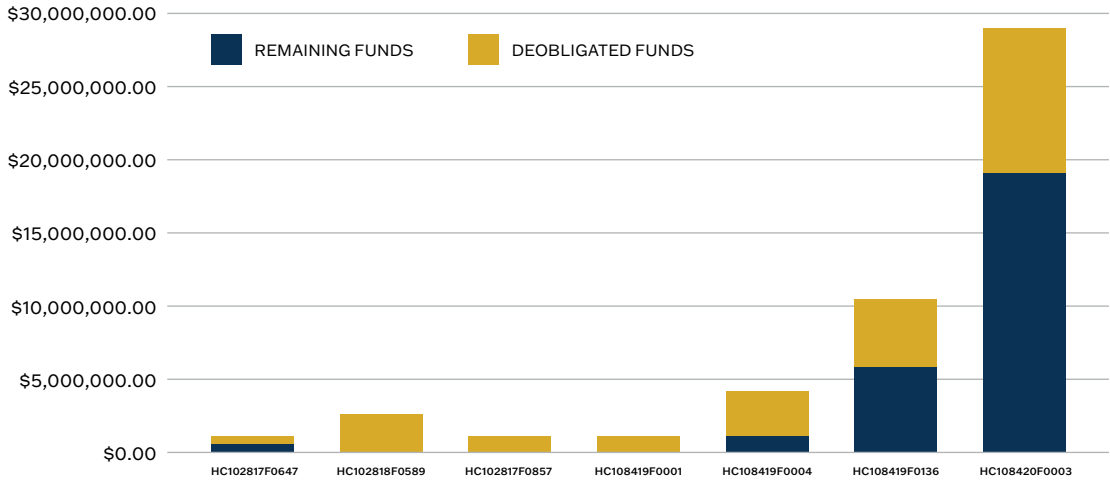
Cloud computing does not function like a standard service contract. Demand for cloud computing is variable, depending on the consumption of the user throughout the month or year.

To execute a contract, certified funds must be attached at the award of the contract or TO. For traditional service contracts with a consistent, quantifiable need, this makes sense. The contractor knows the number of personnel needed to perform the service, the number of hours the employee will perform that service monthly, and the rate of pay required by their applicable area wage determination. Contractors then can propose a monthly rate, leading to a highly attractive FFP contract for the government. The consistency also protects the expending unit from loss of access to funds due to deobligation, if performed outside of the fiscal year for which it was appropriated.

Other service contracts, especially those with a high amount of variability, use FFP contracts with not-to-exceed CLINS. On these contracts, the funds are allocated, and the contractor bills upon actual usage. This method works for service contracts with a variable demand but can cause problems in administration. Usage must be closely monitored to ensure services are not rendered more than the funds available. Sudden or high demand will result in the need to quickly secure additional funds and execute a modification.

This becomes troublesome when considering the application to IT acquisition, especially for cloud computing solutions, where these services are rendered via automation. The *FAR* recognized the potential is-

**FIGURE 2. Bar Graph of Remaining Funds and Deobligated Funds, Compared to the Total Amount Obligated on the Task Order**



Note. Source: Adapted from General Dynamics Information Technology (2021).

sue caused by the automated service being performed, stating:

“Many supplies or services are acquired subject to supplier license agreements. These are particularly common in information technology acquisitions, but they may apply to any supply or service. For example, computer software and services delivered through the internet (web services) are often subject to license agreements, referred to as End User License Agreements (EULA), Terms of Service (TOS), or other similar legal instruments or agreements. Many of these agreements contain indemnification clauses that are inconsistent with federal law and unenforceable, but which could create a violation of the Antideficiency Act (31 U.S.C. 1341) if agreed to by the Government,” (FAR 32.705, 2021).

Several cloud service providers claim to offer consumption-based or pay-as-you-go cost models, including JEDI, milCloud 2.0, and the Air Force’s Cloud One (U.S. DoD 2021). The benefit touted for such models is the potential cost optimization, ensuring that users pay only for what they consume. In concept, this seems to offer users the ability to pay for actual use. However, the models are called consumption-based, but don’t operate that way.

When the government procures cloud computing services, the contract is funded in full, upfront, upon

award (Garland 2019). By comparison, a commercial customer would not accept the same when purchasing cellular phone plans without unlimited minutes. The user cannot accurately forecast the number of calls, text messages, or megabytes of internet data they will use throughout the month, much less a year.

It is far more reasonable for the provider to invoice at the end of a billing cycle for data they consumed at a rate they agreed to pay. Commercial utility billing is modeled the same way. The bills fluctuate with the user’s demand but are based on actual usage rather than a forecasted model. Payment in arrears is not a radical concept.

The problem with forward payment of cloud services is that the government is essentially locking itself into a certain type of hardware and a limited amount of data, for which it can potentially be overpaying. Garland noted that forward payments “[have] little ability to take advantage of service changes or innovations that occur mid-contract, despite dynamic innovation being one of the most important value propositions of cloud,” (Garland 2019 p. 2).

The webpage for milCloud 2.0 touts that DoD agencies can “purchase cloud services in as few as 48 hours,” (General Dynamics Information Technology 2021). However, when examined, the actual means of placing an order with an Enterprise Cloud is complex and does not represent a true consumption or pay-as-you-go model. To place an order through milCloud 2.0, authorized administrators browse for the services

and submit a request (General Dynamics Information Technology 2021). A calculator is used to estimate their projected total need for the PoP, broken down by the processing speed and memory necessary to meet their need (U.S. DoD 2021). The projected cost works as a government estimate for which the user must then secure funding. This creates a stair-stepped funding approach, shown in Figure 4, and requires constant monitoring to ensure that an overrun does not occur, thereby creating an ADA violation.

Although all funds may be expended over time, the government experiences unmeasured monetary losses by using this model. The most obvious loss in efficiency is additional contract administration and the writing of TOs. These contracts cannot take advantage of the scalability that the pay-as-you-go model purports to offer or realize the reductions in technology prices as upgrades constantly emerge.

### **Government Purchase Card**

One of the best tools the government uses for rapid procurement is the government-wide commercial purchase card (GPC). In fact, for micropurchases, the GPC is the preferred method of payment, per FAR 13.201(b).

The *GPC Expanded Use Guidebook*, dated March 2019, has greatly expanded the threshold for acquisitions with a GPC. It is recommended that language be added to the guidebook and FAR 13.201 to permit GPC as a means of payment on IT and consumption-based pre-priced contracts. Additionally, a specified higher threshold is imperative for recognizing the powerful flexibility offered as a rapid means of funding orders under these pre-priced contracts.

This is further supported by the *FAR*, which relates that “the government-wide commercial purchase card may be used to place a task or delivery order if authorized in the basic contract, basic ordering agreement, or blanket purchase agreement,” (FAR 13.301(c)(2), 2021). It presents a compelling argument for the GPC as a means of funding and executing orders due to its rapid and flexible procurement method.

Additionally, reclassification of consumption-based IT procurements into a new category would remove the threshold constraints imposed by the Service Contract Labor Standards found at FAR Subpart 22.10. Use of GPC as a funding means for consumption-based payment offers an innovative application that could be leveraged to meet federal requirements in a cloud environment, as well as numerous other

consumption-based applications, under the GPC expanded use program.

### **Antideficiency Act**

A significant impediment to the federal government realizing the benefit of consumption-based payments is the ADA. Funds must be available to ensure that the government is not committed to an unlimited liability and that it is not receiving a service for which it has not yet paid. Feldman noted that violations can occur in a wide variety of factual circumstances, such as:

1. Recording an obligation in excess of available appropriations;
2. Making payments against an exhausted or insufficient appropriation;
3. Making a firm commitment for a multiyear contract absent compliance with the multiyear contracting procedures;
4. Committing the government to a contingent or unlimited liability. (Feldman 2020 p. 19)

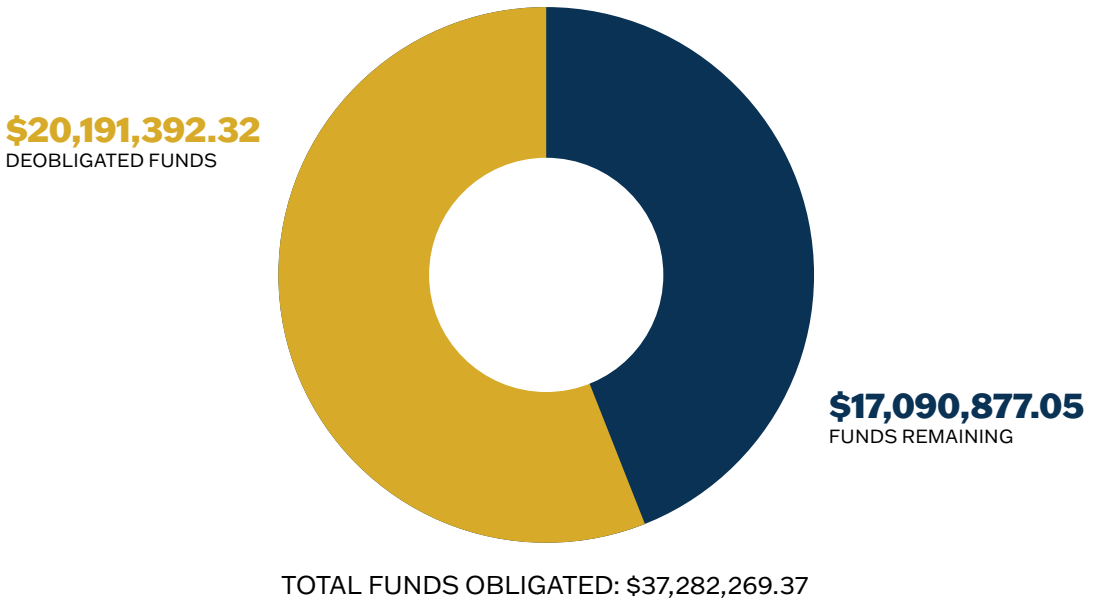
For the DoD to truly gain the benefit of consumption-based payments, reform is necessary to the ADA. Under current contract financing law, all contracts must have certified funds available, requiring that “before executing any contract, the contracting officer shall (a) Obtain written assurance from responsible fiscal authority that adequate funds are available or (b) Expressly condition the contract upon availability of funds in accordance with 32.703-2,” (FAR 32.702, 2021). This method is utilized to ensure that the government does not obligate itself for an acquisition when funding is not available. However, the constraints imposed have created administrative burden and caused the government to operate in a manner different from public entities.

In the digital age, the government should consider new means of ensuring that funds are available. The 809 Panel recommended implementation of the congressional carry-over measure for certain Defense Health Agency IDIQ services (Duncan 2019). If implemented “for IT contracts, the risk to agencies of overestimating IT services would go down, making budgeting easier for these unique and important service” (Duncan 2019 p. 2).

In examining the ADA, the policy’s intent is to safeguard the government from overspending by verifying that funds are available. It is recommended that the

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**FIGURE 3. Pie Chart of Cumulative Amount of Funds Remaining after Deobligation, Compared to the Total Amount Obligated Over the Life of the Task Order**



Note. Source: Adapted from General Dynamics Information Technology (2021).

DoD implement commercial accounting practices, which would ensure a faster and more accurate process of authenticating funding availability. Application of these commercial practices is necessary to permit payments on a consumption basis.

**Benefits of Consumption-Based Acquisition**

*Reduced Procurement Acquisition Lead Time*

Eliminating cloud computing from the IT services portfolio would lower the number of factors contributing to services-related procurement acquisition lead time (PALT) and aid in achieving a 50 percent reduction in PALT from an average of 2.7 years to 1.3 years (U.S. DoD 2019). It will also enable an innovative approach to be taken with cloud-based solutions regarding selection of contract type, rather than the order of precedence outlined in FAR 37.102(a)(2), Service Contracting Policy.

This proposed strategy aligns with the Office of Federal Procurement Policy Administrator’s directive on reducing PALT using innovation practices (U.S. Office of Management and Budget 2021). Though it is not presently included in the memorandum’s

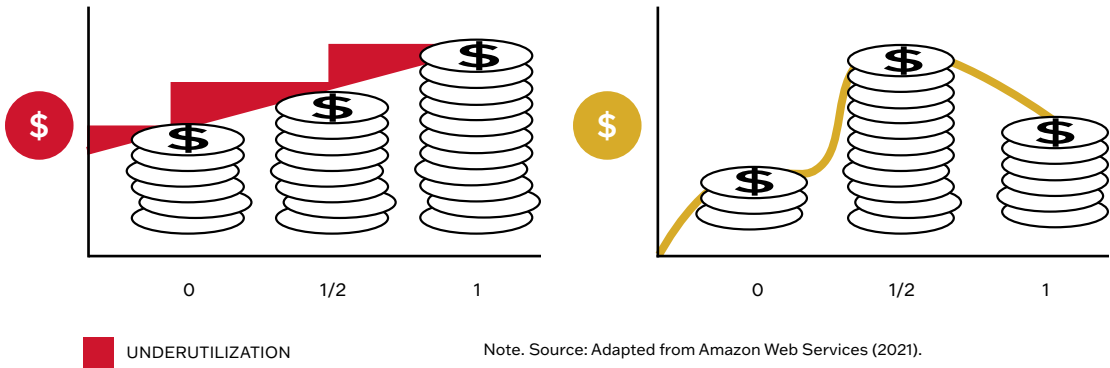
Frictionless Acquisition Strategies to Reduce PALT, the recategorization of cloud computing solutions could be added as Category Modernization under the Acquisition Action section.

*Leveraged Purchasing Power*

By leveraging its purchasing power and stability as a customer, the DoD can negotiate with contractors to gain savings through economies of scale. When corporations send invoices for services that were consumed during a certain billing period, they must wait for the invoice to be received and processed, leading to a delay in payment for services rendered. There is also a concern about employing debt collectors when these payments are late or suffering a loss of payment if that individual or company suffers a bankruptcy or other significant delay in ability to pay.

The DoD already has a means of receiving invoices and rapidly issuing payments ensuring that the contractors providing consumption-based services will not endure a significant delay in payment. It is not just cloud services that stand to benefit from the DoD employing consumption-based payments. Utilities, cellular services, and services with a variable need are just a few areas that could be positively impacted by the institution of consumption-based acquisitions.

**FIGURE 4. Stepped Funding Versus Consumption-Based Payment**



### Actual Usage and Upgradability

With three DoD Enterprise Clouds, and 18 service-specific cloud contracts listed on the DoD Enterprise Cloud Contract Site, the DoD has a significant amount of money invested in cloud computing. However, as demonstrated by the case study of milCloud 2.0 above, the DoD is not effectively estimating the demand. This is causing a significant administrative burden, shown in the cost effectiveness analysis, which equates to a significant loss.

Implementation of consumption-based payments would remove the waste associated with the inaccurate calculators, monitoring the amount used to ensure that there was no ADA violation and modifying TOs to add or remove funds before expiration. Consumption-based payments would finally permit the government to pay for the actual amount used. More importantly, it would permit the DoD to rapidly obtain access to upgraded features without the burdensome need to reprocure or modify the existing contract.

If the contractor upgrades their servers, but the current contract includes a certain memory or processing speed in the specifications, the government is constrained by the current conditions of the contract. By implementing consumption-based acquisition, the government would be able to accept the improved service and features offered by the ever-evolving IT.

## CONCLUSION

Though the DoD has made progress toward achieving parity with its public sector equivalents, greater acceleration is required to maintain a competitive edge over the near-peer adversaries.

Cloud-based solutions should not be classified as

a product or service under the DoD's existing PSC taxonomy but should instead be placed under the purview of a newly created acquisition category. A review of DoD's taxonomy for supplies and services revealed that cloud computing solutions are currently categorized as a service. Yet, the PSCs used for recent contract actions involving cloud-based requirements in FPDS-NG indicated a combination of both product and service codes. This mismatch in PSC usage impairs the contract reporting accuracy required by FAR Subpart 4.6 and interferes with the government's effort to measure the effectiveness of contract actions.

In examining the structure of recent large contracts for cloud services (e.g., Defense Enterprise Solutions, Joint Enterprise Defense) and comparing them to commercial best practice methods, it was revealed that multiple contract types were being used, including IDIQs, BPAs, BOAs, and their associated TOs. Existing enterprise cloud solutions also took different approaches, including awards to single and multiple contractors. Multiple award contracts were proven to have a significantly higher price for award and administration versus single award contracts. Additionally, examination of available contract types revealed that no existing structure is the optimal means of procuring cloud computing.

Adoption of a new contract type, proposed as the Consumption-Based Variable Price (CBVP) type, offers the ability to acquire items that are neither strictly products nor services, on an actual usage, in the same manner that such items are procured commercially, by paying after-the-fact.

The ADA was identified as being a significant barrier to instituting a consumption-based billing model for cloud-computing solutions. Although the government

attempted to take innovative steps towards procuring IaaS solutions on an enterprise level with milCloud 2.0, their billing model still requires end users to forecast usage and commit funding upfront. With a true consumption billing model, charges are based on actual usage. It is recommended that the government institute commercial accounting practices to posture toward payment methods following consumption of cloud-based solution offerings.

There are several oversight and accountability processes that could be affected by consumption-based IT acquisition. Analysis indicated significant necessary reforms to current contract financing laws.

To implement consumption-based acquisition for the DoD, the requirement for forward funding a contract must be revised. The ADA is resulting in unnecessary losses to the DoD through administrative burden as well as loss of access to funds over-allocated for a particular contract.

The DoD should leverage technological advances to create a new means of ensuring funds are available without needing to forward-fund contracts. The GPC was suggested as a viable means of funding consumption-based acquisitions, in arrears, under the Expanded Use program. Additionally, the GPC offers a rapid payment means that would be attractive to contractors, while reducing the overall administrative burden caused by funding modifications.

Through investigating the potential benefits of instituting a consumption-based approach to IT acquisition to enhance the DoD's ability to procure modern capabilities at market prices, it was revealed that consumption-based acquisition will reduce PALT. This approach will also allow the DoD to leverage its purchasing power, and pay based upon actual usage, while gaining the benefit of rapid upgradeability.

For cloud computing, simple changes to the Taxonomy for the Acquisition of Services and Supplies & Equipment and removal from the IT services portfolio would allow cloud computing to be recognized as an independent category. Recategorization would discharge burdensome requirements imposed in services contracting and allow for a more rapid acquisition process.

By leveraging purchasing power, the DoD can gain discounts from economies of scale. Most importantly, implementation of consumption-based acquisition procedures would allow the DoD to invoke commercial practices—paying based upon actual usage and allowing for more rapid acquisition of upgraded technologies.

