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### **Price Analysis on Commercial Item Purchases within the Department of the Navy**

5 February 2015

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## Abstract

The objective of this project is to research current pricing memorandums and determine whether the use of price analysis techniques and pricing memorandums can improve acquisition-pricing outcomes. The purpose of the research is to explore the efficacy of the government's current documentation of price analysis information. The intent is to diagnose the price analysis techniques that are being utilized and documented in the contracting file, and to explore potential improvements. This analysis is based on a review of a sample size of contract files and a personnel survey at a Department of Defense contracting office.

**Keywords:** pricing, contract pricing, pricing memos, price reasonableness, market research, commercial items, price analysis



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Disclaimer: The views represented in this report are those of the author and do not reflect the official policy position of the Navy, the Department of Defense, or the federal government.



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## LIST OF ACRONYMS AND ABBREVIATIONS

AAP	Acquisition Advisory Panel
BCM	Business Clearance Memorandum
CPRG	Contract Pricing Reference Guides
CRB	Contract Review Board
DAU	Defense Acquisition University
DAWIA	Defense Acquisition Workforce Improvement Act
DCAA	Defense Contract Audit Agency
DFARS	Defense Federal Acquisition Regulation Supplement
DOD	Department of Defense
DODIG	Department of Defense Inspector General
DPAP	Office of the Deputy Director of Defense Procurement and Acquisition Policy for Cost, Pricing, and Finance
FAR	Federal Acquisition Regulation
GAO	Government Accountability Office
IGCE	Independent Government Cost Estimate
PALT	Procurement Acquisition Lead Time
PR	Purchase Request
QASA	Quality Assurance Surveillance Assessment
SAT	Simplified Acquisition Threshold
USD (AT&L)	Under Secretary of Defense for Acquisitions, Technology, and Logistics
USSOCOM	U.S. Special Operations Command



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# Introduction

## Purpose

The Federal Acquisition Streamlining Act of 1994 significantly changed government procurement practices. This act expanded the definitions of a commercial item and a non-developmental item, which in turn allowed vendors to avoid submission of certified cost and pricing data for commercial items in response to government contracting solicitations (Rumbaugh, 2010). One impact of this change is that contracting professionals must now look at market forces to establish price reasonableness for commercial item procurements. The importance of market research and price analysis methods has increased because of this change (Gera & Maddox, 2013). Since this change was made, the Department of Defense Inspector General (DODIG) has issued multiple reports that are critical of contracting officers. Contracting officers have consistently failed to adequately justify price reasonableness, or they have failed to provide documentation that explains their price reasonableness determination. The purpose of this research is to explore which price analysis techniques are being utilized and documented in the contracting file, and to explore potential improvements within Department of Defense (DOD) contracts. This project is a continuation of research that has previously been accomplished on DOD contracts (Redfern, Nelson, & White, 2013; Gera & Maddox, 2013).

## Scope and Limitations

This project focuses on price reasonableness determinations within the DOD. In this report, two of the authors reviewed contract files at a DOD contracting office that specializes in commercial supply and service procurements.

In the contract file review, we verified whether the price reasonableness determinations have been performed and documented properly in accordance with the Federal Acquisition Regulation (FAR). The contract file assessment included a review of end-user documentation, including the independent government cost estimate (IGCE) and market research, and whether the documentation is substantiated and reflects the applicable source(s) of data. The file assessment also included a review of contracting officers', contract specialists', and price analysts' documentation, including identification of the procurement type (e.g., supply, service, or construction), the FAR contracting procedures utilized, and the justification used for the price reasonableness determination.



In addition, we designed and distributed a personnel survey to contracting personnel. The collection of responses enabled the researchers to ascertain the contracting personnel's perceived level of ability as it relates to completing price reasonableness determinations. The data collected from the personnel surveys was also used to make comparisons with the data collected during the contract file reviews . 50 contracts files were reviewed. The personnel survey was anonymous and voluntary; therefore, it is possible that not all eligible participants responded. We received feedback from 24 personnel.

## Project Organization

In this current chapter, *Introduction*, we introduce our project by identifying the purpose, the scope and limitations of the project, objectives of the project, and research questions to be addressed. In the chapter *Literature Review* we present a background for price reasonableness determinations, we identify significant Inspector General and research reports and applicable articles that form a basis for this research. The chapter *Methodology* outlines the file review and survey methodology used for data collection, followed by the chapter *Contract File Review and Personnel Survey Data* in which we present how we collected data, we list the findings and results collected from that data. Finally, the final chapter *Conclusion* we present observations, analysis and a summary of recommendations tied to our research questions.

## Objective and Research Questions

The objective of this project is to determine whether better use of price analysis techniques can improve DOD contract pricing. The intent is to diagnose both strengths and weaknesses and to explore potential improvements utilizing a contract file review and a personnel survey. In this project, we addressed the following research questions:

- Do pricing memorandums deviate from Federal Acquisition Regulation (FAR) , Defense Federal Acquisition Regulation Supplement (DFARS) requirements and DFARS Procedures, Guidance and Information (PGI) procedures?
- Do pricing memorandums document the type of price analysis used in pricing formulation? What price analysis methods are being used?
- Do pricing memorandums refer to market research information or to IGCE information?



- If deviations in pricing memorandums exist, do they differ by the same characteristics and/or by unsimilar characteristics?
- What are the most predominant price analysis techniques exercised in purchasing supplies versus services?
- Why do pricing memorandums lack sufficient justifications and supporting information? What challenges are present in executing price analysis?

## Literature Review

In this chapter, we offer an overview of several reports and educational materials directed toward price reasonableness determinations. Section I focuses on the DODIG, the Government Accountability Office (GAO), and other reports specific to the subject. Section II provides an overview of previous research in this area. Section III provides a background on price reasonableness determinations and how they should be conducted. Section IV provides a conclusion to the literature review that summarizes the major findings of the reports, research, and guidance.

### Section 1: Summary of Inspector General and Other Reports

Many government audit reports since 2001 have documented problems in determining fair and reasonable prices within the Department of Defense (DOD) and federal contracting generally. Our summary indicates that many of the problems identified in government reports have occurred repeatedly, that they are consistent among many federal agencies, and that they stem from some of the same problems. Commercial item determinations, an overworked contracting workforce, increased requirements, lack of knowledge of market forces, and the lack of adequate pricing information are consistent themes throughout the literature (Acquisition Advisory Panel [AAP], 2007).