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# IMPROVING PROCUREMENT ETHICS: A REVOLVING DOOR REGIME ANALYSIS

BY COREY L. RICHARDS, MSL, MBA

## Abstract

**PURPOSE:** This article studies the U.S. Ethics Reform Act (ERA) and Procurement Integrity Act (PIA), with a specific focus on the revolving door restrictions the Acts impose. In so doing, it touches upon the corollary concerns related to the broader concepts of conflicts of interest.

**DESIGN/METHODOLOGY/APPROACH:** The article argues that, despite the strengths of the United States' ethics regime, one should not overlook four principal weaknesses. First, the revolving door restrictions within the PIA are too rigid. Second, there is no database that accurately captures the timeframe that a company remains off-limits to future employment. Third, federal agency officials are unable to discern how restricted they are independently. Finally, agencies should be required to publish all information related to ethics waivers and the like proactively without requiring the public to make potentially laborious and costly requests.

**FINDINGS:** The article concludes with the following recommendations: (1) introduce a waiver process within the PIA; (2) create a database to track federal agency officials' particular matters in which officials participated personally and substantially; (3) create a software tool that can help federal agency officials better assess the presence of, or risks regarding, pre- or post-employment restrictions independently; and (4) improve the U.S. level of transparency regarding ethics reports, waivers, and opinions.

**ORIGINALITY/VALUE:** This research contributes new ideas to reform the revolving door provisions within the PIA and increase transparency.

## Keywords

contracting, ethics, procurement integrity, revolving door, transparency, procurement, particular matters, procurement officials

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## Improving Procurement Ethics: A Revolving Door Regime Analysis

Deputy Assistant Attorneys General (DAAGs) within the Department of Justice (DOJ) should be intimately familiar with the laws of the United States. However, that was not the case for one DOJ DAAG, whose missteps in leaving civil service to work for a private-sector employer led to a \$30,000 settlement in exchange for the government releasing him from its claims.<sup>1</sup> Given that an attorney failed to apply the laws regarding post-employment restrictions to his own set of facts accurately demonstrates—at least in part—that U.S. revolving door restrictions are complicated.

The different statutes and regulations addressing post-employment restrictions on federal agency personnel are located in various places within the United States Code, Code of Federal Regulations, and the *Federal Acquisition Regulations (FAR)*,<sup>2</sup> among others. Therefore, employees must check several sources to discern whether a particular action or conversation with a future private-sector employer will or may violate the law, and if so, whether there are things either party can do in advance to avoid possible sanctions. Even the highest levels within the U.S. government acknowledge that it is possible for its legal experts—who are trusted and tasked each day with interpreting the relevant statutes, regulations, and guidance—to get it wrong.<sup>3</sup>

Specifically, the law provides that an employee's reliance on an ethics opinion regarding whether he can accept employment with, or compensation from, a particular private-sector employer does not foreclose prosecution in the event the ethics counselor was incorrect. However, his opinion provides the employee pretty good protection.<sup>4</sup> Applying the relevant legis-

lative framework to a specific set of facts is no easy feat, even for the ethics counselors who do it as their day-to-day job.

Difficulty aside, there is an obvious need to strike a balance between an employee's freedom of choice of where he works within the private sector and the need to protect the integrity of the public procurement process.<sup>5</sup> However, if the post-employment-related regulations originating from the ERA<sup>6</sup> and the PIA<sup>7</sup> are that difficult to interpret, it indeed begs the question of whether reform is necessary.

This article studies the U.S. ERA and PIA<sup>8</sup> with a specific focus on the revolving door restrictions the acts impose. (When government officials move back and forth between the government and private sector, this is sometimes referred to as a “revolving door.”) In so doing, this article introduces the corollary concerns related to the broader concepts of conflicts of interest.<sup>9</sup>

The article begins by closely examining the revolving door prohibitions and restrictions within the United States. It explores the ERA and the PIA and their evolution, including why and when they were enacted. This article also discusses key definitions that demonstrate the complexity of this area of law. Although the PIA covers several general provisions, this article focuses specifically on those related to the “revolving door.”<sup>10</sup> It dives deep into acceptable pre-employment conduct and post-employment restrictions for federal civil servants within the U.S. statutory and regulatory regime. It highlights the complexities involved in determining a person's compliance or violation by taking the reader on the circuitous, winding path necessary to interpret the primary statutes and regulations. By doing so, it demonstrates the challenges public employees face in the pre-separation and post-separation phases of civil service.

Although no law prohibits federal employees from leaving the public sector outright, employees who have reached certain ranks or served in specific roles have more stringent restrictions regarding for which companies they may work (and when), what duties they may perform, or both. While many employees may have a lifetime representational ban on performing specific functions for a private-sector employer, other employees may face only a 12- or 24-month restriction, or no restriction at all.

The article reviews some of the principal weaknesses of the U.S. system and ends with the following recommendations:

1. Introduce a waiver process within the PIA;
2. Create a database to track federal agency officials' particular matters in which officials participated personally and substantially;
3. Create a software tool that can help federal agency officials better assess the presence of, or risks regarding, pre- or post-employment restrictions independently;
4. Improve the U.S. level of transparency regarding ethics reports, waivers, and opinions.

This article concludes that these reforms will help advance ethics in the United States.

### **Revolving Door Prohibitions and Restrictions in the United States**

The United States' statutory framework of revolving door prohibitions applies to all federal employees as part of the ERA.<sup>11</sup> However, some federal agency officials<sup>12</sup>—those involved in federal procurements—have even greater restrictions through the provisions of the PIA. Congress enacted the PIA as section 27 of the Office of Federal Procurement Policy Act (OFPPA)<sup>13</sup> following the Operation Illwind scandal<sup>14</sup> in the 1980s. The PIA aims to prevent improper competitive practices in procuring property and services.<sup>15</sup> As it is currently written,<sup>16</sup> the PIA prohibits disclosing or obtaining procurement information,<sup>17</sup> conducting employment discussions with government officials,<sup>18</sup> and paying or receiving compensation from a contractor.<sup>19</sup> The latter two prohibitions are most closely associated with the revolving door phenomenon.

The term “revolving door” describes when key personnel move between the public and private sectors, using their knowledge, experience, and prior relationships to the advantage of the gaining employer.<sup>20</sup> The revolving

door phenomenon is problematic because it creates, or has the potential to create, the appearance of, or an actual, conflict of interest.<sup>21</sup> The government strives to either neutralize, mitigate, or avoid conflicts of interest, either at the organization or on a personal level, at all costs. For example, criminal statutes prohibit specific conduct that could call into question the integrity of the government or its employees.<sup>22</sup>

To help curb conflicts of interests among federal agency officials and increase the public's confidence in the federal procurement and regulatory enactment processes, Congress enacted several statutes.<sup>23</sup> These statutes—stemming from the ERA of 1989<sup>24</sup> and the PIA<sup>25</sup>—predefine prohibited pre-employment and post-employment conduct and establish the ironclad conditions that, if met, restrict future private-sector employment opportunities available to certain federal agency officials.

The ERA of 1989 is codified in part at 18 USC § 207 (which restricts certain former federal agency officials<sup>26</sup> from representing contractors before the government), and 18 USC § 208 (which addresses participation in official matters in which employees have financial interests).<sup>27</sup> More broadly, these criminal statutes prohibit certain federal agency officials from seeking employment with, or accepting employment offers from, those companies with whom the federal agency official closely worked while in his or her official capacity. The PIA, on the other hand, imposes additional pre- and post-employment restrictions beyond those in title 18 of the U.S. Code on former agency officials involved in federal procurements.

### *Pre-employment Conduct Restrictions in the U.S. System*

Two primary statutes in the United States restrict a former agency official's employment prospects. The first one is the ERA (18 USC § 207), and the second is the PIA (41 USC § 2104). Before engaging in employment discussions with a private-sector employer, agency officials must be intimately familiar with both statutory and regulatory provisions to avoid administrative, civil, and (in some cases) criminal penalties.<sup>28</sup>

United States statutes and regulations are seemingly well defined and cover a wide breadth—from current employees seeking non-federal employment to non-federal employers seeking to hire current or former agency officials. Of note, a critical difference between U.S. general ethics rules and those codified in the PIA is that for a violation to occur under the former, an

agency official must engage in prohibited contact *and* negotiation under the general ethics rules, whereas mere contact regarding future potential employment triggers a possible violation of the PIA.<sup>29</sup>

### ERA

The requirements under the revolving door provisions of the PIA<sup>30</sup> are narrow given their focus on a small niche of federal employees (i.e., those participating personally and substantially in a federal procurement),<sup>31</sup> and the financial conflicts of interest portion of the ERA<sup>32</sup> is broad given its application to every executive branch employee.<sup>33</sup>

The primary purpose of section 208—the financial conflicts of interest portion of the ERA<sup>34</sup>—is to promote public confidence in the government’s decision making by preventing agency officials from self-dealing (or acting in their own best interests instead of the best interests of the United States).<sup>35</sup> It also prohibits conduct that might *appear to be motivated* by concern for one’s own financial interests.<sup>36</sup>

According to the statute’s provisions, agency officials are barred from participating in official matters that would have a personal financial effect, whether positive or negative or substantial or insubstantial.<sup>37</sup> Employees who participate personally and substantially in a particular matter that knowingly would have a direct and causal link between a particular matter and the relevant financial interest of themselves or certain others<sup>38</sup> with which they are associated<sup>39</sup> face criminal or civil penalties.<sup>40</sup> Similarly, “any person or organization with whom [the employee] is negotiating or has any arrangement concerning prospective employment”<sup>41</sup> is also subject to criminal or civil penalties.<sup>42</sup>

The United States Court of Appeals for the 6<sup>th</sup> Circuit discussed how to analyze whether a financial interest exists, stating:

[a] financial interest exists on the part of a party to a Section 208 action where there is a real possibility of gain or loss as a result of developments in or [the] resolution of a matter. Gain or loss need not be probable for the prohibition against official action to apply. All that is required is that there be a real, as opposed to a speculative, possibility of benefit or detriment.<sup>43</sup>

While the act of seeking employment<sup>44</sup> outside the federal government in and of itself is not prohibited, executive branch employees must first determine

whether they need to recuse themselves from any official business before doing so.<sup>45</sup> The law clearly states that an executive branch employee must not participate *personally and substantially* in any particular matter that, to the employee’s knowledge, will have a *direct and predictable effect*<sup>46</sup> “on the financial interests of a *prospective employer*”<sup>47</sup> with whom the employee is seeking employment<sup>48</sup> or “on the financial interests of the person by whom he or she is employed or with whom he or she has an arrangement concerning future employment.”<sup>49</sup> Even if an employee’s actions in seeking employment fall short of actual employment negotiation, recusal is still necessary.<sup>50</sup>

The employee bears the burden of notifying the agency—agency ethics official, coworker, or supervisor—of his need to recuse himself from participating in a particular matter.<sup>51</sup> The agency can, however, determine that the employee’s “interest is not so substantial as to be deemed likely to affect the integrity of the services which the government may expect from such ... employee” or that “the need for the individual’s services outweighs the potential for a conflict of interest created by the financial interest involved” thereby allowing the employee to continue working on the particular matter while also seeking employment.<sup>52</sup>

Executive branch employees who are required to file a public financial disclosure report<sup>53</sup>—such as the president, vice president, and employees serving positions above the GS-15 of the General Schedule—have additional notification and reporting requirements if negotiating for or reaching an agreement regarding future employment or compensation with a non-federal employer.<sup>54</sup> Such employees are also subject to the same recusal requirements discussed above.<sup>55</sup>

Like section 207 under title 18 of the United States Code, section 208 includes several provisions permitting the government official responsible for an employee’s appointment to waive the statutory disqualification requirement.<sup>56</sup> For an employee to qualify for an individual waiver, the employee must first provide a “full disclosure ... of the nature and extent of the disqualifying financial interest” to the official, who then must determine that the employee’s financial interest is “not so substantial as to be deemed likely to affect the integrity of the [employee’s] services.”<sup>57</sup> In the case of a special government employee serving on an advisory committee under the Federal Advisory Committee Act, a waiver is permitted only if the appointing official determines that “the need for the individual’s services outweighs the potential for a conflict of interest.”<sup>58</sup>

Lastly, section 208 authorizes the Office of Government Ethics (OGE) to issue regulatory exemptions if particular financial interests are “too remote or too inconsequential” to affect the integrity of the services provided by the government employee.<sup>59</sup>

### PIA

The requirements under the revolving door provisions of the ERA<sup>60</sup> are broad given their application to every executive branch employee,<sup>61</sup> and the PIA is narrow given its focus on only those employees who participate personally and substantially in a federal procurement, or oversee those who do.<sup>62</sup>

The PIA sets forth two instances when agency officials must report pre-employment discussions to their supervisor and designated ethics advisor. The first instance is when the official is contacted by a company performing as a contractor on a contract greater than the simplified acquisition threshold (currently \$250,000) with whom the official is “participating personally and substantially.”<sup>63</sup>

The second instance is when the official contacts, or is contacted by, a company that is a bidder or offeror on a procurement in which the official is “participating personally and substantially.”<sup>64</sup> Although not defined in the statute, FAR 3.104-1 defines *participating personally and substantially*<sup>65</sup> quite narrowly given the embedded, separate definitions for both *participating personally*<sup>66</sup> and *participating substantially*.<sup>67</sup> The FAR even goes a step further defining what is generally *not* considered personal and substantial participation,<sup>68</sup> seemingly leaving no stone unturned. In both instances discussed above, the agency and employee look ahead to identify whether the particular matters the employee is currently participating in could cause a reasonable person to question the employee’s impartiality or question the agency’s programs or operations.

Beyond reporting the contact, the PIA requires that the agency official also either “reject the possibility of non-federal employment” or “disqualify himself or herself from further personal and substantial participation in that federal agency procurement until the agency authorizes the official to resume participation in the procurement.”<sup>69</sup> Employees who disqualify themselves must notify the procuring contracting officer (PCO), the source selection authority (SSA) if other than the PCO, and their immediate supervisor.<sup>70</sup>

For the agency official to resume participating in the procurement, the agency must conclude either that “the person is no longer a bidder or offeror in that

federal agency procurement” or “[the agency official’s] discussions with the bidder or offeror regarding possible non-federal employment have terminated without an agreement or arrangement for employment.”<sup>71</sup>

Federal agency officials who play a role in the procurement process (even if informally) are arguably the likeliest victims of the U.S. post-employment restrictions, given how many agency officials are involved in the acquisition process across the federal service.

To illustrate, in FY21, the federal government awarded more than 4,600 competitive contracts greater than \$10 million.<sup>72</sup> Assuming that each of those contracts had a different PCO, it would mean there are thousands of PCOs who now have post-employment restrictions.

That number exponentially grows when considering the pre-solicitation and solicitation phase of the acquisition cycle, given the number of people involved with planning an acquisition, writing the scope of the agency’s requirement, and drafting the solicitation’s terms and conditions.

The number of agency officials with post-employment restrictions continues growing since each of those competitively awarded contracts greater than \$10 million required many people evaluating proposals and negotiating prices before the SSA ultimately selected an offeror for award. Therefore, potentially all those people have post-employment restrictions from their involvement in these procurements from FY21, whether they realize it or not.

### Post-employment Restrictions in the U.S. System

Just as the ERA and PIA address *pre*-employment restrictions, both acts also address prohibited *post*-employment conduct.

### ERA

Although the ERA restricts the activities of individuals who leave government service,<sup>73</sup> none of its provisions outright bar any individual, regardless of rank or position, from accepting employment with any private or public employer after government service.<sup>74</sup> Instead, the law only prohibits former employees, whether they are paid or unpaid, from engaging in certain activities on behalf of persons or entities other than the United States.<sup>75</sup>

The ERA’s general aim is to prevent former agency officials from switching sides on a matter in which

they worked directly and substantially on behalf of the government.<sup>76</sup> The statute explicitly sets forth that former agency officials have a lifetime representational ban on “knowingly mak[ing], with the intent to influence, any communication to or appearance before ... the United States ... on behalf of any other person ... in connection with a particular matter ...”<sup>77</sup> However, the statute also imposes a variety of restrictions and associated timeframes with respect to those restrictions depending on the former agency official’s role and rank within the executive branch.<sup>78</sup>

The ERA’s implementing regulation<sup>79</sup> thoroughly describes the relevant terms and phrases used within the law, including “communication”<sup>80</sup> and “appearance,”<sup>81</sup> and provides examples of what *communication to or appearance before* the United States is and is not.<sup>82</sup> Although former agency officials cannot make communications to or appearances before the United States with the intent to influence, they can work “behind the scenes” on such particular matters in which they previously represented the federal government.<sup>83</sup>

For example, the implementing regulation to the ERA’s post-employment restriction provisions sets forth that it is not considered a covered communication if a former employee prepares a research grant application on behalf of his client, which the client signs and submits to the government.<sup>84</sup> However, suppose a former employee prepared a report for his client, fully expecting that the client would present it as-is to the government.<sup>85</sup> The former employee did not sign the report, but the report contains the name of the former employee’s firm.<sup>86</sup> In this case, the law would consider it communication with the government (as opposed to strictly behind-the-scenes work) because the former employee intended for the information within the report to be attributed to himself.<sup>87</sup>

Similarly, the ERA’s post-employment restriction provisions describe the concept of “intent to influence” through both definition and examples.<sup>88</sup> For instance, a former employee can call an agency to obtain the date of a public hearing on his client’s license application.<sup>89</sup> However, the employee cannot sign and submit a grant application on behalf of a nonprofit organization by which they are now employed.<sup>90</sup> A former employee’s mere physical presence at a meeting, even if they do not utter a word, can also rise to an attempt to influence the government.<sup>91</sup>

Somewhat similar to the lifetime representational ban discussed above, the ERA also imposes a two-year representational ban (often referred to as a “cooling-

off” period) on all federal employees in the executive branch.<sup>92</sup> The same types of representational, post-employment conduct covered by the lifetime ban are relevant to the two-year ban.<sup>93</sup> The difference, however, is that the two-year ban extends to matters that were only under the “official responsibility”<sup>94</sup> of the former official while he was with the government.