In 2001, a DODIG report directed toward the undersecretary of defense for acquisitions, technology, and logistics (USD[AT&L]) provided an overview of the state of price reasonableness determinations within the DOD. This report audited 145 contracts covering 18 DOD contracting agencies, including the Army, Navy, Air Force, and three defense agencies. The audit determined that, of the 145 contracting actions, 93 were for non-commercial items, and 52 were for commercial items, of which 103 were sole-source actions and 43 were competitive one-bid actions (DODIG, 2001). The audit found that 32% of these contracting actions lacked a valid exception for obtaining certified cost or pricing data and that 86%



lacked proper price reasonableness documentation in the contracting file (DODIG, 2001). The report further stated that contracting officers did not properly challenge commercial-item designations, did not analyze price lists, and did not verify prices from prior contracts before using them as a basis for current contract pricing. The report recommended that the DOD address workload levels, require price trend analyses, and emphasize procedures for dealing with vendors who refuse to provide certified cost and pricing data (DODIG, 2001). It further recommended that agencies utilize the Defense Contract Audit Agency for assistance in price reasonableness determinations (DODIG, 2001).

In 2006, a DODIG report to the USD(AT&L) documented faulty price reasonableness determination techniques in Department of the Air Force procurements of non-competitive spare parts for weapons systems. The audit was primarily focused on an \$860 million, nine-year, strategic sourcing initiative agreement with Hamilton Sundstrand Corporation. The agency found that the Air Force negotiating team did not properly determine items as commercial. They had utilized contract pricing that had been previously determined to be not fair and reasonable to determine price reasonableness on current procurements. The auditors determined that, on average, pricing was 28% higher than previous contract prices when adjusted for inflation. The audit recommended the following: The DOD should not grant commercial item exceptions to cost or pricing data if the contractor does not have sufficient commercial sales of the item, the DOD should not use previous prices unless reasonableness of those previous prices can be established, and the DOD should not enter into strategic partnerships with contractors who are not willing to provide cost or pricing data when requested (DODIG, 2006).

In 2006, a GAO report to the House and Senate Armed Services Committee pointed out DOD vulnerabilities in several areas, including a capable acquisition workforce and adequate pricing. The report stated that the contracting workforce has conditions that subject it to fraud, waste, and abuse. The following influences these conditions, according to the GAO (2006):

- The overall contracting workload has increased.
- The demand for contract surveillance continues to grow because of the DOD's increasing reliance on contractors for services.
- The DOD is making greater use of alternative contracting approaches, which offer the benefits of improved efficiency and timeliness for acquiring goods and services.



- Many contracting personnel are due to retire in the next few years, taking with them a wealth of experience and capabilities. (p. 8)

The GAO (2006) report discussed DOD vulnerabilities associated with pricing, pointing out misclassification of commercial items, failure to obtain adequate pricing information, and non-competitive contracting actions that were potential causes of waste.

In 2007, the AAP issued a report that documented the overall state of federal procurement since the acquisition reforms of the 1980s and 1990s. The adequacy of the contracting workforce is one of the areas that the panel discussed in detail. The panel noted that a qualified workforce should also have the quantitative skills required to effectively perform its duties. The demands of the workforce have grown, with a 63% increase in spending since 2001. Workforce reductions of the 1990s have contributed to an aging workforce with the most qualified people on the verge of retirement. There are very few people in the workforce with five to 15 years' experience. The panel recommended that the government take measures to identify knowledge gaps and aggressively recruit qualified applicants to fill those gaps. The panel advised a robust recruitment process for entry-level positions with the goal of sustaining a long-term acquisition workforce. The panel further stated that when limited competition (or no competition) exists, contracting officers should have greater flexibility in requesting pricing information from offerors (AAP, 2007).

In 2009, a DODIG report to the USD(AT&L) reviewed 15 contracts issued by the U.S. Special Operations Command (USSOCOM) with a value of \$2.4 billion. The audit found that in 26% of those contracts USSOCOM did not adequately document negotiated prices, and contracts were missing all documentation establishing price reasonableness. The audit recommended that USSOCOM contracting personnel comply with FAR regulations, retain documents utilized for price reasonableness determinations in the contracting file, and review and sign memorandums prior to making awards (DODIG, 2009b).

In 2010, a DODIG report to the USD(AT&L) reviewed U.S. Army and Air Force contracts for advisory assistance services in support of search and rescue operations. The report stated that officials did not allow for a sufficient amount of time for contractors to prepare proposals. Officials also failed to complete an adequate price analysis, independent estimates, and a technical analysis. The audit recommended that the services establish reasonable solicitation response times, to document the methodology used to prepare government estimates, and to document price reasonableness determinations (DODIG, 2010).





In 2011, a DODIG report to the naval inspector general reviewed 14 contracts valued at \$27.5 million and found that seven contracting actions valued at \$18.9 million did not properly conduct or document price reasonableness determinations. The report stated that contracting officers based price reasonableness determinations on incorrect calculations and unsupported IGCEs, and failed to document the contracting file (DODIG, 2011). The report further stated that when an IGCE was utilized, the contracting office requested that the surveyors adjust the IGCE when the contractor's proposed prices were significantly different from the IGCE, improving the initial IGCE, which had an average price difference of 40% to an average price difference of 10% (DODIG, 2011). The audit recommended that contracting officers conduct and document price reasonableness determinations according to the FAR, and that surveyors review the methodology for developing IGCEs and include sufficient documentation for estimates and changes (DODIG, 2011).

In 2013, a DODIG report to the Director Defense Logistics Agency reviewed 35 valued at \$27.2 million and determined the contracting officers did not obtain fair and reasonable prices. The report found that contracting officers did not review contractor purchase histories or review pricing on long-term contracts contributing to excess prices valued at \$13.7 million (DODIG, 2013). The audit recommended that contracting officers review purchase order histories and periodically review pricing on long-term sole-source contracts (DODIG, 2013).

In July of 2014, another DODIG report to the Director Defense Logistics Agency reviewed the prices for sole source commercial parts on a contract with Bell Helicopter. The DODIG found that the contracting officer did not sufficiently determine whether prices were fair and reasonable for sole sources spare parts negotiated for helicopters like the Army OH-58 pictured in Figure 1. The report found that contracting officer used a previous purchase price without determining the reasonableness of that previous price and did not sufficiently review the contractor's sales data in a noncompetitive environment. DLA potentially overpaid Bell Helicopter \$9 million and may overpay as much as 2.6 million on future orders under this contract. (DODIG, 2014). The audit recommended that DLA establish a quality assurance process that reviews whether contracting officers verify and document that sufficient analysis was performed to determine if the previous price was justified in accordance with DFARS PGI 215.403-3(4). In addition the audit required the specific contracting officer on the Bell Helicopter contract to perform a sales analysis and, if necessary, a cost analysis on the remaining sole source spare parts on said contract (DODIG, 2014). The report was also directed to the Director of





Defense Pricing. The report recommended that the Director of Defense Pricing issue guidance to establish a percentage of commercial sales that is sufficient to determine fair and reasonable prices when items are being acquired on a sole-source contract and market-based prices are used. The guidance should also require contracting officers to request information “other than certified cost or pricing data” to include cost data if sales data are not sufficient. (DODIG, 2014).



Figure 1: Army OH-58D Source: <http://www.bellhelicopter.com>

It is interesting that Maddox and Gera made similar recommendations in their October 2013 report. They suggested that DOD implement oversight procedures to ensure the price analysis is documented and reviewed for completeness and adequacy and that local activities include internal controls to make sure price analysis is being done properly. In addition they both forecasted that when price analysis is done poorly, it could cost us thousands, if not millions in higher prices such as the \$9 million overpay found by the DODIG in 2014. (pg. 51)

## Section II: Summary of Previous Research

Previous research has been conducted on this subject outside of government audit reports. This section summarizes some of the conclusions and recommendations that have been made for price reasonableness determinations in two different reports. Both of the previous reports included findings from a sample of 90 reviewed DOD contract files and the results from a small “personnel survey” of DOD contracting personnel.



Redfern et al. (2013) revealed several points of interest. The price analysis conducted seemed to be dictated by the market research reports. Pricing memorandums were present in a majority of the contract files inspected (91%); however, variance was found in the amount of detail each memorandum contained. The researchers noticed the frequent use of price lists, catalogs, or advertisements as a basis for price reasonableness; however, the sample size prevented them from inferring that a larger sample size would or would not contain other justifications for price reasonableness. Competition, in this case defined as more than one quote, was found in only 20 of the files inspected. The researchers could not identify whether small business set-asides prevented the appearance of adequate competition. Market research documentation was found in 55% of the files; however, it was used as a basis for price reasonableness in only 13% of the purchases. The research noted that apparently most market research documentation in the files were provided by the end user, or customer, and did not appear to be verified by the contracting officer. This led the researchers to believe that even when the market research was used; it was not a sufficient basis to determine price reasonableness. Previous contract prices appeared to be the most utilized method for determinations. The survey responses that the researchers received indicated that the workload and time constraints were the reason behind the use of previous contract prices, even if those previous prices did not contain sufficient price reasonableness determinations themselves. The survey results from supervisors also indicated that manpower shortages are considered the main reason for a lack of thoroughness in procurement actions, which is corroborated by many of the government agency audits discussed above (Redfern et al., 2013).

Gera and Maddox (2013) took an independent look at the same data utilized in the Redfern research report, 2013. Several findings and recommendations in this report provided a sufficient understanding of the problems with price reasonableness determinations. Gera and Maddox (2013) reported the following:

- Prices found “reasonable on previous purchases” was the most highly utilized method of determining price reasonableness. There are several risks involved in comparing previous prices paid. One is the determination that the original price was reasonable. Second, and more importantly, is that the previous price needs to be adjusted to make an apple-to-apple comparison to the offered price. (p. 47)
- Analysts do not complete market research reports on a regular basis. (p. 49)



- If pricing memorandums are inaccurate, then it is possible that the price reasonableness determination has not been completed correctly. (p. 51)
- For services there appears to be less competition, so there is more dependence on previous prices and IGCEs to make price comparisons. (p. 55)

The findings listed here are consistent with the findings in government audit reports and do not appear to be surprising revelations.

However, Gera and Maddox (2013) provided new recommendations that should be considered by DOD policy-makers as follows:

- Previous prices is a preferred method of price analysis, but just using a previous price as a price comparison is only one part of the analysis. Further determination of whether the original price was reasonable is necessary to include any adjustments for quantity/escalation to make the prices comparable. (p. 48)
- The authors recommended that FAR Part 10 require that pricing be discussed in the market research reports and that market research be required, or at least an abbreviated form of market research be done, on commercial purchases under the simplified acquisition threshold (SAT). (p. 54)
- The DOD should implement oversight procedures to ensure that price analysis is documented and reviewed for completeness and adequacy even for purchases less than the SAT. (p. 48)
- More emphasis on the proper storage of documents and standardized electronic filing of contract pricing documents within DOD is required. (p. 60)
- The DOD should require more in-depth price analysis and quantitative techniques that can be used, like indexing and regression. (pp. 62–63)
- Buying services is different than buying supplies; that also means that services and supplies are different when it comes to pricing. A step should be added to the acquisition guidebook that focuses just on the pricing of services. (pp. 58–59)
- Government activities should increase the importance of IGCEs. The policy-makers need to appreciate how much IGCEs are being used



and how guidance will assist analysts in determining what they “should pay” and hopefully giving them the ammunition to negotiate better prices. (p. 62)

- Recent reviews by the DODIG/GAO (2001–2011) concluded that new pricing skill sets have not always been present in the purchase of commercial items. The DOD needs to look again at how analysts are trained for commercial item purchases, particularly when using simplified acquisition procedures (SAP). Based on the thousands of actions that are done, FAR Part 13 does not provide enough details or guidance on how to appropriately conduct price analysis. (pp. 65–66)

### Section III: Price Reasonableness Determinations

The FAR set forth several policies that govern cost and pricing data in federal procurements. Several guides are available that contracting officers can utilize to properly determine price reasonableness. This section provides a summary of those regulations that are frequently cited in audit reports, and a summary of some of the guides available to contracting officers.

The FAR 15.402 (2014) Pricing Policy states that contracting officers shall purchase supplies and services from responsible sources at fair and reasonable prices; shall obtain certified cost or pricing data when required, along with data other than certified cost or pricing data as necessary to establish a fair and reasonable price; or, when certified cost or pricing data are not required, shall obtain data other than certified cost or pricing data as necessary to establish a fair and reasonable price. This policy is the basis for the requirement to obtain certified cost or pricing data.