Although this two-year restriction is a shorter timeframe than the lifetime ban, it has the potential to be more constraining. It does not require that the former government employee had personal and substantial involvement in a particular matter when they worked for the government, but only that a particular matter was actually pending<sup>95</sup> under their official responsibility within their last year of government service.<sup>96</sup> The law further provides that a non-supervisory employee does not (or cannot) have official responsibility for their own assignments.<sup>97</sup>

Although not analyzed in depth here, section 207 also contains several other prohibitions, further illustrating the magnitude of the post-employment restrictions within the U.S. ethics regime: section 207(c) (one-year cooling-off period for certain senior employees), section 207(d) (one-year cooling-off period for very senior employees), section 207(f) (one-year restriction on representing and assisting foreign entities), and section 207(l) (one-year restriction regarding contract advice by former assignees under the Information Technology Exchange Program).<sup>98</sup>

### PIA

In addition to the restrictions imposed by the ERA, the PIA further restricts for whom former agency officials<sup>99</sup> involved in federal procurements may work upon leaving the public sector.<sup>100</sup> First, if within the prior year a former agency official was a PCO, the SSA, a member of the source selection evaluation board (SSEB), or the chief of a financial or technical evaluation team at the time a contract in excess of \$10 million was awarded, then they are prohibited from accepting compensation from that contractor as an employee, officer, director, or consultant of the contractor for one year.<sup>101</sup>

Second, a former official who served as the program manager (PM), deputy program manager (DPM), or administrative contracting officer (ACO) for a contract in excess of \$10 million would be prohibited from accepting compensation from that contractor as an employee, officer, director, or consultant of the contractor for one year.<sup>102</sup>

Third, if the former agency official personally made the following types of decisions for the federal agency, the official is prohibited from accepting compensation from that contractor as an employee, officer, director, or consultant of the contractor for one year and may not:

- Award a contract, subcontract, modification of a contract or subcontract, or a task order or delivery order in excess of \$10,000,000 to that contractor;
- Establish overhead or other rates applicable to one or more contracts for that contractor that are valued in excess of \$10,000,000;
- Approve issuance of one or more contract payments in excess of \$10,000,000 to that contractor;
- Pay or settle a claim in excess of \$10,000,000 with that contractor.<sup>103</sup>

Notably, however, a former agency official can accept compensation “from a division or affiliate of a contractor that does not produce the same or similar products or services as the entity of the contractor that is responsible for the contracts referred to [above].”<sup>104</sup> However, it is unclear how—or if—Congress intended to ensure that former agency officials governed by the PIA do not exploit this apparent loophole.<sup>105</sup>

### **Principal Weaknesses of the U.S. Revolving Door Regime and Proposed Reform**

The United States assuredly has a robust ethics regime consisting of thoroughly-written revolving door provisions. Its convoluted mazes of statutes, regulations, and agency-level guidance make it nearly impossible for an employee to independently assess whether the risk is low for communicating with, or accepting employment from, a specific company. Seeking counsel from an agency ethics counselor—an undeniably wise thing to do given the potential for criminal and civil penalties<sup>106</sup>—is merely a suggestion, not a requirement, within the U.S. ethics regime.<sup>107</sup> However, there are a few exceptions.<sup>108</sup>

Despite the many strengths of the United States’ ethics regime (e.g., its well-defined terms), it is important to not overlook some principal weaknesses. First, the revolving door restrictions within the PIA still impose liability even if the official at issue could not have improperly influenced the award decision—his

liability turns on his status, not on his actions.

Second, the federal government does not have a database or any other tool that accurately captures the periods (i.e., start and end dates) that a company remains off-limits to future employment for a federal agency official.

Third, the maze of statutes and implementing regulations makes it difficult for an agency official to discern independently how restricted they are at any given time.

Finally, although the ERA requires that agencies make certain waiver information available to the public upon request, Congress should go a step further and require agencies to publish proactively all information related to ethics waivers and the like without requiring the public to make potentially laborious and costly requests.

### ***Weakness 1: Statutes and Implementing Regulations Too Rigid***

The PIA imposes strict one-year restrictions on former agency officials who served in certain positions<sup>109</sup> supporting a federal procurement exceeding \$10 million. While a fair initial rule, Congress should consider there are more grey instances than black and white, and therefore relax its if-then formula. Today, the formula implies, for example, that if a person served as the PCO of a competitive contract greater than \$10 million, then that person cannot work for the contractor that received the award for one year.<sup>110</sup> Period.

However, suppose that person served as a PCO for the United States Army. While in that role, he was assigned to work on a \$100 million formal source selection that had a separately appointed SSA. The FAR requires that the SSA—not the PCO—make the award decision.<sup>111</sup> It further sets forth that the SSA is the single party responsible for approving the source selection plan (which includes the government’s selection criteria).<sup>112</sup> Therefore, it is doubtful that a PCO would have single-handed influence in which offeror won the contract.<sup>113</sup> Nor is it likely that the PCO could tailor the evaluation criteria to a particular firm given there is someone above them (the SSA) keeping them honest.

Beyond the regulations stipulating that the SSA is the party responsible for selecting the awardee,<sup>114</sup> additional safeguards are in place to protect the integrity of the process. For example, before issuing the solicitation, the agency must determine how to evaluate offerors.<sup>115</sup> The SSA approves such criteria in

advance of the solicitation's release. Additionally, the SSEB, which does not include the PCO, is responsible for objectively and defensibly using those evaluation criteria when evaluating offerors' proposals.<sup>116</sup>

A formal source selection relies on many agency employees who play some role in the evaluation process. The PCO, however, does not have much formalized responsibility aside from serving as the single point of contact between the evaluation board and the offerors, and making the award.<sup>117</sup> Therefore, it is unlikely that any single individual below the SSA (including the PCO) would be able to introduce enough bias to deceive a team of people including layers of attorneys and a source selection advisory council.<sup>118</sup> Specifically, the individual would have to skew the evaluations in favor of a particular, undeserving offeror with whom the PCO has a current or future financial interest. Thus, a situation with a similar fact pattern could conceivably justify a shorter cooling-off period for a former agency employee who served as a PCO on a contract valued over \$10 million.

Therefore, the revolving door provisions within the PIA—a blanket exclusion period tied to specific roles regardless of particular facts and without any possibility for a waiver—are too constraining. Instead of enforcing a rigid, black-and-white rule, the United States should allow employees individually affected—those serving in a covered position<sup>119</sup>—an opportunity for an agency ethics official to review their specific circumstance to see if it is appropriate for the cooling-off period to be reduced or eliminated.<sup>120</sup>

Alternatively, Congress might consider relaxing the prohibitions on former officials' acceptance of compensation from a contractor. It would represent a move away from position-based (or title-based) exclusions toward level-of-participation-based exclusions. Either option could achieve the solution of relaxing the automatic restrictions triggered by the PIA and its implementing regulation.

### ***Weakness 2: No System for Tracking Employees' Matters and Particular Matters***

In addition to former agency officials potentially disadvantaged from a lack of a waiver process within the PIA, there is a risk to both the agency and the employee regarding proper recordkeeping of matters and particular matters with which the employee participated personally and substantially. Recall, the ERA sets forth that former agency officials are barred

from “knowingly mak[ing], with the intent to influence, any communication to or appearance before any officer or employee of any department, agency, ... on behalf of any other person ..., in connection with a particular matter ... which he [knew] or reasonably should [have] know[n] was actually pending ... within a period of one year before the termination of his or her service or employment.”<sup>121</sup>

However, depending on the size of the former agency official's team—a reflection of the number of particular matters that were under their official responsibility or were pending under their official responsibility—there is risk to both the agency and the former employee in failing to recollect them all. Consequently, it is problematic that there is no formalized tracking system that the agency provides or encourages the employee to keep on his own accord.

Although the United States has some tools that track a PCO's awarded contracts by contract number and prime contractor name and dollar value,<sup>122</sup> no database similarly tracks all potential or actual offerors or bidders in advance of, or at the time, a competitive solicitation closes. Nor does a database exist that gives the PCO, or any other federal agency officials involved in the pre-award, award, and post-award phases of a public procurement, the ability to record or track significant subcontractors.

This creates the potential for federal agency officials to subject themselves to risk. For example, they could be approached by a significant first-tier subcontractor on a contract awarded many months previously among a sea of tens or hundreds of contract actions within their purview after that. Could the federal agency official make a case that he did not violate the laws knowingly? Perhaps. Would it be a plausible defense? Doubtful. Even an inadvertent oversight could subject the employee to undeserving sanctions<sup>123</sup> or the agency to unwelcomed questioning from the public about the integrity of the federal procurement processes.

Therefore, Congress might consider creating a database (or expanding upon an existing database<sup>124</sup>) that can accurately capture the periods (i.e., start and end dates) that a company remains off-limits to future employment pursuant to the PIA's provisions. Such a database could help both federal agency officials and agency ethics advisors keep an accurate record of major prime and subcontractors with whom the official served in a covered position while assigned to work a contract action valued over \$10 million and the extent of their involvement.



For example, the agency official could populate the database with relevant contractor identifying information, contract number(s), contract value(s), date the contractor began working on the particular matter, along with a projection of when their involvement in the particular matter is expected to cease. This database would increase the accuracy of the agency official's information to the ethics advisor when seeking an opinion on whether they can work for a particular firm.

***Weakness 3: Employees Not Well Equipped to Assess Whether a Firm Remains Off-Limits to Future Employment Independently***

Beyond the lack of a waiver process within the PIA and no data repository for agency officials to more accurately track particular matters to which they have been assigned, agency officials are disadvantaged by the maze of statutes and regulations they need to weed through before accepting outside employment. The rules are so complex, and located in several places within the United States Code and Code of Federal Regulations, that employees invariably have to phone a friend—an ethics advisor—to figure out what does, and what does not, apply to their specific situation.

Congress should consider equipping employees to make an independent assessment—at least initially—as to where the boundaries are, with whom communication is restricted, and what are the inherent risks. Presently, there exists no such opportunity. As a solution, the federal government could create a decision-making software application<sup>125</sup> that can assist agency officials in assessing any risk regarding pre- or post-employment restrictions.

Such a database—or perhaps an expansion of an existing database for tracking financial interests<sup>126</sup>—could conceivably serve a similar purpose to tax preparation software tools. Those require an individual to input a minimum set of data (i.e., income, expenses) and respond to multiple questions about themselves and their lives. The tool analyzes the data against the relevant tax statutes and regulations to automatically calculate how much tax a person owes, or how much of a refund they can expect to receive. The software also performs thousands of error checks while assessing a filer's audit risk.

Here, federal agency officials would input (based on a time interval such as quarterly or annually) persons and companies to whom, for example, they awarded a contract, subcontract, modification of a contract or

subcontract, or a task order or delivery order above \$10 million (the current statutory threshold). The data would cover all information relevant to particular matters with which the federal agency official was personally and substantially involved. This includes the private-sector firms involved or any firms (whether by name or industry classification) in which the official has a real personal financial interest.

While the software would not wholly replace the role of an agency's ethics counselor, it would offer the employee a level of independence in regularly assessing their risk in engaging in employment discussions with particular firms. Moreover, it would enable the employee to have a heightened awareness of whether employment with a firm that initiated such a dialogue is even viable sooner than an ethics counselor would consider the facts and provide the employee an opinion.<sup>127</sup>

***Weakness 4: Lack of Transparency in OGE's Reports, Waivers, and Ethics Opinions***

Lastly, U.S. laws require the agency to make available “upon request” any determinations where the agency granted an exemption under the section of the ERA that addresses a federal official's participation in official matters in which he has a financial interest.<sup>128</sup> However, its existing process serves as an initial stonewall for transparency given the federal government's laborious and costly Freedom of Information Act procedures for requesting information that is not already in the public domain.<sup>129</sup>

Instead, agencies should proactively publish reports, waivers, and ethics opinions despite not being “required” to do so. Although the U.S. OGE director publicly releases reports submitted by the president, vice president, and filers at executive pay levels I<sup>130</sup> and II,<sup>131</sup> the director does not automatically release the reports related to approximately 1,000 other presidentially appointed, Senate-confirmed filers whose reports OGE reviews. Additionally, the director does not proactively release the approximately 25,000 remaining public filers' reports that are not reviewed by OGE.<sup>132</sup> The reason is a bit unclear; however, it is likely because Congress does not require the director to do so.

The OGE director's present efforts to automatically publicly release many documents<sup>133</sup> is a far cry from total transparency. While the law clarifies that under no circumstance will an agency release confidential financial disclosure forms,<sup>134</sup> the law is not so adamant,

for example, about shielding former agency officials' ethics opinions regarding future private-sector employment. Moreover, the regulation unequivocally states, "current or former employee who discloses information to an agency ethics official, to a government attorney, or to an employee of the [OGE] does not personally enjoy an attorney-client privilege with respect to such communications."<sup>135</sup>

Publicly posting the ethics opinions that former agency officials receive from the agency ethics advisor would be a welcome step towards greater transparency. Furthermore, giving the public such access can ultimately benefit Congress' monitoring regime. The public can serve as whistleblowers if the tasks the former agency official ultimately performs for the private-sector employer differ from the planned duties the former agency official initially disclosed to the ethics advisor.

Given that light exposes darkness,<sup>136</sup> making such opinions public will likely improve both the agency official's input to the ethics advisor and the thoroughness of the ethics advisor's resulting opinion. This opinion is highly dependent on the candor and completeness of the information the official offers about what particular matters they were involved in, in what position they will be serving the private-sector employer, and what tasks they will perform.

Beyond moving toward the release of post-employment ethics opinions, Congress should also consider requiring OGE to publicly release information about an agency's waivers to federal officials' disqualification notices.<sup>137</sup> Although OGE publicly disclosed that agencies processed "nearly 70" waivers in 2020, it provided no further insight.<sup>138</sup>

There is no mistaking that the public undoubtedly wants information. In 2020, OGE reported that U.S. agencies received 584 requests for public financial disclosure reports.<sup>139</sup> Additionally, the public and news media inspected more than 7,000 documents, including public financial disclosure reports, periodic transaction reports, certificate of divestitures, ethics pledge waivers, and other covered records.<sup>140</sup>

As a proactive measure, Congress might make information presumptively available, without requiring interested personnel to submit a formal information request. However, recommending that federal agencies increase transparency surrounding their ethics regime does not include jeopardizing agency officials' personally identifiable information. The "who" portion of the ethics document is not relevant in many

instances. For example, what was an agency's basis for waiving an agency official's recusal? While the law itself provides the public with a broad basis—"that the interest is not so substantial as to be deemed likely to affect the integrity of the services that the government may expect from such officer or employee"<sup>141</sup>—the agency should be willing to share its analysis in how it ultimately reached that conclusion.

## Conclusion

Although the U.S. ethics regime appears to be working, this article highlighted four areas for reform:

1. Allow for waiver of the PIA's post-employment restriction provisions;
2. Create a database for tracking particular matters with which agency officials participated personally and substantially;
3. Develop software that can help agency officials better assess what post-employment restrictions they have, if any;
4. Require OGE to proactively publish reports, waivers, and ethics opinions.

At first glance, these changes would reduce the appearance of impropriety and bring enhanced transparency that would come from the other recommendations. Enhanced transparency reinforces legitimacy in the federal government.

**Endnotes**

1 See “Encyclopedia of Ethical Failure” *Department of Defense Office of General Counsel Standards of Conduct Office*, October 2014, pp. 136-137. (“The Deputy Assistant Attorney General (DAAG) of the Information Resources Management (IRM) office within the Department of Justice left government service in January 1999. In his former position, he had managed the various functions of the IRM office, which is responsible for maintaining, assessing, designing, and procuring the information systems and telecommunications for the Department of Justice. After [he] left government service, he joined Science Applications International Corporation (SAIC). On April 7, 1999, now working for SAIC, the former DAAG telephoned the Acting DAAG of IRM. He told the Acting DAAG that he knew that the Department of Justice was considering not using SAIC on a new contract and stated that such action might require a payment to SAIC, which could, in turn, trigger the Antideficiency Act because budgeted funds would have been exceeded. The government maintained that the former DAAG’s conduct violated 18 USC 207(c), a criminal statute that prohibits a former senior employee from communicating to, or appearing before, employees of his former department or agency for one year after leaving the government, on behalf of another, with the intent to influence official action. Pursuant to a civil settlement agreement signed by the parties in August 2000, the former DAAG paid the government \$30,000, and the government released him from its claims.”)

2 See, e.g., 18 USC §§ 207 and 208, 5 CFR § 2635.602, 41 USC § 2103(a), and FAR 3.104-3(c).

3 See, e.g., FAR 3.104-6(d)(3). (“If the requester is advised in a written opinion by the agency ethics official that the requester may accept compensation from a particular contractor, and accepts such compensation in good faith reliance on that advisory opinion, then neither the requester nor the contractor will be found to have knowingly violated 41 USC 2104.”) See, e.g., 5 CFR § 2641.105(c). (“Reliance on the oral or written advice of an agency ethics official or the OGE cannot ensure that a former employee will not be prosecuted for a violation of 18 USC 207. However, good faith reliance on such advice is a factor that may be taken into account by the Department of Justice (DOJ) in the selection of cases for prosecution. In the case in which OGE issues a formal advisory opinion in accordance with subpart C of 5 CFR part 2638, the DOJ will not prosecute an individual who acted in good faith in accordance with that opinion. See 5 CFR 2638.309.”) See, e.g., 5 CFR § 2638.209(m) (“(1) Any formal advisory opinion referred to in this section or any provisions or finding of a formal advisory opinion involving the application of the Act or the regulations promulgated pursuant to the Act or Executive order may be relied upon by: (i) Any person directly involved in the specific transaction or activity with respect to which such advisory opinion has been rendered; and (ii) Any person directly involved in any specific transaction or activity which is indistinguishable in all its material aspects from the transaction or activity with respect to which such formal advisory opinion was rendered. (2) Any person who relies upon any provision or finding of any formal advisory opinion in accordance with this paragraph and who acts in good faith in accordance with the provisions and findings of such opinion will not, as a result of such act, be subject to prosecution under 18 USC 202-209 or, when the opinion is exculpatory, be subject to any disciplinary action or civil action based upon legal authority cited in that opinion.”)

4 See *id.*

5 FAR 1.102(a) states, “The vision for the Federal Acquisition System is to deliver on a timely basis the best value product or service to the customer, while maintaining the public’s trust and fulfilling public policy objectives. Participants in the acquisition process should work together as a team and should be empowered to make decisions within their area of responsibility.” Further, FAR 1.102(b)(3) states, the Federal Acquisition System will “conduct business with integrity, fairness, and openness.”

6 Pub. L. No. 101-194, § 507, 103 Stat. 1716, 1759 (1989). On November 20, 1989, the *Ethics in Government Act of 1978* was amended by the *ERA of 1989*, which, among other things, added post-employment restrictions on executive and legislative branch employees and amended certain aspects of financial reporting requirements. The *ERA*

of 1989 also included other changes; however, they are not discussed here for brevity.

7 The PIA has been cited as 41 USC § 423. However, on January 4, 2011, 41 USC § 423 was repealed and replaced by 41 USC §§ 2101 – 2107. See Pub. L. No. 11-350, sec. 7(b), 124 Stat. 3855 (2011).