The FAR 15.403 (2014) Prohibition on Obtaining Certified Cost or Pricing Data provides exceptions that prohibit contracting officers from obtaining the data when acquisitions fall at or below the SAT, when acquisitions are based on adequate price competition, when acquisitions are based on prices set by law or regulation, when a commercial item is being acquired, when a waiver has been granted, or when modifying a contract or subcontract for commercial items.



The following is an excerpt from most relative section of the FAR that applies to this report on price analysis is FAR 15.404-19(b) which is entitled, *Price analysis for commercial and non-commercial items*:

(1) Price analysis is the process of examining and evaluating a proposed price without evaluating its separate cost elements and proposed profit. Unless an exception from the requirement to obtain certified cost or pricing data applies under [15.403-1](#)(b)(1) or (b)(2), at a minimum, the contracting officer shall obtain appropriate data, without certification, on the prices at which the same or similar items have previously been sold and determine if the data is adequate for evaluating the reasonableness of the price. Price analysis may include evaluating data other than certified cost or pricing data obtained from the offeror or contractor when there is no other means for determining a fair and reasonable price. Contracting officers shall obtain data other than certified cost or pricing data from the offeror or contractor for all acquisitions (including commercial item acquisitions), if that is the contracting officer's only means to determine the price to be fair and reasonable.

(2) The Government may use various price analysis techniques and procedures to ensure a fair and reasonable price. Examples of such techniques include, but are not limited to the following:

(i) Comparison of proposed prices received in response to the solicitation. Normally, adequate price competition establishes a fair and reasonable price (see [15.403-1](#)(c)(1)(i)).

(ii) Comparison of proposed prices to historical prices paid, whether by the Government or other than the Government, for the same or similar items. This method may be used for commercial items including those "of a type" or requiring minor modifications.

(A) The prior price must be a valid basis for comparison. If there has been a significant time lapse between the last acquisition and the present one, if the terms and conditions of the acquisition are significantly different, or if the reasonableness of the prior price is uncertain, then the prior price may not be a valid basis for comparison.



(B) The prior price must be adjusted to account for materially differing terms and conditions, quantities and market and economic factors. For similar items, the contracting officer must also adjust the prior price to account for material differences between the similar item and the item being procured.

(C) Expert technical advice should be obtained when analyzing similar items, or commercial items that are “of a type” or requiring minor modifications, to ascertain the magnitude of changes required and to assist in pricing the required changes.

(iii) Use of parametric estimating methods/application of rough yardsticks (such as dollars per pound or per horsepower, or other units) to highlight significant inconsistencies that warrant additional pricing inquiry.

(iv) Comparison with competitive published price lists, published market prices of commodities, similar indexes, and discount or rebate arrangements.

(v) Comparison of proposed prices with independent Government cost estimates.

(vi) Comparison of proposed prices with prices obtained through market research for the same or similar items.

(vii) Analysis of data other than certified cost or pricing data (as defined at [2.101](#)) provided by the offeror.

(3) The first two techniques at [15.404-1\(b\)\(2\)](#) are the preferred techniques. However, if the contracting officer determines that information on competitive proposed prices or previous contract prices is not available or is insufficient to determine that the price is fair and reasonable, the contracting officer may use any of the remaining techniques as appropriate to the circumstances applicable to the acquisition.

In accordance with DFARS/PGI 215.404-1(b) i, ii and iii, price analysis should generally be performed on supplies or services that are not subject to the requirements for certified cost or pricing data. In documenting price analysis, contracting personell can sometimes obtain available commercial sales, published catalogs or prices, etc., through market research and can provide a basis for determining if the proposed prices are fair and reasonable. However, when there is





no commercial sales and marketing data available to determine price reasonableness. This becomes a huge problem when buying supplies or services that have been determined to be commercial, but have only been “offered for sale” or purchased on a sole source basis with no prior commercial sales upon which to rely. In such cases, the contracting officer must require the offeror to submit whatever cost data is needed to determine price reasonableness.

Further, the following procedures shall be adhered to by the CO when executing the price analysis techniques at FAR 15.404-1(b)(2):

(A) When the contracting officer is relying on data obtained from sources other than the offeror, the contracting officer must obtain and document sufficient data to confirm that previous prices paid by the Government were based on a thorough price and/or cost analysis.

(B) When purchasing sole source commercial items, the contracting officer must request non-Government sales data for quantities comparable to those in the solicitation. In addition, if there have not been any non-Government sales, “data other than certified cost or pricing data” shall be obtained and a price or cost analysis performed as required.

(C) When the contracting officer has to obtain “data other than certified cost or pricing data” from the offeror because there is not sufficient data from other sources to determine if prices are fair and reasonable, the DFARS/PGI states that the contracting officer must use business judgment to determine the level of data needed from the offeror, but must ensure that the data is sufficient for making a reasonableness determination.

- i. For example, if the offeror can validate significant sales of the item to non- Government entities, that may be all the data the CO needs. On the other hand, there may be no non-Government sales and the contracting officer may be required to obtain cost data, and should then perform cost analysis.

*Contract Pricing Reference Guides* (CPRGs; 2012), issued by the Office of the Deputy Director of Defense Procurement and Acquisition Policy for Cost, Pricing, and Finance (DPAP), is a nine-volume publication that provides detailed information and techniques that contracting officers can utilize when establishing price reasonableness. *CPRG Volume 1* of the guide provides an introduction to the various pricing methods that companies utilize to generate profits and sales. Contracting officers must consider what is fair and reasonable to both the buyer



(government) and the seller (company). It provides definitions for *fair* and *reasonable* in accordance with FAR mandates from both the buyer and seller perspectives. *CPRG Volume 1* (Office of the Deputy Director, 2012) identifies and explains the three techniques for establishing that a price is fair and reasonable: price analysis, cost analysis, and cost realism analysis. *Price analysis* is defined as “the process of examining and evaluating a proposed price to determine if it is fair and reasonable, without evaluating its separate cost elements and proposed profit. Price analysis, may be, when necessary, supplemented by evaluation of cost elements” (Office of the Deputy Director, 2012, p. 20). Price analysis requires that proposed prices be compared to some measure, and *CPRG Volume 1* (Office of the Deputy Director, 2012) states specifically that prices should be compared to

- proposed prices received in response to the solicitation;
- commercial prices, including competitive published price lists, published commodity market prices, similar indexes, and discount or rebate arrangements;
- previously proposed prices and contract prices for the same or similar end items, if both the validity of the comparison and the reasonableness of the proposed price can be established;
- parametric estimates or estimates developed using rough yardsticks;
- independent government estimates; or
- prices obtained through market research for the same or similar items. (p. 20)

*CPRG Volume 1* (Office of the Deputy Director, 2012) also provides contracting officers with techniques for conducting market research, techniques for evaluating IGCEs, techniques for comparing prices, techniques for price-related decision with sealed bidding, and techniques for price-related decisions in negotiation.

*CPRG Volume 2* (Office of the Deputy Director, 2012) provides instructions on utilizing price indexes, cost-volume-profit analysis, statistical analysis, cost estimating relationships, regression analysis, moving averages, improvement curves, and net present value calculations. This volume defines how to use each measurement, identifies situations for effective use of the measurement, and gives examples of each that show a contracting officer a scenario for its use.





*CPRG Volume 3* (Office of the Deputy Director, 2012) explains the definitions of cost and cost analysis. It provides detail on techniques to perform cost analysis, including explanations of the different methods of accounting practices that companies utilize to charge costs. It provides techniques for evaluating direct labor costs, direct material costs, other direct costs, indirect costs, facilities costs, and profit. It provides guidance on preparing for negotiations with a prospective contractor.

*CPRG Volume 4* (Office of the Deputy Director, 2012) provides guidance for more advanced pricing problems specific to certain contract types. It provides more detail related to indirect costs, cost overruns, terminations, cost realism analysis, and economic price adjustments.

*CPRG Volume 5* (Office of the Deputy Director, 2012) provides guidance on negotiation techniques. It discusses different types of techniques and the government's desire to achieve a win-win situation with contractors. *CPRG Volume 5* (Office of the Deputy Director, 2012) states that a win-win situation is one in which both parties

- attack the problem, not each other;
- focus on long-term satisfaction and common interests;
- consider available alternatives;
- base results on objective standards whenever possible;
- focus on positive tactics to resolve differences; and
- emphasize the importance of a win-win result (p. 8).

This volume provides more detailed guidance on preparing for a negotiation and ensuring that both the government and the contractor receive a fair price.

*CPRG Volumes 6–9* (Office of the Deputy Director, 2012) offer contracting officers guidance for more advanced or uncommon contracting situations. *CPRG Volume 6* provides guidance on pricing contract changes and other special considerations. *CPRG Volume 7* provides techniques for settlements related to termination. *CPRG Volume 8* provides more detail on cost realism analysis. And *CPRG Volume 9* provides information on several financial indicators.



The DODIG also makes publicly available the audit framework utilized when conducting an agency audit. This guide (DODIG, 2009a) provides detailed information on definitions, summaries of regulations, and techniques to determine whether proper cost and price reasonableness determinations were completed. The audit guidance establishes a four-step process that mirrors the FAR with respect to cost or pricing data. First, it determines whether the agency complied with the requirements for obtaining certified cost or pricing data, or other than certified data; second, it establishes whether the agency has adequate procedures in place for analysis; third, it determines whether effective analysis was conducted; and fourth, it determines whether price negotiations and documentation were effectively conducted (DODIG, 2009a).

## Section IV: Literature Review Conclusions

There were multiple findings of deficiencies in each of the inspection reports; however, there were five deficiencies that repeated themselves more than others. First, the lack of proper price reasonableness determination documentation in the contracting file was mentioned in six separate inspection reports. Second, the failure to properly challenge commercial item designations, and third, the failure to properly verify previous prices paid as fair and reasonable, were both mentioned in four different reports. Fourth, the audit reports suggest that the wording of cost or pricing data regulations for commercial items has led contracting officers to hesitate to ask, or fail to ask, for certified cost and pricing data. Fifth, high workload and the amount of qualified contracting personnel were mentioned in four different reports.

In addition, the previous research conducted by NPS researchers highlighted three of the above identified deficiencies. The researchers found that documentation of price reasonableness, and the failure to verify previous prices paid, were both apparent during the review of contract files during the research. The “personnel survey” results utilized during the research identified that supervisors believed that manpower shortages were a reason for the failure to properly establish and document price reasonableness. Therefore, the recent research demonstrates that there is a consistency between the research findings and the inspection reports.



Battle (2008) summarized many of the same recommendations that government reports and the NPS researchers have made, concluding that

the factors that contribute to paying more than a fair and reasonable price for products and services can be attributed to the shortage of qualified contract personnel, the urgency of requirements by customers, and not being aware of market factors that affect prices in the commercial sector. (p. 67)

Section III, namely “Price reasonableness determination”, illustrates that extensive literature exists in the form of audits, inspection reports, research reports, and guidebooks that provide a perspective of the problem. The existing literature provides evidence that this problem of conducting effective price reasonableness determinations will not be solved in the short term. Further research on these concerns is warranted.

## Methodology

The purpose of this chapter is to describe the methods utilized in collecting the data necessary for this research. A discussion includes the contract file review methodology and the personnel survey methodology.

### Contract File Review

We utilized a checklist for the contract file review. This checklist identified the price of each contract, commercial item designation, supply or service, estimates, competition, procedures, documentation present, and the price analysis techniques used. Two of the authors pulled a random sample of 30 contracts to provide the required data, and later one of the authors pulled another 20 for a total of 50 contracts reviewed. The parameters for file review were an acquisition price greater than \$150,000 and under two years old. The DOD contracting office pulled a listing of contracts that met these parameters. Based on the contract list, we pulled randomly selected files for review.

### Personnel Survey

We utilized a personnel survey to anonymously determine the skill level and knowledge for conducting price analysis and price reasonableness determinations. Contracting personnel possess different skills and knowledge depending on years of experience, certification level, and the types of procurements they are typically assigned. The survey was designed for the participants to assess their knowledge base and provide feedback on how often they utilize various pricing techniques. The



personnel survey was limited to those contracting personnel who worked in the same office that the contracting files were reviewed in order to compare results of the personnel survey to the contract file review.

## Contract File Review and Personnel Survey Data

### Contract File Review

This section provides the results of the data collected in the contract file review. A random sample of 50 contract files was reviewed with the parameters described in Section III, namely “Price resonableness determination”, and was the source of this data.

The contract file sample contained 50 contract files valued at \$72.2 million. They were a mix of supplies and services contracts. There were 19 contracts for the purchase of supplies valued at \$23 million, and 31 contracts for services valued at \$49.2 million, as shown in Table 1.