8 See generally 41 USC Chapter 21.

9 For brevity, this article does not discuss lobbying, although readers should be aware that the United States has laws setting forth lobbying restrictions once certain agency officials leave public service. For more information, see the Foreign Agents Registration Act (FARA) of 1938, the Regulation of Lobbying Act (RLA) of 1946, the Lobbying Disclosure Act (LDA) of 1995, and the Honest Leadership and Open Government Act (HLOGA) of 2007. The LDA of 1995 is codified in 2 USC §§ 1601 – 1614. Additionally, Section 1045 of the 2018 National Defense Authorization Act imposes lobbying restrictions on former senior and very senior DoD military and civilian officials. Lastly, Executive Order 13989, which President Biden signed at the start of his administration, addresses post-employment restrictions, including lobbying. See Executive Order No. 13989 of January 20, 2021, 86 Fed. Reg. 7029 (January 25, 2021). Executive Order 13989 codifies the “Ethics Pledge,” which all executive agency appointees must sign unless waived according to the Executive Order.

10 The revolving door provisions of the PIA are precisely located in 41 USC §§ 2103 and 2104.

11 See 41 USC § 2104(a) (noting that the prohibitions on former official’s acceptance of compensation from contractors applies to “officers” (as defined in Section 2104 of Title 5), “employees” (as defined in Section 2105 of Title 5), and “members of the uniformed services” (as defined in Section 2101(3) of Title 5).

12 FAR 3.104-1 defines “official” as “(1) An officer, as defined in 5 U.S.C.2104; (2) An employee, as defined in 5 U.S.C.2105; (3) A member of the uniformed services, as defined in 5 U.S.C.2101(3); or (4) A special government employee, as defined in 18 U.S.C.202.” There is no distinction between “official,” “agency official” or “federal agency official” within this article.

13 Initially, Congress established the OFPPA to “provide overall direction of procurement policies, regulations, procedures, and forms for executive agencies.” See Pub. L. No. 93-400 88 Stat. 4063 (1974), Sec. 3(a). Although it was amended in 1979 and 1983, a significant amendment occurred in 1988 to change significantly the procurement system and seek “to correct the seedy trade of favors and information, which fueled [the Illwind] scandal.” See 134 Cong. Reg. 32,155, 32,156 (1988) (statement of Senator John Glenn). The 1988 amendment also aimed to “break the back of the ‘old-boy’ network where information and favors [were] given to contractors, often via consultant intermediaries, to provide individual competing contractors with an unfair advantage over their more scrupulous competitors.” *Id.* See Pub. L. No. 100-679 102 Stat. 4063 (1988) (“OFPPA of 1988”) (repealed by Pub. L. No 104-106, 110 Stat. 665 (1996)). The Procurement Integrity Act was included under § 6(a) of that Amendment.

14 “Operation Illwind.” *Federal Bureau of Investigation*, 5 July 2016, [www.fbi.gov/history/famous-cases/operation-illwind](http://www.fbi.gov/history/famous-cases/operation-illwind). (“On June 14, 1988, a major multi-agency investigation into defense procurement fraud—later codenamed Operation Illwind, a likely reference to an old English proverb—was announced to the world via a one-page press statement ... [T]he case revealed that some Defense Department employees had taken bribes from businesses in exchange for inside information on procurement bids that helped some of the nation’s largest military contractors win lucrative weapons systems deals.”)

15 See 41 USC § 401 (Congressional Declaration of Policy); 1974 U.S. Code Cong. & Admin. News at 4589 et seq.

16 The last significant amendment to the PIA occurred in February 1996.

17 See 41 USC § 2102.

18 See 41 USC § 2103.

19 See 41 USC § 2104.

20 See, e.g., Holman, Craig, “Origins, Evolution and Structure of

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the Lobbying Disclosure Act.” *Public Citizen*, 11 May 2006, page 2, <https://www.citizen.org/wp-content/uploads/ldaorigins.pdf>. (“...[T]he phenomenon known as the “revolving door,” [is when] former government officials cash in on their friendships, inside information and networks established earlier to exert disproportionate influence over the government’s policy agenda.”) In addition to the public-to-private sector revolving door, there is also the private-to-public sector revolving door and the government-to-lobbyist revolving door. See also, e.g., Holman, Craig. “Slowing the Federal Revolving Door: Reforms to Stop Lobbying Activity by Former Public Officials and States that Lead the Way.” *Public Citizen*, 22 July 2019, page 2, <https://www.citizen.org/article/slowing-the-federal-revolving-door/>.

21 See, e.g., Szeliga, Keith R. “Watch your Step: A Contractor’s Guide to Revolving-Door Restrictions.” *Public Contract Law Journal*, vol. 36, no. 4, American Bar Association, 2007, pp. 563-564, <http://www.jstor.org/stable/25755427>. (“Before entering into employment discussions with a current or former government employee, a contractor should conduct an initial conflict of interest screening [to minimize their risk]. The immediate and most important purpose of such a screening is to determine whether the contractor may engage in employment contacts or negotiations with the applicant. However, the initial screening also provides a useful opportunity to determine whether the applicant is subject to a hiring ban under the Procurement Integrity Act or representational restrictions under Section 207.”)

22 See 18 USC §§ 201, 203, 205, 208, and 209.

23 More precisely, the statutes, which are further discussed within the article, are 18 USC §§ 207 and 208 and 41 USC §§ 2103 and 2104.

24 See *supra* note 6.

25 See *supra* note 7.

26 The term “official” means, “(A) an officer, as defined in Section 2104 of Title 5; (B) an employee, as defined in Section 2105 of Title 5; and (C) a member of the uniformed services, as defined in Section 2101(3) of Title 5.” See 41 USC § 2101(5) and FAR 3.104-1.

27 Generally, § 203 prohibits federal employees from accepting compensation for representing someone else before a federal agency on particular matters in which the United States is a party. Of note, it also has a post-employment aspect. However, it is intentionally omitted from this article, given its narrow focus on representational services.

28 See 18 USC § 216.

29 Compare 5 CFR § 2635.603(b) (which provides that in order to qualify as “seeking employment” related to the financial conflict portion of the ERA (18 USC § 208), an employee must be engaged in “negotiations” which is defined in (b)(1)(i)) to FAR 3.104-3(c) (which requires that if a current employee merely contacts or is contacted by an offeror regarding non-Federal employment, notification and recusal is required.)

30 See 41 USC § 2103.

31 See FAR 3.104-3(c).

32 See 18 USC § 208 as implemented by 5 CFR §§ 2635.601 – 2635.607.

33 See 5 CFR § 2635.602 for the applicability of Subpart F (“seeking other employment”) which applies to “employees” as defined in 5 CFR § 2635.102. (“Employee means any officer or employee of an agency, including a special government employee.”)

34 See *supra* note 32.

35 See “Report to the President and to Congressional Committees on the Conflict of Interest Laws Relating to Executive Branch Employment.” *Office of Government Ethics*, January 2006, p. 30.

36 See *id.*

37 See, e.g., *United States v. Gorman*, 807 F.2d 1299, 1303 (6<sup>th</sup> Cir. 1988) (“A financial interest exists on the part of a party to a Section 208 action where there is a real possibility of gain or loss as a result of developments in or [the] resolution of a matter. Gain or loss need not be probable for the prohibition against official action to apply. All that is required is that there be a real, as opposed to a speculative,

possibility of benefit or detriment.”) See also 5 CFR § 2635.402(b)(1)(ii) (stating that the amount of the financial gain or loss does not need to be known, nor does it matter if the gain or loss is material).

38 The certain other covered persons include “his spouse, minor child, general partner, organization in which he is serving as officer, director, trustee, general partner or employee, or any person or organization with whom he is negotiating or has any arrangement concerning prospective employment.” See 18 USC § 208(a).

39 See 5 CFR § 2635.402(b)(1)(i).

40 See *supra* note 38.

41 See *supra* note 39.

42 See *supra* note 38.

43 See *supra* note 37. [emphasis added]

44 “Seeking employment” includes “[e]ngag[ing] in negotiations for employment with any person”; “[m]ak[ing] an unsolicited communication to any person, or such person’s agent or intermediary, regarding possible employment with that person”; and “[m]ak[ing] a response, other than rejection, to an unsolicited communication from any person, or such person’s agent or intermediary, regarding possible employment with that person.” See 5 CFR § 2635.603(b)(1). A person is no longer “seeking employment” if either party rejects the possibility of employment and all discussions concerning employment stop or two months have passed since the employee sent an unsolicited resume and the employer has not indicated any interest. See 5 CFR § 2635.603(b)(2). If either party defers employment discussions into the foreseeable future (e.g., after a particular matter is resolved), that does not constitute rejection of possible employment. See 5 CFR § 2635.603(b)(3).

45 See generally 5 CFR § 2635.604.

46 “A particular matter will have a direct effect on a financial interest if there is a close causal link between any decision or action to be taken in the matter and any expected effect of the matter on the financial interest. An effect may be direct even though it does not occur immediately. A particular matter will not have a direct effect on a financial interest, however, if the chain of causation is attenuated or is contingent upon the occurrence of events that are speculative or that are independent of, and unrelated to, the matter. A particular matter that has an effect on a financial interest only as a consequence of its effects on the general economy does not have a direct effect within the meaning of this subpart.” See 5 CFR § 2635.402(b)(1)(i). Additionally, “[a] particular matter will have a predictable effect if there is a real, as opposed to a speculative possibility that the matter will affect the financial interest. It is not necessary, however, that the magnitude of the gain or loss be known, and the dollar amount of the gain or loss is immaterial.” See 5 CFR § 2635.402(b)(1)(ii).

47 Prospective employer means “any person with whom the employee is seeking employment. Where contacts that constitute seeking employment are made by or with an agent or other intermediary, the term prospective employer means: (1) A person who uses that agent or other intermediary for the purpose of seeking to establish an employment relationship with the employee if the agent identifies the prospective employer to the employee; and (2) A person contacted by the employee’s agent or other intermediary for the purpose of seeking to establish an employment relationship if the agent identifies the prospective employer to the employee.” See 5 CFR § 2635.603.

48 See 5 CFR § 2635.604(a)(1). [Emphasis added.]

49 See 5 CFR § 2635.606(a).

50 See *supra* note 44.

51 See 5 CFR § 2635.604(b).

52 See 18 USC § 208(b)(1) and (3); 5 CFR § 2635.605.

53 The term “public filer” includes: (a) the president; (b) the vice president; (c) each officer or employee in the executive branch, including a special government employee as defined in 18 USC 202(a), whose position is classified above GS-15 of the General Schedule prescribed by 5 USC 5332, or the rate of basic pay for which is fixed, other than under the General Schedule, at a rate equal to or greater

than 120 percent of the minimum rate of basic pay for GS-15 of the General Schedule; each member of a uniformed service whose pay grade is at or in excess of O-7 under 37 USC 201; and each officer or employee in any other position determined by the Director of the Office of Government Ethics to be of equal classification; (d) each employee who is an administrative law judge appointed pursuant to 5 USC 3105; (e) any employee not otherwise described in paragraph (c) of this section who is in a position in the executive branch that is excepted from the competitive service by reason of being of a confidential or policy-making character, unless excluded by virtue of a determination under § 2634.203; (f) the postmaster general, the deputy postmaster general, each governor of the Board of Governors of the United States Postal Service and each officer or employee of the United States Postal Service or Postal Regulatory Commission whose basic rate of pay is equal to or greater than 120 percent of the minimum rate of basic pay for GS-15 of the General Schedule; (g) the Director of the Office of Government Ethics and each agency's designated agency ethics official; (h) any civilian employee not otherwise described in paragraph (c) of this section who is employed in the Executive Office of the president (other than a special government employee, as defined in 18 USC 202(a)) and holds a commission of appointment from the president; and (i) anyone whose employment in a position or office described in paragraphs (a) through (h) of this section has terminated, but who has not yet satisfied the filing requirements of § 2634.201(e). See 5 CFR § 2634.202. The public financial report procedures are codified in 5 CFR § 2634.203.

54 See generally 5 CFR § 2635.607.

55 See 5 CFR § 2635.606.

56 See 5 CFR § 2635.402(d).

57 See *id.* at (d)(2).

58 See *id.* at (d)(3).

59 See *id.* at (d)(1).

60 See generally 18 USC § 207.

61 See 5 CFR § 2635.602 for the applicability of Subpart F ("seeking other employment"), which applies to "employees" as defined in 5 CFR § 2635.102. ("Employee means any officer or employee of an agency, including a special Government employee.")

62 See FAR 3.104-3(c).

63 See 41 USC § 2103(a) and FAR 3.104-3(c).

64 See *id.*

65 See FAR 3.104-1. ("Participating personally and substantially in a federal agency procurement means-(1) Active and significant involvement of an official in any of the following activities directly related to that procurement:

(i) Drafting, reviewing, or approving the specification or statement of work for the procurement.

(ii) Preparing or developing the solicitation.

(iii) Evaluating bids or proposals, or selecting a source.

(iv) Negotiating price or terms and conditions of the contract.

(v) Reviewing and approving the award of the contract.")

66 See FAR 3.104-1. ("Participating personally" means participating directly, and includes the direct and active supervision of a subordinate's participation in the matter.")

67 See *id.* ("Participating substantially" means that the official's involvement is of significance to the matter. Substantial participation requires more than official responsibility, knowledge, perfunctory involvement, or involvement on an administrative or peripheral issue. Participation may be substantial even though it is not determinative of the outcome of a particular matter. A finding of substantiality should be based not only on the effort devoted to a matter, but on the importance of the effort. While a series of peripheral involvements may be insubstantial, the single act of approving or participating in a critical step may be substantial. However, the review of procurement documents solely to determine compliance with regulatory, administrative, or budgetary procedures, does not constitute

substantial participation in a procurement.")

68 See *id.* ("Generally, an official will not be considered to have participated personally and substantially in a procurement solely by participating in the following activities:

(i) Agency-level boards, panels, or other advisory committees that review program milestones or evaluate and make recommendations regarding alternative technologies or approaches for satisfying broad agency-level missions or objectives.

(ii) The performance of general, technical, engineering, or scientific effort having broad application not directly associated with a particular procurement, notwithstanding that such general, technical, engineering, or scientific effort subsequently may be incorporated into a particular procurement.

(iii) Clerical functions supporting the conduct of a particular procurement.

(iv) For procurements to be conducted under the procedures of OMB Circular A-76, participation in management studies, preparation of in-house cost estimates, preparation of "most efficient organization" analyses, and furnishing of data or technical support to be used by others in the development of performance standards, statements of work, or specifications.")

69 See 41 USC § 2103(a)(2)

70 See FAR 3.104-5(b).

71 See 41 USC § 2103(a)(2)(B).

72 See "USAspending.Gov." *USAspending.Gov Custom Award Data*, [https://www.usaspending.gov/download\\_center/custom\\_award\\_data](https://www.usaspending.gov/download_center/custom_award_data). Accessed 10 Oct. 2021. The author performed a custom search for Prime Award "contracts," using "all" Awarding Agencies, in FY21 and then further filtered the results. More specifically, within the Microsoft Excel files produced by the database, Column J ("federal\_action\_obligation") was filtered for "greater than 10,000,000," and Column DM ("extent\_competed") was filtered for both "full and open competition" and "full and open competition after exclusion of sources." The custom search and filter revealed that 4,638 full and open contracts greater than \$10,000,000 were awarded between 01 Oct 2020 and 30 Sept 2021 across the federal government.

73 See 18 USC § 207 and 5 CFR § 2641.101.

74 See *id.*

75 See *id.*

76 See *supra* note 35 at 11-12.

77 See 18 USC § 207(a)(1).

78 Different provisions within 18 USC § 207 address this issue: (a) (1) (lifetime ban on matters where a former employee participated personally and substantially in a particular matter), (a)(2) (two-year ban where a former employee had particular matters under his or her official responsibility), (b) (one-year ban on aiding or advising another person where former employee participated in treaty and trade agreement negotiations), (c) (one-year cooling-off period for certain senior employees), (d) (one-year cooling-off period for very senior employees), (f) (one-year restriction on former senior or very senior employees representing and assisting foreign entities), and (l) (one-year restriction regarding contract advice by former assignees under the Information Technology Exchange Program).

79 See, generally 5 CFR Part 2641.

80 See 5 CFR § 2641.201(d)(1). ("Communication. A former employee makes a communication when he imparts or transmits information of any kind, including facts, opinions, ideas, questions or direction, to an employee of the United States, whether orally, in written correspondence, by electronic media, or by any other means. This includes only those communications with respect to which the former employee intends that the information conveyed will be attributed to himself, although it is not necessary that any employee of the United States actually recognize the former employee as the source of the information.")

81 See 5 CFR § 2641.201(d)(2). ("Appearance. A former employee

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makes an appearance when he is physically present before an employee of the United States, in either a formal or informal setting. Although an appearance also may be accompanied by certain communications, an appearance need not involve any communication by the former employee.”)

82 See generally 5 CFR Part 2641.

83 See 5 CFR § 2641.201(d)(3).

84 See 5 CFR § 2641.201(d) (example 4).

85 See *id.* (example 5).

86 See *id.*

87 See *id.*

88 See 5 CFR § 2641.201(e).

89 See *id.* at (e)(2) (example 1).

90 See *id.* at (e)(1) (example 1).

91 See *id.* at (e)(4).

92 See 18 USC § 207(a)(2).

93 See *id.*

94 The term “official responsibility” means “the direct administrative or operating authority, whether intermediate or final, and either exercisable alone or with others, and either personally or through subordinates, to approve, disapprove, or otherwise direct government action.” See 18 USC § 202(b).

95 “A matter is actually pending under an employee’s official responsibility if it has been referred to the employee for assignment or has been referred to or is under consideration by any person he supervises, including a subordinate. A matter remains pending even when it is not under “active” consideration. There is no requirement that the matter must have been pending under the employee’s official responsibility for a certain length of time.” See 5 CFR § 2641.202(j)(2).

96 See *id.* at (j)(6).

97 See *id.* at (j)(1).

98 See generally 18 USC § 207.

99 See *supra* note 6.

100 See generally 41 USC § 2104 as implemented by FAR 3.104, which among other things, discusses prohibitions on former officials’ acceptance of compensation from contractors if they had a particular role or performed specific tasks related to certain procurements.

101 See 41 USC § 2104(a)(1).

102 See 41 USC § 2104(a)(2).

103 See 41 USC § 2104(a)(3).

104 See 41 USC § 2104(b).

105 The apparent loophole is that “on paper” an employee may be paid by and work for an affiliate organization yet may have unprovable direct or indirect access or communication with the affiliate or division he is prohibited from working for during those two years. A search of the legislative history revealed that the particular language from 41 USC § 2104(b) was added to Pub. L. No. 104-106 110 Stat. 186 (1996) during Conference. However, there is no record of why or where it originated.