**Table 1: Contract File Data-Supplies and Services**

Category of Files	Quantity	Percentage	Value
Supplies	19	38%	\$23,030,509.10
Services	31	62%	\$49,203,139.90
<b>Total</b>	<b>50</b>	<b>100%</b>	<b>\$72,233,649.00</b>

In addition, 41 of the 50 contracts (82%) in the sample were classified as commercial item contracts, and nine were classified as non-commercial; 14 contracts of the 41 (34%) were missing a statement in the file documenting that the item met the commercial item definition.

FAR Part 13 (2014), Simplified Acquisition Procedures, was used on 52% of the sampled contracts (26 of 50). FAR Part 15 (2014), Negotiations, was used in 46% of the sampled contracts (23 of 50), and one contract (2%) utilized both FAR 13 and FAR 15. There was no use of FAR 14, Sealed Bidding, in the sample. FAR Part 15 was used most often when there was a sole-source procurement situation, or when factors other than price were applied to evaluate offers. Figure 2 shows a graphical representation of the FAR parts utilized.



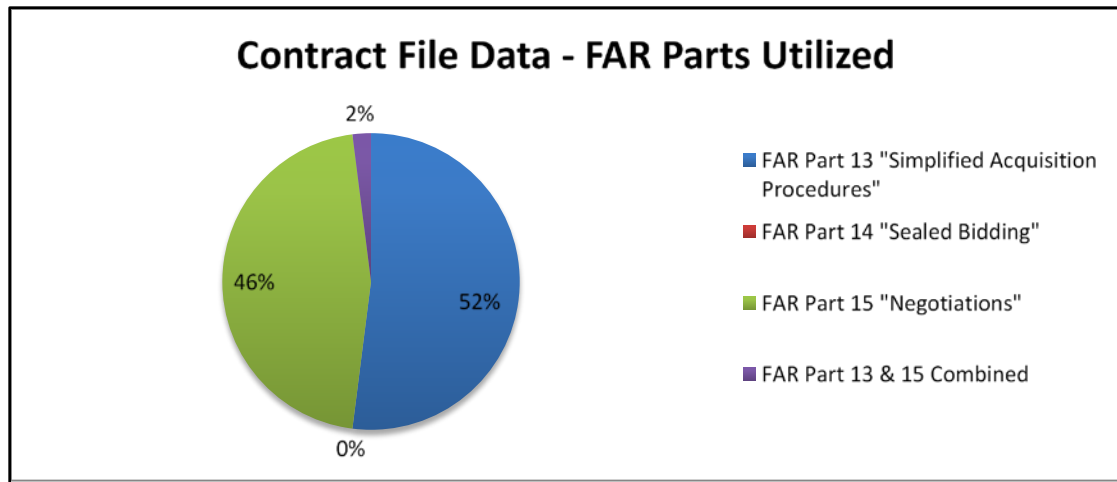


Figure 2: Contract File Data-FAR Parts Utilized

The documentation stated that an IGCE was in 32 of the 50 contracts sampled (64%). However, there were only 26 IGCEs actually found in the files. There were only 10 IGCEs that were substantiated (38% of the actual 26 IGCEs in the file samples) by catalogs, published price listings, contact with a vendor, or a government technical report as seen in Figure 3. Essentially the developer of the IGCE explained the sources of information used to make the estimate. Also, 18 of the 31 service contracts had an IGCE in the file, three of which were substantiated, or only 16%. Eight of the 19 supply contracts had an IGCE in the file, seven of which were substantiated.

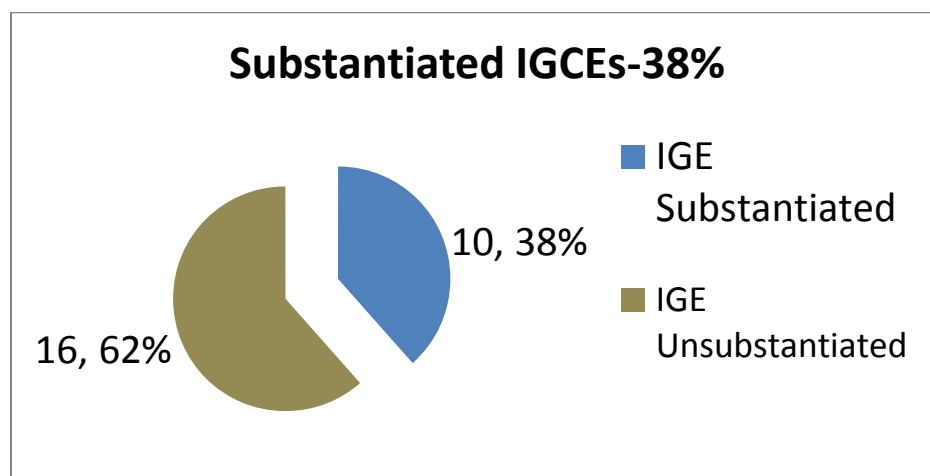


Figure 3: Number of IGE/IGCE in the Contract files that were substantiated



A market research report was present in 27 of the 32 sampled contracts (84%), as shown in Figure 4. Note: 18 samples were delivery orders or modifications without a requirement for market research so only 32 files would have required a market research report. Of the 27 market research reports, 18 (67%) of those contracts addressed the type of pricing data collected, as shown in Figure 5. There were nine contracts in the sample that did not address the type of pricing data collected in the market research report, and there were five contracts in the sample that did not have a market research report that should have. There were 12 contracts that claimed a price comparison to prices obtained through market research.