106 See 18 USC § 216; see also 41 USC § 2105.

107 See FAR 3.106-6(a). (“An official or former official of a federal agency who does not know whether he or she is or would be precluded by 41 USC 2104 (see 3.104-3(d)) from accepting compensation from a particular contractor may request advice from the appropriate agency ethics official before accepting such compensation [*emphasis added*].”) See also 5 CFR § 2641.105(a) (“Current or former employees or others who have questions about 18 USC 207 or about this part 2641 should seek advice from a designated agency ethics official or another agency ethics official [*emphasis added*].”) )

108 Procurement personnel must promptly report, in writing, to their supervisor and ethics officials, any employment contact with

a bidder or offeror in a DoD procurement valued at more than the simplified acquisition threshold, even when the employment contact is promptly rejected. See DFARS 203.171-3. (“... a “covered DoD official” who, within 2 years after leaving DoD service, expects to receive compensation from a DoD contractor, shall, prior to accepting such compensation, request a written opinion from the appropriate DoD ethics counselor regarding the applicability of post-employment restrictions to activities that the official may undertake on behalf of a contractor [*emphasis added*].”) “Covered DoD official” is defined in DFARS 203.171-2 redirecting to DFARS Clause 252.203-7000.

109 See generally 41 USC § 2104 for a list of the covered positions.

110 See *supra* note 101.

111 See FAR 15.303(b)(6). (“The source selection authority shall elect the source or sources whose proposal is the best value to the Government (10 USC § 2305(b)(4)(C) and 41 USC § 3703(c)).”) See also (b)(7) regarding the limited role the PCO serves when a source selection authority is appointed. See also Army Federal Acquisition Regulation Supplement (AFARS) 5115.303 regarding the Army’s policy on SSA appointments.

112 See DFARS 215.303(b)(2). (“For high-dollar value and other acquisitions, as prescribed by agency procedures, the source selection authority shall approve a source selection plan before the solicitation is issued [*emphasis added*].”) )

113 *But cf.* B- 412795.2 (Comp.Gen.), B- 412795.3, 2017 CPD ¶ 25, 2017 WL 394525. (“[T]he protester is incorrect that the contracting officer had no role in the evaluation of proposals. In this regard, the source selection plan stated that the contracting officer’s duties included the following: “Manage all business aspects of the acquisition and advise and assist the SSA in the execution of the responsibilities of the process, and work with the [technical evaluation team] Chairperson to ensure the evaluation is conducted in accordance with the evaluation criteria specified in the solicitation.”)

114 See FAR 15.308. (“While the SSA may use reports and analyses prepared by others, the source selection decision shall represent the SSA’s independent judgment.”)

115 Section M, Evaluation Factors for Award, is part of all Federal competitive solicitations. See, e.g., FAR 15.204-1(a). (“Contracting officers shall prepare solicitations and resulting contracts using the uniform contract format outlined in Table 15-1 of this subsection.”)

116 See FAR 15.305(a). (“An agency shall evaluate competitive proposals and then assess their relative qualities solely on the factors and subfactors specified in the solicitation ... The relative strengths, deficiencies, significant weaknesses, and risks supporting proposal evaluation shall be documented in the contract file.”)

117 See FAR 15.303(c).

118 The FAR also requires a separately appointed source selection advisory council (made up of several people) responsible for making an award recommendation to the SSA. See FAR 15.303(b)(5). (“The source selection authority shall [c]onsider the recommendations of advisory boards or panels (if any).”) See also AFARS Appendix AA—Army Source Selection Supplement (“Source Selection Advisory Council is a group of senior Government personnel, appointed by the SSA, that provides counsel during the source selection process, prepares the comparative analysis of the SSEB’s final evaluation results, and makes an award recommendation to the SSA.”)

119 See 41 USC § 2104(a)(1)-(3).

120 Such an approach would model after Canada. Although Canada takes a blanket approach, too—at least initially—by assuming that all executive employees (i.e., those ranked EX-01 and higher) pose a risk of conflict of interest, its rules allow individually affected employees to petition Canada’s Ethics Commissioner for a reduction to, or complete elimination of, the cooling-off period given their unique circumstance.

121 See *supra* note 77.

122 For example, the Army Contracting Command uses a business intelligence (BI) tool, which is one software module within the virtual contracting enterprise. This BI tool allows procurement officials to run various reports, including awarded contract actions valued at greater

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than \$10 million.

123 See, e.g., 18 USC § 207(a)(1)(C).

124 For example, Congress might consider modifying the Financial Disclosure Management (FDM) database to capture even more information. Presently, the FDM database is an online tool that streamlines employee's financial disclosure reports and the supervisor's review. See <https://www.fdm.army.mil/>.

125 Customarily, decision-making software tools help people map out all the possible alternatives to a decision, its cost, and chances of success or failure (or risk).

126 See *supra* note 124.

127 Ethics counselors generally have 30 days to provide an opinion. See, e.g., FAR 3.104-6(c). ("Within 30 days after receipt of a request containing complete information, or as soon thereafter as practicable, the agency ethics official should issue an opinion on whether the proposed conduct would violate 41 USC § 2104.")

128 See 18 USC § 208(d)(1).

129 "Freedom of Information Act: Frequently Asked Questions." Department of Justice, Office of Information Policy (OIP), [www.foia.gov/faq.html](http://www.foia.gov/faq.html). Accessed 26 Nov. 2021. ("There is no initial fee required to submit a FOIA request, but the FOIA does provide for the charging of certain types of fees in some instances. For a typical requester the agency can charge for the time it takes to search for records and for duplication of those records. There is usually no charge for the first two hours of search time or for the first 100 pages of duplication.")

130 See 5 USC § 5312.

131 See 5 USC § 5313.

132 "Public Financial Disclosure - Frequently Asked Questions." U.S. Office of Government Ethics, 3 May 2021, [www.oge.gov/web/OGEnsf/accessdocs\\_disclosure-faq](http://www.oge.gov/web/OGEnsf/accessdocs_disclosure-faq).

133 Currently, the OGE publicly posts the following ethics documents: Certificates of Divestiture, Certification of Ethics Agreement Compliance, Ethics Agreements, Periodic Transaction Reports, Pledge Waivers (E.O. 13989), and

Public Financial Disclosure Reports. See "Officials' Individual Disclosures Search Collection." U.S. Office of Government Ethics, [www.oge.gov/web/OGEnsf/Officials%20Individual%20Disclosures%20Search%20Collection](http://www.oge.gov/web/OGEnsf/Officials%20Individual%20Disclosures%20Search%20Collection). Accessed 28 Nov. 2021.

134 See 5 CFR § 2634.901(d). ("These reports and the information they contain are, accordingly, exempt from being released to the public, under exemptions 3(A) and (B), 4, and 6 of the Freedom of Information Act (FOIA), 5 USC 552(b)(3)(A) and (B), (b)(4), and (b)(6).")

135 See 5 CFR § 2641.105(e).

136 See New International Version. *Biblica*, <https://www.biblica.com/bible/niv/john/3/>, v. 20. Accessed 27 Nov. 2021.

137 See 18 USC § 208, which requires an employee to be disqualified ("recused") from a particular matter if the matter would have a direct and predictable effect on the employee's own financial interests or on certain financial interests that are treated as the employee's own, such as those of the employee's spouse or a prospective employer. The law acknowledges that in some cases, a waiver to these restrictions may be appropriate. Additionally, this suggestion models after Canada's ethics regime. Canada's Ethics Commissioner has the authority to waive or reduce cooling-off periods or exempt individuals. Upon doing so, he is required to publish his decision and the reasons in a public registry. See "Directive on Conflict of Interest." *Government of Canada | Policies, Directives, Standards and Guidelines*, § 4.2.20.11, Apr. 2020, [www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=32627&ion=html](http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=32627&ion=html).

138 See OGE's Annual Performance Report for FY 2020

([https://www.oge.gov/web/OGEnsf/0/741023D866C9F0D08525865C006A0040/\\$FILE/OGEnsf%20FY%202020%20Annual%20Performance%20Report%20\(Final\).pdf](https://www.oge.gov/web/OGEnsf/0/741023D866C9F0D08525865C006A0040/$FILE/OGEnsf%20FY%202020%20Annual%20Performance%20Report%20(Final).pdf)), p. 28.

139 See OGE's Results from the Annual Agency Ethics Program Questionnaire for CY20, p. 7. ([https://www.oge.gov/web/OGEnsf/0/BF327B2CC50A959D8525870C00663796/\\$FILE/AQ%20Summary%20](https://www.oge.gov/web/OGEnsf/0/BF327B2CC50A959D8525870C00663796/$FILE/AQ%20Summary%20)

[Report%208\\_31\\_21%20corrections.pdf](#)).

140 See *supra* note 138 at 36.

141 See 18 USC § 208(b)(1).

# FINANCIAL RATIO RELATIONSHIP TO DEFENSE CONTRACT COST OVERRUNS

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## Abstract

**PURPOSE:** Determine if financial ratio analysis is a useful risk metric in Department of Defense (DoD) acquisitions through statistical analysis.

**DESIGN/METHODOLOGY/APPROACH:** This study performs two-way contingency table analyses to test for dependence between a company's financial ratio at the time of contract start and cost performance at contract completion.

**FINDINGS:** Poor financial ratios at the time of contract start are related to cost overruns on that contract. Specifically, if the recent trends of a company's current ratio are below the company's long-term average current ratio, then there is an increased likelihood that the Cost Performance Index (CPI) at completion is greater than one.

**RESEARCH LIMITATIONS:** The dataset is limited to Air Force contracts with available Earned Value Management (EVM) data. Statistical analysis considers only pairwise correlation.

**ORIGINALITY/VALUE:** Despite the usefulness of financial ratio analysis, risk analysis in defense acquisitions largely ignores these indicators of company financial well-being. This research indicates that acquisition professionals may improve risk assessments of a cost overrun by analyzing company financial ratios at both the source selection phase and throughout the cost estimation process.

## Keywords

financial ratios, risk analysis, contract cost overruns, defense procurement

Contract Management Body of Knowledge® (CMBOK®)  
Competencies

2.0 Management  
3.0 Guiding Principles  
4.0 Pre-Award  
5.0 Award  
6.0 Post-Award



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## Financial Ratio Relationship to Defense Contract Cost Overruns

Department of Defense programs historically have poor records of cost growth (Younossi et al. 2007; Lorell, Leonard, and Doll 2015; U.S. Government Accountability Office 2019). Cost growth can be due to many possible reasons including requirement changes, increases in the quantity of systems to be acquired, externally imposed funding changes, DoD management decisions, and cost overruns (Bolten et al. 2008).

Cost overruns are a subset of cost growth whereby the actual cost of work exceeds the budgeted cost of the work as defined by the contract. These overruns are due to issues such as cost estimation errors, unanticipated technical difficulties, and general inability to conform to program schedules and cost baselines (Bolten et al. 2008). To further illustrate the difference, an increase in scope of a program would result in cost growth but not necessarily a cost overrun as the budgeted baseline would be adjusted to incorporate

the new scope (Christensen and Gordon 1998). Cost overruns can be quantified by EVM metrics such as the CPI and have been estimated to account for 30 to 40 percent of total cost growth (Drezner et al. 1993; Bolten et al. 2008).

This prevalence of cost overruns indicates a need to better assess the cost risk associated with DoD contracts. Specifically, analyzing the financial ratios of the companies competing for DoD business could be used to assess future contract cost performance. The hypothesis is that companies with poor financial ratios at the time of contract start will be more likely to incur a cost overrun (exhibited by a CPI of less than one) on that contract. The reasoning behind this hypothesis is twofold.

First, to be discussed later in the literature review, financial ratios have consistently been leading indicators of future company performance. Tailoring that evidence to this article, poor financial ratios indicate when companies will not be able to employ resources, such as personnel and equipment, to fulfill the con-

tractual requirements effectively and efficiently.

Second, poor financial ratios could indicate when companies may be willing to take on more risk by bidding lower on requests for proposals in order to get an influx of cashflow. This theory is tangentially corroborated by evidence in Austrian construction procurements where markups of winning bids were shown to decrease by 3.3 percentage points during an economic crisis (Gugler, Weichselbaumer and Zulehner 2015). The idea analogous to DoD contracts is that these smaller markups during times of financial distress present themselves as lower bid prices (or optimistic cost estimates), which then lead to an increase in the likelihood of a cost overrun.

Currently, the only financial consideration or requirement listed in the *Federal Acquisition Regulation (FAR)* with regard to source selection is that the company “have adequate financial resources to perform the contract, or the ability to obtain them” (9.104-1 [a]). A deeper analysis of financial health, though, may provide better insight into the likelihood of a cost overrun. Furthermore, quantifying this likelihood could be used by the DoD as part of the risk assessment in a source selection to better inform budgeting decisions.

Some public-private partnerships and DoD organizations have identified financial ratios as beneficial sources of information in making procurement decisions. However, they do not provide well-defined guidance or criteria for using the ratios (Zhang 2005; Overman and Williams 2021). More specifically, an examination of the literature revealed that no efforts have been undertaken to determine if there is a statistical relationship between company financial health and DoD contract performance.

Considerable research (discussed in the literature review) has been performed detailing the predictive abilities of certain financial ratios and their value in assessing company health. Additionally, researchers have assessed characteristics of DoD programs and contracts that are related to cost overruns (Arena, et al. 2006; Sullivan 2011; Ritschel 2014; Trudelle et al. 2017). This research attempts to merge these two ideas to determine if company financial ratios are related to contract cost overruns.

## Literature Review

When assessing a firm’s performance, publicly available financial information is often used to analyze a company’s value, health, and risk (Chen and Shimerda

1981; Lev and Gu 2016). More specifically, these indications of financial health and risk are calculated as ratios that measure the relationship between two or more components of a company’s financial statements. Financial ratios are used by banks, managers, and investors to assess the ability of a company to repay debts, evaluate and regulate business performance, and project future performance (Barnes 1987).

Although there is no complete consensus, it is generally agreed that financial ratios comprise four basic categories: liquidity, efficiency, solvency, and profitability.

Liquidity ratios have long been used as the key considerations in assessing eligibility for a loan or general creditworthiness (Lemk 1970). Efficiency ratios are commonly scrutinized by managers to assess how effectively their firm is utilizing their assets (Schmidgall and DeFranco 2016). Solvency ratios are used by managers and potential creditors alike to assess financial stability, long-term debt-paying capacity, and whether a debt restructure may be necessary (Simlai and Guha 2019). Profitability ratios are often seen as a measure of company performance demonstrating the firm’s ability to generate earnings against cost (Bordeianu 2020).

Summaries of these categories and examples of commonly use ratios are provided in Table 1.

Financial ratios from the liquidity category are a primary focus of this article based on theory and previous research. Potential problems with meeting short-term obligations (liquidity) are more likely to lead to a company taking risks to obtain cash flows and revenues rather than long-term obligations (solvency), asset turnover efficacy (efficiency), or the ability to generate a profit (profitability).

Previous research has shown the significance of liquidity ratios in predicting short-term future company success. Specifically, the current and quick ratio are effective predictors of profitability, competitiveness, share price, and program quality (Bereznicka 2014; Erdoğan, Erdoğan and Ömürbek 2015; Antczak, Horzela and Nowakowska-Krystman 2021).

Liquidity ratios capturing cash flows may also be useful in evaluating contract performance. The two ratios that use earnings before interest, taxes, depreciation, and amortization (EBITDA) as a proxy for cash flows are included due to their prevalence in the literature in predicting both company failure (Beaver 1966; Altman 1968; Chava and Jarrow 2004) and company success (Fadel and Parkinson 1978; Baranes et al. 2021).

**Table 1: Financial Ratio Categories and Common Ratio Equations**

Financial Ratio Categories	Examples
Liquidity – Ability to meet short-term obligations, or cash available for immediate use	Current Ratio** = $\frac{\text{Current Assets}}{\text{Current Liabilities}}$
	Quick Ratio** = $\frac{\text{Current Assets} - \text{Inventories}}{\text{Current Liabilities}}$
	Cash Flow to Debt** = $\frac{\text{EBITDA}^*}{\text{Total Assets}}$
	Cash Flow to Assets** = $\frac{\text{EBITDA}^*}{\text{Total Assets}}$
Efficiency (Turnover) – Ability to meet short and long-term obligations, or how effectively a firm is turning over inventory and accounts receivable.	Accounts-receivable Turnover = $\frac{\text{Net Credit Sales}}{\text{Average Accounts Receivable}}$
	Inventory Turnover = $\frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$
Solvency (Leverage) – Ability to meet long-term obligations	Debt to Equity = $\frac{\text{Total Debt}}{\text{Total Equity}}$
	Debt to Assets** = $\frac{\text{Total Debt}}{\text{Total Assets}}$
Profitability – Ability to generate a profit	Return on Assets** = $\frac{\text{Net Income}}{\text{Total Assets}}$
	Return on Equity = $\frac{\text{Net Income}}{\text{Shareholder's Equity}}$

- (Reale, 2011); \* Earnings before interest, taxes, depreciation, and amortization (EBITDA) is often used as a proxy to measure cash flow for a given period.; \*\* Financial ratios used in this research; Note: higher values are generally considered better for all ratios except the solvency ratios

Lastly, prominently used solvency and profitability ratios are included in this article as research has shown a connection between these ratios and future company performance. The debt to assets ratio is an indicator of the total liabilities of a company compared to its assets and was shown to be a significant predictor of future bankruptcy (Beaver 1966; Chava and Jarrow 2004) and profit margin (Erdoğan, Erdoğan and Ömürbek 2015). Return on assets has long been a commonly used measure of profitability and operating performance. This is consistent for both the defense industry (Department of Defense 1985; Zhong and Gribbin 2009) and non-defense industry (Brown and Caylor 2008).

Efficiency ratios are not included in this research for two reasons. First, limited research draws connections between efficiency ratios and measures of success. Second, efficiency ratio calculations would require averaging values from two or more different periods, rather than a single period’s end value (Goel 2016; Corporate Finance Institute 2022).

Averaging values would cause complications when

performing trend analysis in this research. Similarly, this research will use the end of period total assets in calculating return on assets (Department of Defense 1985; Baranes et al. 2021) even though the return on assets ratio is sometimes calculated using average total assets (Zhong and Gribbin 2009; Bereznicka 2014).

Based on the proceeding literature review, this paper analyzes how the following six common financial ratios are related to contract cost performance: current ratio, quick ratio, cash flow-to-debt ratio, cash flow-to-asset ratio, debt-to-asset ratio, and return on assets. Note, these ratios are annotated with a double red asterisk in Table 1.

**Methodology**

This article seeks to determine if there is a simple statistical relationship between two variables: company financial health (as measured by a financial ratio) at the time of contract start and whether there was a cost overrun at contract completion.

A cost overrun is determined by using the Earned Value Management System (EVMS), which provides comparisons between planned and completed work. Components of the EVMS involve tracking the completed work packages against the Performance Measurement Baseline (PMB) budgets. The value of the completed work in terms of this PMB budget is the earned value metric, otherwise known as the Budgeted Cost of Work Performed (BCWP) (DAU 2020). The Actual Cost of Work Performed (ACWP) is the cost actually incurred while accomplishing the work performed over a given period (Department of Defense 2019). The EVMS allows for the calculation of the Cost Performance Index (CPI), which is the ratio of the BCWP to the ACWP. Anytime the BCWP is less than the ACWP ( $CPI < 1$ ), the project is overbudget and a cost overrun has occurred (Christensen 1998).

Pairwise relationships (as opposed to multivariate relationships) are explored for several reasons. First, to the best of the authors' knowledge, the question has not been previously addressed. Therefore, determining if a simple correlation exists between the variables before delving into complex models is often a necessary and useful step in exploratory analysis.

Second, there is generally a large time lag between the two variables. This time lag is due to calculating financial ratios at contract start and using cost performance at contract completion. The median length of a contract (and thus time lag between variables) in this dataset is approximately 31 months.

Third, comparing company-wide financial ratios to individual contract performance could be difficult due to the relatively small contribution of any single contract to the company's business.

Finally, the concepts of financial health (and to a lesser extent cost performance) are not well defined and thus a coarser characterization of these variable would be appropriate. For these reasons, contingency tables are well suited to investigate this relationship.

Two-way contingency tables determine if two categorical variables are related (Brown and Benedetti 1977). Because the variables in this analysis are initially continuous, contract cost performance and financial health must be categorized as either good or bad.

First, categorizing contract cost performance is simply based on whether or not there was a cost overrun as measured by CPI. An effort with a final CPI less than one has incurred a cost overrun and is deemed to have poor cost performance; an effort with a CPI equal to/greater than one is defined to have good cost performance.

The contract data for this research is obtained through the EVM-CR database, which is managed by the Integrated Program Management (IPM) division of the Office of Acquisition Data and Analytics. This database reports information at the Contract Line-Item Number (CLIN) level—referred to as an effort in the EVM-CR. While EVM-CR provides information across all military services, the research is limited to only Air Force programs.

Furthermore, only completed efforts are analyzed for two reasons. First, this article is testing the theory that a company may be taking on greater risk of going over budget by bidding less than it typically would in times of financial distress. The effect of the company accepting more risk may not be apparent in the CPI data until the end of the effort.

Second, the true cost performance of the contract, and ultimately what affects the likelihood of the government overpaying, is fully realized only at the end of a contract. Previous research has shown that completed programs (compared to in-process programs) have a higher likelihood of cost growth relative to the original baseline (Arena et al. 2006). An effort with a completion percentage of 92.5 percent or greater is considered complete based on prior research that showed the final cost of a contract is accurately predicted when the contract is at this level of completion (Tracy and White 2011).

Also consistent with previous research analyzing CPI, the percentage complete is calculated by using the last available month's cumulative BCWP divided by the final Budget at Completion (BAC) (Christensen and Payne 1992).

Compared to CPI, categorizing financial ratios as healthy or unhealthy at contract start is a much more difficult task due to the lack of a commonly accepted definition of healthy. Therefore, this research uses a variety of different methods to categorize the company's health based on the following characteristics:

1. Quarterly versus annual data;
2. Using the single most recent time period just prior to contract start (referred to as point analysis) or multiple of the most recent time periods just prior to contract start (referred to as trend analysis) as a measure of the company's recent financial performance;
3. Using different benchmarks to compare the recent financial performance against.

**Table 2: Summary of Measures of Recent Financial Performance**

Trend Measurement of Financial Performance	Type of Data	# of Periods	Comment
Financial Ratio	quarter and annual	1	uses only the single most recent period
Mean Financial Ratio	quarter and annual	2	
Weighted Mean Financial Ratio	quarter and annual	2	most recent period is twice as important as the period before it (weights of 2/3 and 1/3, respectively)
Mean Financial Ratio	quarter	6	6 quarters chosen to ensure there is no overlap with annual time period. For example, if 4 periods were used for a contract that started in January, the 4 periods would cover the same period as a single annual period
Mean Financial Ratio	annual	5	
Weighted Mean Financial Ratio	quarter	6	each period's weight decreases by a fixed amount as it gets farther away from contract start (weights of 6/21, 5/21/, 4/21, 3/21, 2/21, 1/21, respectively)
Weighted Mean Financial Ratio	annual	5	each period's weight decreases by a fixed amount as it gets farther away from contract start (weights of 5/15, 4/15, 3/15, 2/15, 1/15, respectively)
Median Financial Ratio	quarter	6	median was calculated as the average of the third and fourth ordered values
Median Financial Ratio	annual	5	

First, financial health is analyzed using both quarterly and annual data. Most previous research uses only yearly data in studying the relationship between financial ratios and company success (Bereznicka 2014; Erdoğan, Erdoğan and Ömürbek 2015; Antczak, Horzela and Nowakowska-Krystman 2021). Conversely, this research will also analyze quarterly data to capture time periods closer to the time of contract start.

For example, if a contract were to start in December for a company with a fiscal year ending in December, financial ratios based on annual data are categorized as healthy or unhealthy based on the financials at the end of the previous year (11 months prior). In contrast,

using quarterly ratios for the same contract, the ratio is categorized based on the financial statements that closed out in September (just two months prior).

Additionally, some research has suggested that monthly (as opposed to yearly) observations of financial ratios better predict bankruptcy (Chava and Jarrow 2004).

While the recency that quarterly analysis provides has benefits, there are also disadvantages. A positive ratio based on the most recent quarterly financial statements could simply be an anomaly during a longer annual period of financial distress. Note, this disadvantage also applies when annual data is used.

**Table 3: Summary of Benchmarks Against Which to Compare the Measures of Recent Financial Performance**

Type of Analysis	Benchmark	# of Periods	Reason for Benchmark
Point	Mean Financial Ratio of the 4 Largest Companies	1	Industry average proxy
Point	Median Financial Ratio of the 4 Largest Companies	1	Industry average proxy (hedge against extreme values)
Point	Mean Financial Ratio of all Companies in the Sample	1	Industry average robustness check
Point	Median Financial Ratio of all Companies in the Sample	1	Industry average robustness check (hedge against extreme values)
Point and Trend	Mean Financial Ratio of Individual Company	Since Data Available	Long-term historical average of that company
Point and Trend	Median Financial Ratio of Individual Company	Since Data Available	Long-term historical average of that company (hedge against extreme values)
Point and Trend	Mean Financial Ratio of Individual Company	6 (quarter) 5 (annual)	Mid-term historical average of the individual company
Point and Trend	Median Financial Ratio of Individual Company	6 (quarter) 5 (annual)	Mid-term historical average of the individual company (hedge against extreme values)

To account for this potential issue, a trend analysis is also conducted on the data.

Trend analysis is defined as measuring the financial performance of a company using the average (or median) of a financial ratio over two or more recent time periods. The main disadvantage of point analysis is that the most recent period’s financial ratio may not fully capture the financial health of the company at the time of contract start.

In fact, longer-term trend analysis of financial ratios may be the best indicator of financial health. Previous research has shown that financial ratios can be predictors of company failure up to five years before a failure event (Beaver 1966). However, the most recent years were shown to be more predictive than those five years out. For this reason, weighted means are also used to incorporate the longer trends while emphasizing the most recent time periods’ ratios.

In addition to mean values, trend analysis is also conducted using the median values when more than the two most recent time periods are used. Median values as a measure of financial performance are included in order to diminish the effect of extreme values.

For both quarterly and annual data, six measures of recent company performance are used for each ratio to capture the health of the company in the time leading up to the start of the contract. Each of the measures use data that pre-dates contract performance starting with the period immediately preceding the contract start date. Table 2 summarizes these measures.

Since the ultimate requirement is the characterization of the recent financial performance measures listed in Table 2, benchmarks against which to compare this performance to must be established.

A benchmark provides a reference point to categorize a company’s financial performance leading up to the

**Table 4: Dataset Exclusions**

Category	Efforts Removed	Remaining Efforts	Contracts	Programs	Companies
Total Air Force Efforts in EVM-CR		384	151	75	26
Incomplete Efforts	188	196	87	53	18
Private Companies	31	169	73	43	8
Incomplete Historical Data of Company	4	165	69	39	7
<b>Final Data Set</b>		<b>165*</b>	<b>69</b>	<b>39</b>	<b>7*</b>

\* only 158 efforts and 6 companies for quarterly data (BAE Systems does not report quarterly financials)

start of a contract as either healthy or unhealthy. Just as  $CPI = 1$  is used as the breakpoint to categorize a contract as overrunning or underrunning costs, a similar benchmark must be defined for financial performance. Unlike CPI though, which has a natural breakpoint based on the definition of a cost overrun, many financial ratios do not have a well-defined breakpoint. Subsequently, several different benchmarks are studied.

A natural starting point is an industry average. Unfortunately, historical industry averages for the financial ratios analyzed are unavailable. As a result, proxies for industry averages are used as benchmarks.

Yet, some research has argued that industry average may not be a good metric of comparison due to the uniqueness of each company (Cowen and Hoffer 1982; Beaver and McNichols 2005). Therefore, additional benchmarks are also created using historical data of the particular company that performed the effort. Here, there is no clear time period to use to calculate a typical or average financial ratio of an individual company. For this reason, multiple historical time periods are used to calculate a benchmark for an individual company. Table 3 summarizes the benchmarks.

In Table 3, the four “Point” analysis benchmarks are proxies for the industry average and median at the time of contract start. Four of the largest defense companies (Boeing, Raytheon, Lockheed Martin,

and Northrup Grumman) are chosen as a proxy for the industry.

Use of the largest defense contractors is less arbitrary than choosing the ones that happened to be in this sample and can be easily repeated by researchers and acquisition professionals. Note, more than 90 percent of the efforts analyzed in this dataset were completed by these four companies. Thus, an unweighted average and median of all the companies in the sample (six for quarterly data and seven for annual data) are also included as benchmarks to provide robustness checks for the industry benchmarks.

In contrast to the industry benchmarks at the time of contract award, the four trend analysis benchmarks (bottom four rows in Table 3) are based only on the individual company’s historical financial performance. As each company has unique characteristics and product lines, this alternative set of benchmarks attempts to capture the recent health of the company relative to its bespoke performance over time. As mentioned previously, research indicates historical data of the individual company is a better benchmark than industry averages due to the unique properties of each company (Cowen and Hoffer 1982; Beaver and McNichols 2005).

Benchmarks are established based on the following timeframes: mid-term (six periods for quarterly and

**Table 5: Current Ratio Point Analysis – Significant Results**

Most Recent Quarter		
Benchmark	p-value	Odds Ratio
Median Quarterly Current Ratio of Individual Company Since Data Available (Prior to Recent Quarter)	0.0118*	(2.2586)
Most Recent Year		
Benchmark	p-value	Odds Ratio
Mean Yearly Current Ratio of Individual Company Since Data Available (Prior to Most Recent Year)	0.0013**	(2.7836)
Median Yearly Current Ratio of Individual Company Since Data Available (Prior to Recent Year)	0.0065**	(2.3636)

Odds Ratio is in parentheses; \* = Significant at  $\alpha = 0.05$ ; \*\* = Significant at  $\alpha = 0.01$

five periods for annual), and long term (more than six years). The range of available data used for the long-term historical average varies depending on the company, the financial ratio, and whether yearly or quarterly financial statements are used.

Quarterly historical data for the companies included in this analysis goes back to 1988, except for Lockheed Martin whose data goes back to 1994. Yearly historical data for the companies included in this analysis goes back to 1985, except for Lockheed Martin whose data goes back to 1994. The data used to establish the benchmarks begin with the quarter or year immediately preceding the oldest quarter or year used in determining the company’s recent performance.

The financial data for the companies in this analysis is obtained from the companies’ 10Ks compiled on Yahoo! Finance. The site contains historical data of both quarterly and annual financial statements (income statement, balance sheet, and cash flow statements) from all publicly traded companies. These financial statements are then used to calculate both quarterly and yearly historical financial ratios for all publicly traded companies with Air Force contracts in EVM-CR. Contracts performed by private companies are excluded from this analysis.

Additionally, BAE Systems is a British company and not required to report quarterly data. Since British reporting standards are not significantly different than the generally acceptable U.S. account principles

(Grossman, Smith and Tervo 2013), BAE Systems is included in the analysis using annual data. Table 4 summarizes the number of efforts and companies analyzed as well as the associated number of programs and contracts for reference purposes only.

Due to the relatively large samples sizes (n=158 for quarterly data and n=165 for annual data), the chi-squared test statistic is used for the contingency table analysis. This analysis is completed using a level of significance of 0.05. Therefore, results with a p-value of 0.05 or less are highlighted and discussed. In these instances, the null hypothesis is rejected in favor of the alternative (i.e., that good financial health is statistically related to contract cost underruns).

Furthermore, odds ratios and their associated confidence intervals are provided for these significant results. Odds ratios quantify the likelihood that an effort that experiences a cost overrun is associated with a company that has either good or poor financial health.

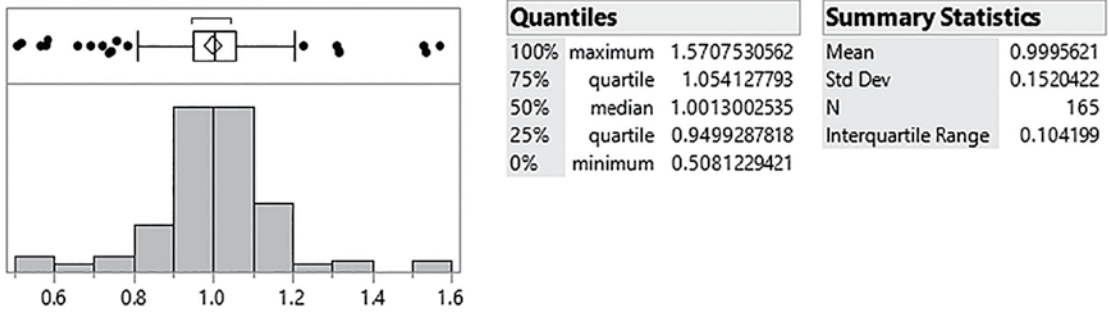
## Results

As previously discussed, the breakpoint for categorizing CPI at complete is one. This categorization results in a well-balanced grouping: 84 efforts are under budget and 81 efforts are over budget. Additionally, both the mean and median CPI of the efforts at complete are approximately one. See Figure 1.

This balanced categorization results in higher



**Figure 1: Distribution of CPI at Complete (if over 92.5 percent)**



expected counts; small expected cell counts could violate the assumptions of the chi-squared test. While some data points in the extrema may seem questionable from a practitioner’s viewpoint, a review of the data does not identify any anomalous inputs. Thus, the numerical outliers are included due to a lack of justification for removal. In addition, the CPIs are categorized so an extrema value would only affect the results if it changed category.

It is also important to note that these data points capture cost performance at the CLIN level rather than entire contracts. This could result in a larger range of CPI values than typically seen from a contract management perspective.

**Current Ratio Point Analysis Results**

A total of 16 contingency tables (i.e., eight quarterly and eight annual) are analyzed using only the current ratio of the most recent period prior to contract start compared against the eight benchmarks in Table 3. These significant results of these contingency tables are summarized in Table 5.

These results indicate a relationship between a company’s quarterly current ratio at the time of contract start and its cost performance on that contract. Specifically, if a company’s most recent quarterly current ratio at time of contract start is greater than the long-term median value of that company (i.e., a healthy current ratio), that contract is 2.26 times more likely to be under budget.

While this result is promising and consistent with theory, it did not hold across any other benchmarks. This limited result may be due to the most recent quarterly ratio not accurately capturing the financial health of the company. The most recent quarter could be too short a timeframe to analyze.

When point analysis is used on the current ratio

using annual data, the results indicate again that a healthy financial ratio (at contract start) relative to the company’s long-term performance is related to good cost performance on those contracts. Specifically, if a company’s most recent yearly current ratio is greater than its long-term mean and median, it is 2.78 and 2.36 times more likely to incur a cost underrun.

The fact that the relationship holds against both the long-term mean and median indicates that annual data smooths out some of the short-term fluctuations that could reduce a benchmark’s ability to accurately capture a normal financial ratio for a given company. Also, that the likelihood of a cost underrun is significant only when current financial performance is compared against the long-term benchmarks may be because truly good or bad performance is only evident with a sufficient amount of historical context.

As discussed, point analysis of financial ratios may not fully represent the current financial health of the company due to using only a single time period. Consider two different companies with a current ratio of 1.2 in the most recent year. If their current ratio in the second most recent year is 1.2 and 0.8 respectively, then considering only the most recent year does not capture the nature of this trend. Trend analysis of more than just the most recent period could be a better representation of current financial performance and is explored next.

**Current Ratio Trend Analysis Results**

A total of 20 contingency tables (i.e., 10 quarterly and 10 annual) are analyzed using trends of the recent periods’ current ratio prior to contract start compared against the bottom four benchmarks in Table 3.

In the trend analysis of the current ratio using quarterly data, three of the four measures of the recent trend of the companies’ quarterly current ratios are

**Table 6: Current Ratio Trend Analysis – Significant Results**

Measure of Recent Performance – Quarterly Data				
Benchmark	Mean – 6 Quarters	Weighted Mean - 6 Quarters	Mean - 2 Quarters	Weighted Mean - 2 Quarters
Company's Mean Current Ratio (since data available)	0.0410* (1.9301)		0.0185* (2.1412)	0.0177* (2.1484)
Company's Mean Current Ratio (6 quarters prior)			0.0284* (2.0305)	
Measure of Recent Performance – Annual Data				
Benchmark	Mean – 5 Years	Weighted Mean - 5 Years	Mean - 2 Years	Weighted Mean - 2 Years
Company's Mean Current Ratio (since data available)				0.0036** (2.5238)
Company's Mean Current Ratio (5 years prior)		0.0020** (2.7857)	0.0215* (2.1443)	0.0215* (2.1443)

Odds Ratio is in parentheses; \* = Significant at  $\alpha = 0.05$ ; \*\* = Significant at  $\alpha = 0.01$

significant when compared to the long-term mean of the company. The odds ratios are in the range of 1.93 to 2.14, indicating it is about twice as likely to underrun costs on a contract when a company had a healthy current ratio at contract start. This corroborates the aforementioned advantage of trend analysis over point analysis.