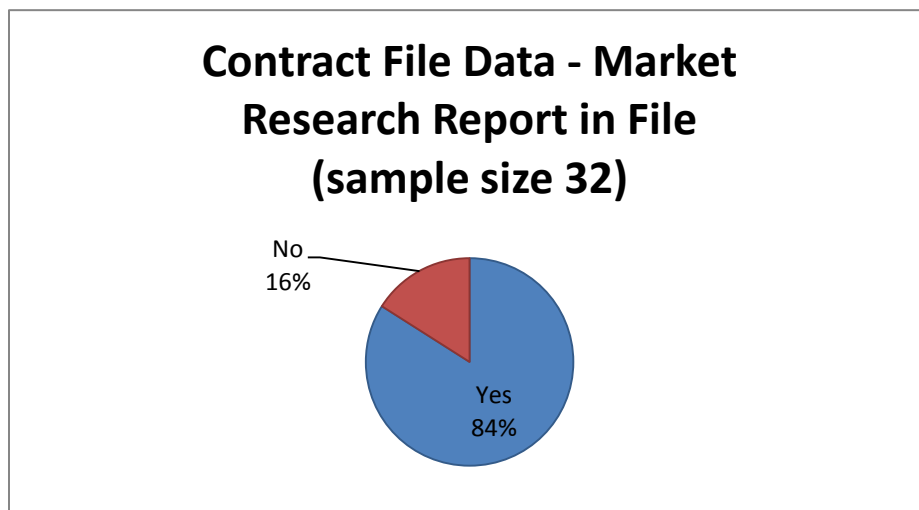
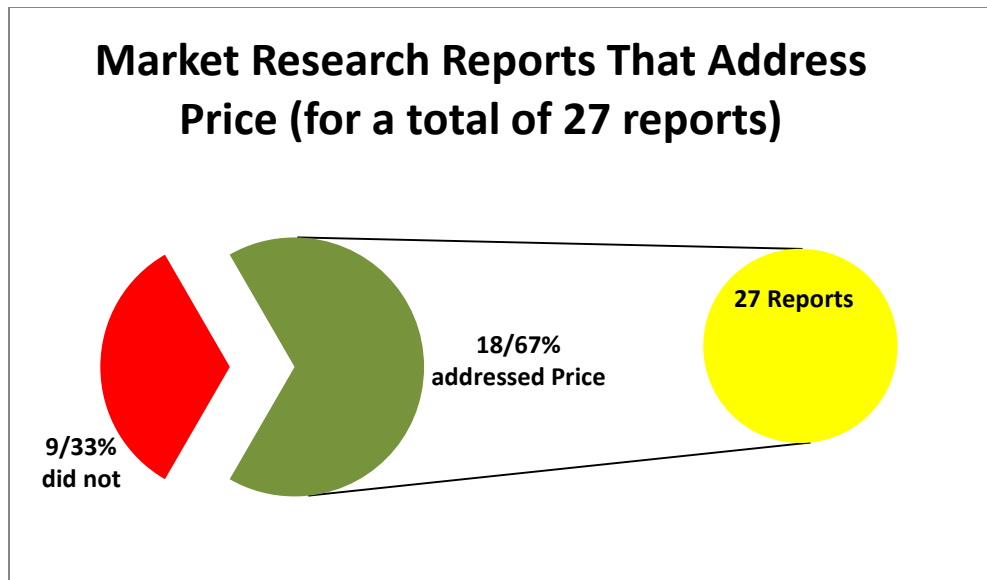


Figure 4: Contract File Data-Market Research Reports



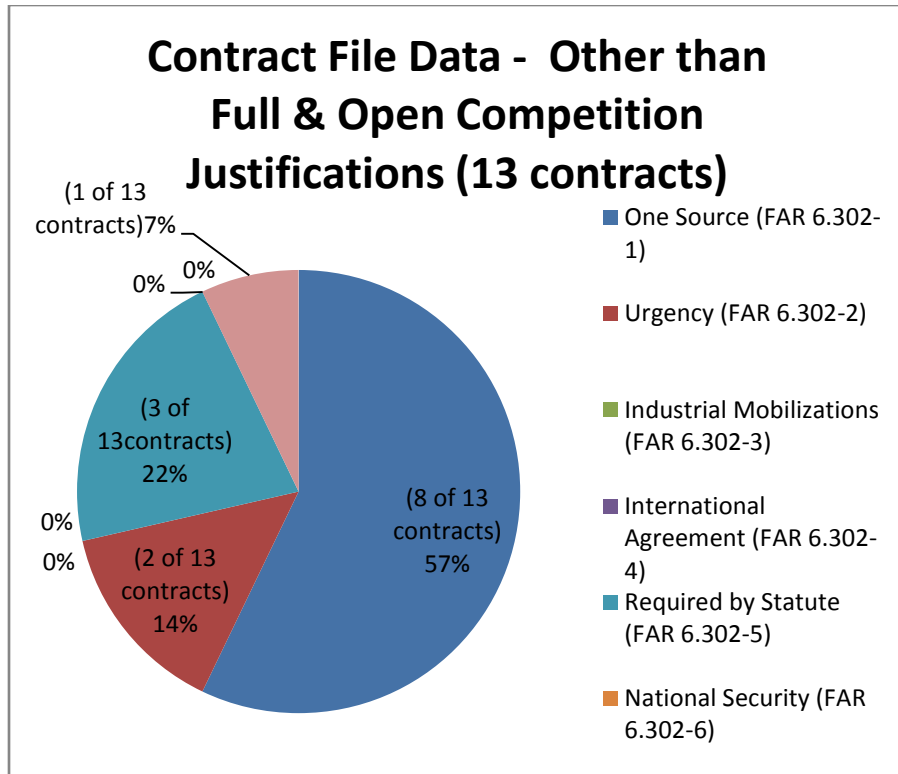


**Figure 5: Contract File Data-Market Research Reports That Address Price**

There were 18 delivery order/task orders from indefinite delivery/indefinite quantity type contracts in the sample, none of which relied on estimated prices from the base contract to base price reasonableness. Essentially, an independent price reasonableness determination was conducted on each delivery/task order prior to award.

There were 15 contracts in 31 that utilized full and open competition. Note that 19 files were delivery orders that were not counted. There were 16 cases that did not utilize full and open competition, 13 of the 16 (81%) had a justification and approval document in the file and three were missing. The justification of “only one responsible source” was utilized 62% of the time, eight of 13; “unusual and compelling urgency” was utilized 14% of the time, two of 13; and “authorized or required by statute” was utilized 23% of the time, three of 13; one of the 13 was a modification as shown in Figure 6. Thirteen of the 16 single/sole-source procurements in the sample of 50 were confirmed to be commercial items.





**Figure 6: Contract File Data: Other than Full and Open Competition**

There were seven instances in the sample of 50 where factors other than price were considered in selecting the source, but price remained a substantial factor in 100% of those cases. There were two contracts in this category that were awarded to an offeror that was not the lowest offeror; however, each had a statement of price reasonableness that justified the choice of the higher offer in the file.

There were 17 contract actions in the sample that exceeded the certified cost or pricing data threshold. There were eight documented exceptions for not requesting cost or pricing data in the files. Cost analysis was performed in the nine files that required certified cost or pricing data in the sample.

Price reasonableness memorandums were present in 96% of the contract actions sampled; only two files in the sample of 50 did not contain a price reasonableness memorandum. However, only 27 of the 50 (54%) had adequate justification for price reasonableness in the sample files as seen in Table 2.