The recent trend of the current ratio may better capture the health of the company at contract start compared to just the most recent quarter. Also, the longer-term average of the company is again shown to be the better benchmark.

These results indicate a degree of robustness in how the trend is measured. It is a promising result for the practitioner. Conversely, there is a single significant result when the company's average current ratio over the last two quarters is compared to the prior six quarters. The fact there is only a single instance of significance indicates a lack of robustness to this benchmark. It also suggests six quarters may not provide a long enough

historical context. Results are summarized in Table 6.

Using annual data, the trend analysis also suggests that recent good health of a company's current ratio results in a higher likelihood of experiencing a cost underrun on contracts. The significant results from these analyses are also shown in Table 6.

In the case of annual data, the benchmark that is consistently significant as a measure of comparison is the mean of the five years prior to the time period used in the trend calculation. While this is a midterm time horizon, it could still effectively measure what is considered normal for the company in question. Considering the degree of consolidation that has occurred among defense contractors over the last 30 years (Mahoney, 2019), the five-year time horizon could better capture the evolving nature of a particular company.

Additionally, this benchmark is based on a fixed amount of time and the data is more easily obtained. Potential risk measures could be implemented using this benchmark without the need for acquiring

**Table 7: Aggregated Significant Results by Ratio and Type of Analysis**

Financial Ratio	Quarterly Point	Yearly Point	Quarterly Trends	Yearly Trends	Total
Current Ratio (Current Assets / Current Liabilities)	1 (0)	2 (2)	4 (0)	4 (1)	<b>11 (3)</b>
Quick Ratio ((Current Assets - Inventories) / Current Liabilities)	2 (0)	1 (0)	2 (0)	4 (1)	<b>9 (1)</b>
EBITDA / Total Debt	0	1 (0)	0	0	<b>1 (0)</b>
EBITDA / Total Assets	1 (0)	0	3 (0)	2 (0)	<b>6 (0)</b>
Total Debt / Total Assets	2 (0)	1 (0)	2 (0)	0	<b>5 (0)</b>
Return on Assets (Net Income/Total Assets)	0	0	0	1 (0)	<b>1 (0)</b>
<b>Total</b>	<b>6 (0)</b>	<b>5 (2)</b>	<b>11 (0)</b>	<b>11 (2)</b>	<b>33 (4)</b>

Number of significant results at  $\alpha = 0.05$ ; Number of significant results at an  $\alpha = 0.01$  in parentheses

extremely long-term historical financial statements from companies.

While the trend analysis using mean-based benchmarks identifies significant relationships, the benchmarks using median are not effective. The median of the six most recent quarters is not shown to be significant when compared to the median of the six prior quarters or the long-term median of the company. Additionally, the median value of the yearly current ratio of the five most recent years is not significant against either the long-term median of the current ratio of the company or the median of the five years prior to the most recent five years.

A possible explanation could be that trends using mean values are better indicators of company health. This is because the influence of extreme financial ratio values provides important context for what is a truly healthy or unhealthy value. For example, if a company had a very poor current ratio in one or two of the six most recent quarters, that could increase the likelihood of a cost overrun. Median values of the six most recent quarters would not capture the extent of these poor values.

For the yearly median trend analysis, the lack of significance may also be because the most recent five years is too long to accurately capture the current

financial health of a company at any given time. This idea is corroborated by the results that the most significant time periods in Table 6 are the mean of the two most recent years and the *weighted* mean of the five most recent years.

Although the current ratio was expected to best represent a company’s financial health at the start of a contract, the number of significant results is a surprising outcome. Due to the large scope difference between a company’s entire business portfolio and a single contract, there was a degree of uncertainty regarding whether these relations would be revealed in statistically significant relationships. This analysis indicates there is a systematic relationship between a company’s financial ratio at the time of contract start and the likelihood of cost overrun. Albeit this relationship is sensitive to the way the current ratio is used to categorize financial health.

**Synthesized Contingency Table Significant Results**

While the current ratio is shown to be the most widely significant financial ratio in predicting the likelihood of a cost overrun, analysis of the other five ratios provide further insight into the best ways to categorize financial health. The significant results for each are

**Table 8: Aggregated Significant Results by Ratio and Type of Analysis: Any CPI > 1 With OTB Removed**

Financial Ratio	Quarterly Point	Yearly Point	Quarterly Trends	Yearly Trends	Total
Current Ratio (Current Assets / Current Liabilities)	1 (0)	2 (2)	4 (0)	4 (2)	<b>11 (4)</b>
Quick Ratio ((Current Assets - Inventories) / Current Liabilities)	2 (0)	0	3 (0)	5 (2)	<b>10 (2)</b>
EBITDA / Total Debt	0	1 (0)	0	1 (0)	<b>2 (0)</b>
EBITDA / Total Assets	0	0	1 (0)	2 (0)	<b>3 (0)</b>
Total Debt / Total Assets	1 (0)	1 (0)	0	2 (0)	<b>4 (0)</b>
Return on Assets (Net Income/Total Assets)	0	1 (0)	0	1 (0)	<b>2 (0)</b>
<b>Total</b>	<b>4 (0)</b>	<b>5 (2)</b>	<b>8 (0)</b>	<b>15 (4)</b>	<b>32 (6)</b>

Number of significant results at  $\alpha = 0.05$ ; Number of significant results at an  $\alpha = 0.01$  in parentheses

summarized in Table 7.

These aggregated results support the need for defense personnel to consider financial ratios as a risk measure. The 33 significant results were shown to be in the direction hypothesized. A financial ratio better than the benchmark was more likely to be correlated with a CPI greater than one. Thus, there is evidence supporting the conclusion that financial ratio analysis could be effective in assessing risk in DoD programs.

The quick ratio is shown to be the second-best ratio in predicting cost overruns. However, in this dataset, both the quick ratio and the debt-to-assets ratio using annual data are strongly correlated with the current ratio (correlation of 0.56 and 0.36, respectively). This raises the common question about which financial ratios are important on their own, and which ones simply coincide with the more appropriate ratios (Chen and Shimerda 1981; Barnes 1987; Pindado and Rodrigues 2004).

Interestingly, the EBITDA to asset ratio, the EBITDA to debt ratio, and the return on assets ratio also give significant results despite not being correlated with the current ratio. For these reasons, cost performance may be related to these ratios (especially the EBITDA

to asset ratio) through other factors.

As hypothesized, trend analysis does better capture the financial health of a company at the time of contract start than just the most recent time period's financial ratio. Analyzing both quarterly and yearly trends seem to be useful, although yearly trends have more highly significant results.

Finally, both long-term and medium-term benchmarks are effective measures for comparison. In fact, long-term trends are better suited as a comparison for quarterly trends, while medium-term trends are better suited as a comparison for yearly trends. This issue may be because the calculation for medium-term benchmarks for quarterly ratios (six quarters) is too short a time period to capture a useful average or nominal value for a company. Long-term trends are also shown to be the better benchmark for both quarterly and yearly point analysis.

**Sensitivity Analysis—OTB Concerns**

While the sensitivity of categorizing financial health and cost performance has been discussed, a final sensitivity analysis is conducted due to a commonly used process within EVM. The EVM dataset includes

**Table 9: Aggregated Significant Results by Ratio and Type of Analysis: Any OTB Considered a Cost Overrun**

Financial Ratio	Quarterly Point	Yearly Point	Quarterly Trends	Yearly Trends	Total
Current Ratio (Current Assets / Current Liabilities)	1 (0)	2 (2)	5 (0)	6 (4)	14 (6)
Quick Ratio ((Current Assets - Inventories) / Current Liabilities)	1 (0)	2 (1)	3 (0)	6 (2)	12 (3)
EBITDA / Total Debt	1 (0)	1 (0)	0	1 (0)	3 (0)
EBITDA / Total Assets	1 (0)	0	1 (0)	2 (0)	4 (0)
Total Debt / Total Assets	1 (0)	1 (0)	0	3 (0)	5 (0)
Return on Assets (Net Income/Total Assets)	0	1 (0)	0	3 (0)	4 (0)
<b>Total</b>	<b>5 (0)</b>	<b>7 (3)</b>	<b>9 (0)</b>	<b>21 (6)</b>	<b>42 (9)</b>

Number of significant results at  $\alpha = 0.05$ ; Number of significant results at an  $\alpha = 0.01$  in parentheses

27 efforts (16 percent of the total) that incurred an Over Target Baseline (OTB).

An OTB occurs when there is no change in the work scope, but the original budget is deemed unfeasible for the remaining work to be completed. To implement an OTB, the contractor must perform a lengthy process to adjust the Performance Measurement Baseline and reset the cost variance to zero (Cukr 2001). This is done to provide new goals for management purposes such as setting a realistic baseline and being able to better evaluate future work (DAU 2021).

Of the 27 efforts in the final dataset with an OTB, 21 still incurred a cost overrun even after the rebaseline. However, six efforts obtained an OTB and completed the effort with a cost underrun. The inclusion of the six OTB efforts calls into question how they are categorized. The initial analysis did not acknowledge that these OTBs occurred and categorized the cost performance according to the new baseline. However, the impact of these OTBs should be addressed and is assessed in two ways: first, removing the six efforts with an OTB and a cost underrun and second, recategorizing those six efforts as a cost overrun.

Table 8 shows the significant results when the six efforts are removed, and Table 9 shows the significant

results when recategorizing the six efforts. The results are generally consistent with the initial analysis. Both of these robustness checks corroborate the conclusions drawn from the original analysis. The current ratio is the best indicator of company health in regard to likelihood of cost overrun.

Additionally, calculating recent yearly trends of these ratios are the best indicators of current financial health. Meanwhile, the long-term average ratio of the company in question is the best benchmark for comparison. In fact, recategorizing those efforts with OTBs that obtained a CPI at complete of greater than one led to an increase in the number of significant results. This is even more promising, albeit expected, as an OTB inherently indicates a cost overrun occurred at some point in the contract.

### Conclusions

This article has shown a correlation between a company's financial health at the time of contract start and the likelihood of cost overruns. Companies had a higher likelihood of performing well on efforts when their financial ratios were healthy. The implication of these results indicates that acquisition professionals should

incorporate analysis on companies' financial ratios as a risk metric. This metric can be used by practitioners as a decision-making support tool in source selections and throughout the cost-estimation process.

These findings reveal that the current ratio is an especially important indicator in a company's ability to perform on a contract from a cost performance standpoint. When analyzing the current ratio of a company, practitioners should incorporate means (both weighted and non-weighted) of the most recent two years and most recent five years to capture the trends of that company's financial health.

The importance of these trends is especially shown in the results in Table 9. Comparing these recent trends to the long-term (and medium-term) average of that individual company should provide an effective gauge of their current financial health. These efforts will provide a risk metric that can be used to better assess the likelihood of a cost overrun.

To further assess risk, a practitioner could also determine the weighted mean of the recent quick ratio and EBITDA to asset ratio against the long-term benchmarks of that company. If multiple of these comparisons indicate that the company's financial health is poor relative to historical trends, there may be a greater risk that the company incurs a cost overrun on that contract.

This is likely due to two reasons. First, the company may be accepting more risk of going over budget in order to obtain more earnings and cash flows. Second, the company in relatively poor financial health may not have the resources (employees, equipment, etc.) to deploy in order to perform well on the contracts it undertakes. In either case, the analysts can use these indicators of increased cost risk to inform the decision making, budgeting, and contract management processes.

This article's contribution to the literature is to provide statistical evidence that financial ratios of companies at the start of an Air Force contract are related to a lagged-cost performance on that contract.

This paper also illustrates several topics that warrant further investigation. First, examining the other military services (which develop different types of systems with a different range of companies) would be useful given that previous research has shown a lack of significant differences in cost growth among the services (Younossi et al. 2007; Trudelle et al. 2017).

Second, future research could determine if financial health is related to other measures of contract perfor-

mance such as schedule performance index (SPI) or earned schedule (Lipke 2003).

Third, these schedule measures, as well as CPI, could be analyzed at times prior to contract completion to determine if they are viable metrics with which to help assess risk while managing a contract.

Fourth, future research could attempt to calculate division-specific financial ratios and their relation to cost overruns from efforts in that division.

Finally, a multivariate analysis that controls for other factors (such as program length, type of program, technology readiness levels, company size, and macro-economic factors) could be used to assess the partial effect financial ratios have on contract cost performance.

Ultimately, these future research efforts would provide a better understanding of ways financial ratio analysis can be used in acquisition and program management to better assess risk in DoD programs.

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# MULTILATERAL COMPETITIVE NEGOTIATIONS FOR THE BENEFIT OF TECHNOLOGICAL INNOVATION

BY ANISA SPOTSWOOD, MSL

## Abstract

**PURPOSE:** The objective of this paper is to discuss how the *FAR*, EU Directives, UNCITRAL Model Law, and the World Bank's Procurement Framework, through the phenomenon of convergence, utilize the method of multilateral competitive negotiations ("competitive negotiations;" "competitive dialogue;" "request for proposal with dialogue") to help stimulate technological innovation and the achievement of best value/value for money.

**DESIGN/METHODOLOGY/APPROACH:** The design states the importance of emerging technology and identifies multilateral competitive negotiations as a preferred approach to achieve innovation and best value, as compared with the international preference for low price bidding ("open tendering" in Europe and "sealed bidding" in the United States).

**FINDINGS:** This paper addresses the advantages (flexibility, innovation, best value) and perceived disadvantages (cost, time, risk of corruption) of using multilateral competitive negotiations. It takes the position that the benefits outweigh the costs.

**ORIGINALITY/VALUE:** Combining discussion of multilateral competitive negotiations and low price bidding for the increasingly important benefit of emerging technology and innovation, the paper provides evidence of public procurement regimes converging toward more flexible procurement methods.

## Key Words

government procurement, competitive negotiations, competitive dialogue, request for proposal with dialogue, technological innovation, emerging technology, value for money, best value

## Contract Management Body of Knowledge® (CMBOK®) Competencies

3.0 Guiding Principles

4.0 Pre-Award

5.0 Award

6.0 Post-Award



## About the Author

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## Multilateral Competitive Negotiations for the Benefit of Technological Innovation

### Section 1: Introduction

The government procurement method of multilateral competitive negotiations, which creates the opportunity for procuring entities to enter into a dialogue with each offeror, helps stimulate emerging technology and innovation. Comparing the U.S. *Federal Acquisition Regulation (FAR)*, the EU Directives, the World Bank's Procurement Framework, and United Nations Commission on International Trade Law (UNCITRAL) Model Law, this paper explores how this mechanism supports competitive innovation. It is compared with the international preference for low price bidding ("open tendering" in Europe and "sealed bidding" in the United States).

Foundational to this discussion is an explanation of emerging technology, which flourishes in markets where barriers to entry are reduced, information is shared, and seller resources are optimally allocated to serve buyers in the best way possible.<sup>1</sup>

Modern public procurement is a key instrument in spurring the development of innovative goods or services, often called technology-driven solutions, that extend beyond public services delivery. It also drives "market competitiveness, resource efficiency, and responsible industry practices."<sup>2</sup> Technology offers government an opportunity to navigate the complexity of problems it is attempting to solve, but only if it can access and use it effectively.<sup>3</sup>

Procurement approaches that provide flexibility are the future of government's technology buying.<sup>4</sup> This flexibility is achieved in part through input from a broad range of industry perspectives. Solutions to the procuring entity's stated requirements are explored rather than having the buyer ask for a narrowly defined or specific solution.<sup>5</sup>

This paper proceeds in the following sections:

- Section 2 explores the definition of emerging

technology and the benefits of technological proficiency.

- Section 3 explains multilateral competitive negotiations as a flexible procurement procedure. It allows a contracting authority to discuss an assignment with potential offerors, as compared with low price bidding procedures without discussion.
- Section 4 discusses the phenomenon of convergence where procurement procedures evolve in parallel toward a common set of best practices.
- Section 5 outlines the regulatory paths of the U.S. *FAR*, EU Directives, World Bank's Procurement Framework, and UNCITRAL Model Law as paths to innovation.
- Section 6 explains the principles of value for money that look beyond initial purchase price to consider factors like quality and long-lasting technologies.
- Section 7 explores the potential drawbacks to multilateral competitive negotiations, such as the cost, length of time, and risk of corruption.
- Section 8 provides the conclusion that despite the drawbacks, multilateral competitive negotiations are essential to technological innovation and value for money.

### Section 2: Technological Innovation

The future of public services relies on leaders who promote innovation and harness the pace of emerging technologies. There is growing interest in "emerging technologies," yet there is not a strong consensus on how to define the term. The term is typically reserved for technologies that create significant social or economic effects. In the interest of this paper, emerging technology will mean something that requires innovative solutions, possesses fast growth, prominent impact, and uncertainty and ambiguity.<sup>6</sup>

Emerging technology contributes to innovation

by recognizing new technological possibilities to be introduced into production and consumption<sup>7</sup> and plays a prominent role in the growth of leading industrial economies.<sup>8</sup> The fourth industrial revolution is underway as the world experiences a period of rapid technological change that continues to accelerate.<sup>9</sup>

The technologies being developed have the potential to fundamentally reshape government workforces and change how governments make policy and deliver public services.<sup>10</sup> These technologies can be physical—such as drones, wearable technology that is integrated into clothing and other accessories, and robots. They may take the form of advanced computer software that handles data in powerful new ways, including new ways to securely store and share information.<sup>11</sup>

Oftentimes, procuring entities do not know the potential uses of emerging technologies unless they collaborate with partners in industry and academia. One way to achieve this collaboration is through multilateral competitive negotiations, where procuring entities invite offerors to bring their ideas to the table.

The benefits of technological proficiency are far reaching as technological dominance becomes an increasingly important issue between major world powers. This has played out recently in U.S.-China relations. Technological engagement has shifted to competition shaped by “cutting-edge technologies, such as artificial intelligence, big data analytics, robotics, and other advances that are mostly invented and produced in the commercial sector.”<sup>12</sup>

Modern procurement leaders are using the flexibility of multilateral competitive negotiations as a mechanism to identify emerging developments and match unrealized market innovation with unmet service needs.<sup>13</sup>

### Section 3: Multilateral Competitive Negotiations

Multilateral competitive negotiations include participation by three or more parties,<sup>14</sup> where the purchasing agency enters into a “dialogue” with each offeror, either in writing or orally, and the offerors compete by presenting diverse solutions. The dialogue serves as an interrogation tactic to determine the merits of each vendor’s respective solution.<sup>15</sup>

Multilateral competitive negotiations go by different regulatory terms based on the procuring entity. Yet, in each regime we find a flexible procurement procedure that allows the contracting authority to discuss an assignment with potential offerors, thereby creating a window into emerging technologies.

The EU Directives and World Bank’s Procurement Framework use the term “competitive dialogue.” The *FAR* includes a more liberal form of competitive dialogue called “competitive negotiations,”<sup>16</sup> and the UNCITRAL Model Law calls this method “request for proposal with dialogue.” The generation of more flexible procurement, less restrictive procedures, and the permissibility of award criteria that replaces price with total cost of ownership is underway.<sup>17</sup>

Compare this method with a conventional alternative where the procuring entity closely prescribes the requirements without discussion and with an award to the lowest bidder. This alternative is called “sealed bidding” in the *FAR* and “open tendering” in the EU Directives, UNCITRAL Model Law and World Bank’s Procurement Framework, and has historically been the most broadly accepted form of procurement. There is, however, an option for two-step sealed bidding/two-stage tendering, when adequate specifications are not available, that combines elements of sealed bidding and negotiation.<sup>18</sup> It does allow for discussion in step one, yet the award is made to the lowest priced responsive bidder in step two. Under these circumstances, the government “may be compelled to turn down proposals that, though slightly higher priced, are markedly superior technically to the lowest-cost proposal.”<sup>19</sup>

The two-step procedure, distinct from multilateral competitive negotiations, does not allow for tradeoffs between technical performance and cost in either step. It may result in a product that is not the best or most cost-effective overall.<sup>20</sup> These shortfalls are what drives convergence among the United States, Europe, and others toward a common set of best practices and in pursuit of best value.

### Section 4: Convergence

Convergence is not so much a process as it is an evolution. Public procurement characteristics are becoming more or less common, yet increasingly similar, among different procurement regimes. As the form and function of procurement systems become more analogous, practices evolve toward a best value approach and generally best outcome. This is orchestrated in part through multilateral competitive negotiations, at least for now.

Convergence helps explain why over roughly the last decade the EU, World Bank and UNCITRAL are making increasing allowances for multilateral competitive negotiations, despite resisting it histori-

cally, with the United States as the leader. This more flexible method is voluntarily adopted by various regimes seeking a better procurement approach for technical issues and innovative solutions. In turn, there is less reliance on awards based on low price alone, as detailed specifications hinder technological innovation and best value.

Innovation is not achieved well under open tendering or sealed bidding because these methods are too rigid to capture emerging technology, which explains the emergence of a more flexible approach. Convergence is not achieved through enforcement, but instead through natural force and pressures leading to the adoption of similar best practices. Although this process occurs organically, a coordinated effort allows convergence to occur more quickly and allows governments to enhance their understanding of each other's policies and the corresponding benefits.

## Section 5: Regulatory Paths and Innovation

### *U.S. FAR*

In the United States, competitive negotiation is available under FAR Part 15 titled "Contracting by Negotiation." In 1997, the rules underwent a major rewrite that played a critical role in enabling complex federal procurements.<sup>21</sup> The *FAR* Council described the Part 15 rewrite as something that "reengineers the processes used to contract by negotiation," and the expressed goal was "to infuse innovative techniques into the source selection process, simplify the process [...] and facilitate the acquisition of best value."<sup>22</sup> As a frontrunner of this procurement method, negotiated proposals ("competitive negotiation") are now the leading method in federal procurements.<sup>23</sup>

FAR Part 15 has two sections worth highlighting: FAR 15.201 "Exchanges with industry before receipt of proposals" and FAR 15.306 "Exchanges with offerors after receipt of proposals." The negotiations themselves are defined as "discussions," and per FAR 15.201, "exchanges of information among all interested parties, from the earliest identification of a requirement through receipt of proposals, is encouraged." It goes on to describe the purpose of these exchanges as improving the "understanding of government requirements and industry capabilities," and "allowing potential offerors to judge whether or how they can satisfy the government's requirements."<sup>24</sup>

When the procuring entity clearly articulates its needs (not the solution), it has a better chance of those

needs being met. This may include stating a need where a solution has not yet been developed, prompting the offerors to innovate to achieve the desired end. This leads to the emergence of new solutions and technologies.

FAR 15.306 provides contracting officers with broad discretion to enter into three forms of exchanges with offerors after receipt of proposals in negotiated procurements: clarifications, communications, and discussions, as well as the discretion not to communicate.<sup>25</sup> These exchanges give the procuring entity the best opportunity to select the most advantageous solutions. The exchanges allow the offeror an opportunity to better understand the extent to which its proposed approach meets or does not meet the procuring entities need.<sup>26</sup>

This finetuning helps with innovation and best value, because offerors can make improvements to their proposals to better meet the solicitation requirements and provide the best value possible.<sup>27</sup> Meanwhile, the adoption of technologies by government, and its own internal process of innovation, may give rise to new forms of technology that have applications and benefits for government, the wider public sector and the private sector.<sup>28</sup>

### *EU Directives*

Competitive negotiation is called "competitive dialogue" in the EU system and will be referred to as such in the discussion of the EU Directives as well as the World Bank (UNCITRAL refers to this method as "request for proposals with dialogue").

Competitive Dialogue was created by the EU Directive 2004/18/EC as a new and more flexible solution for contracting officials wanting to award contracts for complex undertakings and innovation. However, in December 2011, the EU Commission launched a proposal to amend the EU Directive and modernize its procurement system. This resulted three years later in the revised EU Directive 2014/24/EU. Among the most significant changes were lifting restrictions, and making it easier for the contracting authority to use competitive dialogue.<sup>29</sup>

Competitive dialogue was meant to assist procuring entities with complex contracts where they knew the outcome they wanted to achieve, but had difficulty assessing what the market could offer in terms of technical solutions. EU Directive 2014/24/EU Article 26(4)(a) provides that competitive dialogue can be used "with regard to works, supplies or services fulfilling one or more of the following criteria:

- (i) The needs of the Contracting Authority cannot be met without adaptation of readily available solutions;
- (ii) They include design or innovative solutions;
- (iii) The contract cannot be awarded without prior negotiations because of specific circumstances related to the nature, the complexity or the legal and financial makeup or because of the risks attaching to them;
- (iv) The technical specifications cannot be established with sufficient precision by the contracting authority with reference to a standard, European Technical Assessment, common technical specification or technical reference within the meaning of points 2 to 5 of Annex VII.<sup>30</sup>

In the European Union, the procuring entity submits a request for participation that sets out its needs, it engages in discussions, and once it identifies solutions capable of meeting its needs, it requests final tenders. The tendering process has two phases: a dialogue phase and a bidding phase. The dialogue phase may be parsed into several subphases to narrow down the solutions discussed, while simultaneously helping the procuring entity define its requirements.

Meanwhile, suppliers avoid wasting time preparing proposals that do not meet the procuring entities needs. Although the suppliers are selected by the procuring entity, there must be at least three to ensure sufficient competition.<sup>31</sup>

Among EU procurement procedures, the use of competitive dialogue is still low. Although the possibility for innovation and complex undertakings is available via competitive dialogue, the European Commission reported that from 2009 to 2015, it represented less than 1 percent of total number of awards, compared with 84 percent conducted through open procedure.<sup>32</sup>

### *UNCITRAL Model Law*

The UNCITRAL Model Law was finalized in 2011, and designed to share best practices and build capacity through overlapping procurement methods and convergence. Chapter V of the UNCITRAL Model Law sets out the procedures for “request for proposals with dialogue” under Article 49.<sup>33</sup> Request for proposals with dialogue are to be used when it is not feasible for the procuring entity to determine and describe its needs with precision and the procuring entity assesses that interaction with suppliers or contractors is necessary.<sup>34</sup>

Chapter V procedures under Article 49 are used

as an alternative to open tendering.<sup>35</sup> The dialogue is an interaction between the procuring entity and the offeror on technical, quality, performance, and financial characteristics of its proposals within the framework of a transparent and structured process.<sup>36</sup> The procedure involves two stages. First, the procuring entity issues a solicitation that includes minimum technical requirements. In the second stage, offerors engage in dialogue and have an equal opportunity to participate, yet there are no consecutive discussions.<sup>37</sup>

Ultimately, the process results in a request for best and final offers (BAFOs), which can present a variety of technical solutions. Then the procuring entity determines whether they meet its needs.

The UNCITRAL Model Law’s Guide to Enactment indicates this procurement method has proved productive for procurement of advanced technologies where the market is developing rapidly. It is also successful when the cost of not engaging in dialogue with suppliers or contractors is high.<sup>38</sup>

However, under normal circumstances, the UNCITRAL Model Law mandates ‘open tendering’ as the default procurement method. It also permits the use of alternative procurement methods for special needs when open tendering may not be appropriate.<sup>39</sup>

For example, the procuring entity may determine that it is not possible to formulate a single technical solution in which request for proposals with dialogue is preferable. This means the UNCITRAL Model Law operates under the assumption that low-priced open tendering is the best approach. This includes closely prescribed requirements and a strict prohibition against negotiations between the procuring entity and offerors. It reflects the UNCITRAL Model Law’s greater goal of objectivity and transparency above value for money and innovation.

### *World Bank’s Procurement Framework*

In July 2016, the World Bank significantly reformed its Procurement Framework. The World Bank had come under intense criticism internationally for focusing on low price over value for money. The bank also realized it was falling out of step with emerging best practices.<sup>40</sup> Foremost among the changes was the adoption of competitive dialogue as a procurement method. This aligned with the multilateral competitive negotiations of the UNCITRAL Model Law, EU Directives, and the *FAR*. It was a significant change, as the World Bank had previously opposed the use of competitive dialogue.<sup>41</sup>

As a financier, the World Bank does not approve procurement methods. Instead, it has an indirect role as a monitor. It also publishes guidance, such as the World Bank's Procurement Framework, to shape how procurement is done on bank-financed projects.<sup>42</sup> The procurement community relies on this guidance for World Bank projects, but also more broadly. Competitive dialogue is used for complex or innovative procurements where multiple solutions may be possible and discussion is required to develop these solutions.

In the World Bank's Procurement Framework, competitive dialogue is "an interactive multistage selection arrangement that allows for dynamic engagement with Proposers."<sup>43</sup> Procuring entities may "choose among technologically advanced solutions [that] do not lend themselves to low-price bidding against a defined set of requirements."<sup>44</sup> This is a dramatic change from the classic tradition of open tendering.

As with the other regimes, the World Bank's Procurement Framework's method includes dialogue between the purchasing entity and each offeror to achieve unique solutions to the buyer's needs. The aim is to identify the "means" best suited to satisfy the procuring entity's "needs" and requirements, which include technical, financial, and legal aspects. Competitive dialogue "should be used to determine the range of options available for delivering them," and the dialogue "continues until 'needs' and 'means' are matched."<sup>45</sup>

While the World Bank is marketed as keeping in step with emerging best practices that promote "innovation, sustainable procurement, strategic use of technology, and expanding the data analytics frontier,"<sup>46</sup> this important tool of competitive dialogue is not used to the same extent as open procedures. The World Bank does competitive dialogue exceptionally well, yet they do not favor it. Instead, the framework is still highly prescriptive. The criteria is based largely on the World Bank's perceived risk as a fiduciary for its shareholders rather than on the project risks for the borrower or citizens.<sup>47</sup>

These interests come into conflict as the World Bank retains its right to prior review when borrowers use what they consider "risky methods," such as competitive dialogue.<sup>48</sup> In 2018, the World Bank was asked "how many competitive dialogue procurement process have been completed in Bank financed projects?" The World Bank responded, "according to information provided by borrowers through Systematic Tracking of Exchanges in Procurement (STEP), no competitive dialogue procurement process has taken place so far."<sup>49</sup>

## Section 6: Value for Money / Best Value

The primary objective of multilateral competitive negotiations is to select the offer representing the best value to the government. This is known as "value for money" in the EU Directives and World Bank's Procurement Framework, "best value" in the FAR, and "economy" in the UNCITRAL Model Law. These procuring entities are looking beyond higher initial purchase prices to consider other factors like high-quality and long-lasting technologies to build smart and sustainable infrastructure.

For the European Union and World Bank, competitive dialogue helps achieve the principles of value for money by balancing quality and price as opposed to procurement based exclusively on low price. The World Bank's Procurement Framework recommends that requests for proposals (RFPs) support value for money solutions, such as designing "specifications that promote outcomes [...] for greater innovation, sustainability and flexibility."<sup>50</sup>

Unlike open tendering, competitive dialogue allows the government to choose among a diverse range of potential solutions with a greater likelihood of finding a solution that fits the government's requirements. Such technologically advanced options increase the probability that the awardee's solution will be a better fit for the government's actual requirements.<sup>51</sup>

In the U.S. federal system, the concept of best value is discussed under Contracting by Negotiation in FAR Part 15.306(d)(2), "the primary objective of discussions is to maximize the government's ability to obtain best value, based on the requirement and the evaluation factors set forth in the solicitation."<sup>52</sup> Best value similarly implies that bids are awarded based on the overall best value for money, which includes total cost of ownership and life-cycle costs, and may not be the lowest cost bid.

When government procurement delivers products that are difficult for users to navigate, or upholds legacy systems that create ongoing operating costs, it costs money in the form of life-cycle costs. The risks associated with low-cost procurements, such as sealed bidding, include low-quality solutions that shorten the useful life of an investment and lead to a higher long-term total cost of ownership.<sup>53</sup>

The UNCITRAL Model Law references "economy" in procurement, as "an optimal relationship between the price paid and other factors, which include the quality of the subject matter of the procurement."<sup>54</sup> The UNCITRAL Model Law allows the procuring

entity the “flexibility to determine what will constitute value for money in each procurement and how to conduct the procurement procedure in a way that will achieve it.”<sup>55</sup>

Market innovation must be harnessed in a manner that secures value for money. That includes purchasing high-quality solutions that lead to lower overall costs over the useful life of things like technology or equipment.<sup>56</sup>

## Section 7: Drawbacks

Competitive dialogue is considered relatively new, which is probably why it is still used modestly in the other procurement regimes. However, the lack of use alone is not the only drawback. Despite the numerous benefits of multilateral competitive negotiations for diverse emerging technologies, there are perceived disadvantages.

When negotiations are conducted, they are both an integral part of the source selection process and frequently the basis for protests. The process is also “longer and more complex than other selection methods [and] involves more cost to both the borrower and the proposers [...] and may require additional legal, financial and/or procurement experts to support implementation of the procurement process.”<sup>57</sup>

Procurement costs will likely be higher for both the procuring entity and offerors given the time and resources for conversing, as they continually revise and enhance the requirements and potential solutions. These costs are not recoverable, especially for bidders who do not receive an award. Multilateral competitive negotiations are generally accepted as more costly compared to traditional procurement methods.<sup>58</sup>

Additionally, multilateral competitive negotiations almost certainly increase reputational risk for both the offeror and the government. The risk is attributed to offerors bribing government officials who are managing the negotiations. Their exchanges “typically take place privately, and open an array of opportunities for corruption.” This may explain the longstanding opposition to competitive dialogue by the European Union, UNCITRAL, and the World Bank.<sup>59</sup>

Concerns about corruption are of paramount importance in public procurement. The United Nations Convention Against Corruption (UNCAC), an international anti-corruption multilateral treaty adopted by 189 states parties that include the European Union and United States, describes corruption as “an insidious plague that has a wide range of corrosive effects

on societies” that “undermines democracy and the rule of law.”<sup>60</sup>

The objectives of the UNCITRAL Model Law also underlie Article 9(1) of the UNCAC that requires each party to take the “necessary steps to establish appropriate systems of procurement, based on transparency, competition, and objective criteria in decision-making, that are effective, inter alia, in preventing corruption.”<sup>61</sup> The World Bank’s new Procurement Framework “builds on the Bank’s increasing concerns about corruption.”<sup>62</sup> In 2021, the United States added the U.S. Strategy on Countering Corruption as a core national security interest.

The private discussions inherent in multilateral competitive negotiations are arguably less transparent than alternative procurement methods and more susceptible to corruption. Corruption takes many forms, yet one of the most prominent forms found in procurement is bribery of public officials for the obtainment of public procurement contracts.<sup>63</sup>

Private discussions in multilateral competitive negotiations increase the level of discretion in the decision-making process on behalf of the contracting official. They also lower the degree of transparency thereby increasing the risk of corruption overall. Ensuring that the exchange of information between the government and contractors is consistent with procurement integrity requirements is top of mind for the global procurement community. Public procurement regimes throughout the world are enhancing measures to prevent and fight corruption with the assistance of various anti-corruption institutions. These anti-corruption measures are critical to the evolution of multilateral competitive negotiations. Otherwise, it would be impossible to use this riskier procurement method without effective anti-corruption protections.<sup>64</sup>

Even so, corruption is faced on all fronts including low-price bidding. It is impossible to prevent abuse by entities determined to act unlawfully.<sup>65</sup> Efforts to make the process foolproof, such as “prohibiting negotiations with suppliers altogether—are likely to hamper the possibilities for effective procurement.”<sup>66</sup>

Risks must be weighed against the flexibility provided under multilateral competitive negotiations to consider new and innovative technological solutions and auxiliary benefits. Otherwise, the proliferation of rules and zero tolerance will stifle innovation and hamper the incorporation of other variables including life-cycle costing.<sup>67</sup> Although fraud and corruption management are top concerns, there must be space

to evaluate the tradeoffs between integrity risks and the resulting performance of the acquisition.

Taking measures to control risk is necessary. Yet, taken too far, risk avoidance can stifle innovation and creativity.

## Conclusion

Despite the risks and perceived disadvantages, the stakes for emerging technology are high. If governments want to embrace the rapid technological changes taking place, they must adopt more flexible procurement methods and more frequently. Procuring entities cannot be expected to know the potential uses of emerging technology, especially given the ambiguity inherent in a fast-growing market, without industry discussion. The key element of multilateral competitive negotiations, as compared with sealed bidding or open tendering, is the increased flexibility—one approach stimulates emerging technology and the other constrains it. Open tendering is counter to innovation, because innovation cannot be achieved when the requirements are narrowly defined and the procurement method is too rigid.

Multilateral competitive negotiations may initially be a more expensive procurement approach, but this does not make it more expensive overall. As discussed with life-cycle cost, high-quality technology solutions harness market innovation by securing value for money and total cost of ownership. The greater risk is the cost of not engaging in dialogue with offerors to discover the diverse range of complex technological solutions.

Multilateral competitive negotiations achieve unique solutions to buyers' needs. They create economic efficiency by aiming to identify the means best suited to satisfy the procuring entity's needs and requirements. Multilateral competitive negotiations "should be used to determine the range of options available for delivering them," and the dialogue should "continue until 'needs' and 'means' are matched."<sup>68</sup>

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