Contract File Data- Adequate vs. Inadequate Justification for Price Reasonableness. 15 of 31(48%) files under services were adequate. 11 of 19 (63% supply files had adequate justification.





Table 2: Contract File Data- Adequate vs. Inadequate Justification for Price Reasonableness

	Adequate Justification	Inadequate Justification	No documentation in file	Total	Percent Justified
Contract Files	27	21	2	50	54%
Services	15	16	0	31	48%
Supplies	12	5	2	19	63%

In Figures 7 and 8, we list the seven titles of FAR 15.404-1(b)(2) i-vii price analysis techniques and display them in both a bar and pie chart. Next to the titles in the bar chart we display the number of occurrences of that technique used in documenting how the pricing memos justified the offered price in the the sample files. Next to the titles in the pie chart we display the percentage of the occurrences of that technique used in documenting how the pricing memos justified the offered price in the the sample files **Note:** A pricing memorandum may document one or more types of price analysis techniques. This number of occurrences only record what was used. It does not mean that the price analysis method described in the memo was adequate.

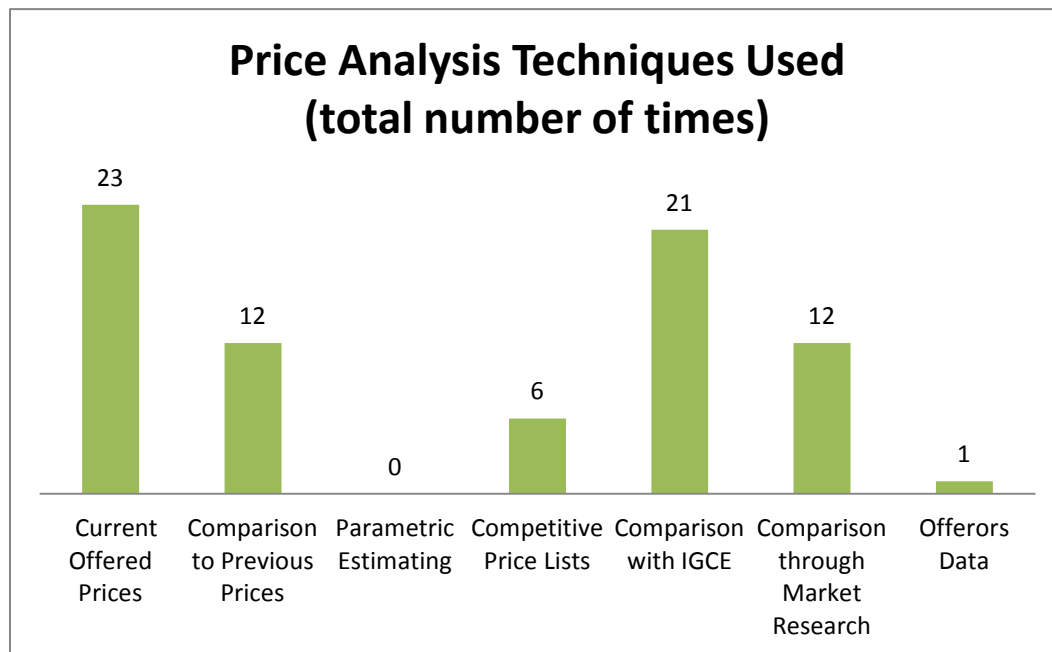


Figure 7: Contract File Data-Price Analysis Techniques Used (Bar Chart)



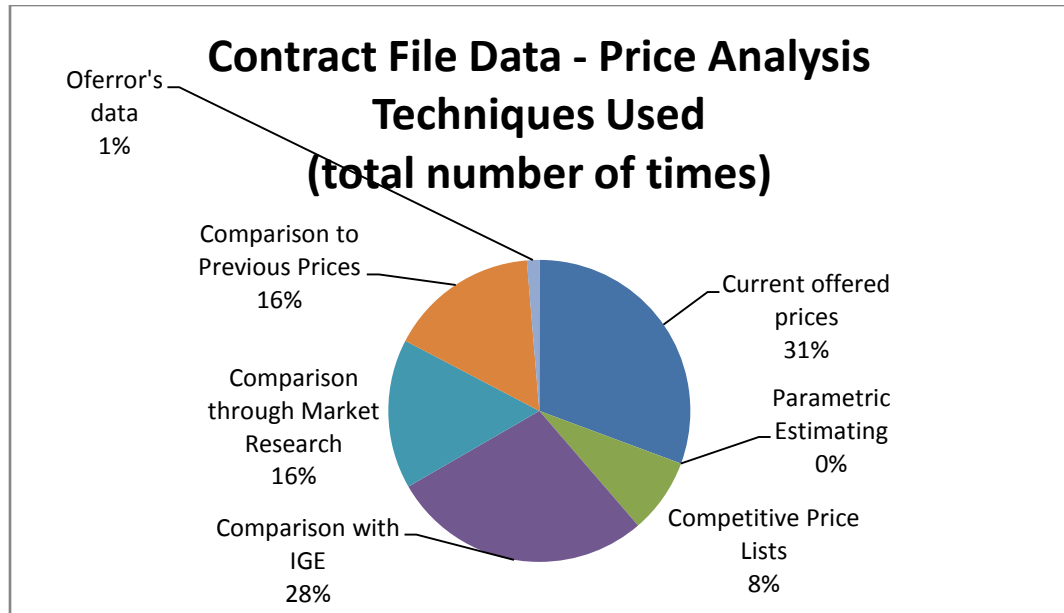


Figure 8: Contract File Data-Price Analysis Techniques Used (Pie Chart)

We reorganized the data displayed in Figures 7 and 8 by contract category (Supply vs. Services). This data is listed in Table 3, which also provides insight into the type of justifications most used for the acquisition of a supply versus services.

Table 3: Answers to the Question “What Was the Documented Justification for Price Reasonableness?”

<u>Price Justification in Pricing Memos</u>	<u>Total number</u>	<u>Supply</u>	<u>Services</u>
Comparison to current offered price?	23	10	13
Comparison to previous prices paid?	12	4	8
Parametric estimating?	0	0	0
Competitive published price lists?	6	5	1
Comparison of proposed prices with independent government cost estimates?	21	4	17
Comparison of proposed prices obtained through market research?	12	5	7
Analysis of sales data provided by the offeror?	1	1	0



Then in Figures 9 and 10 we breakdown the data in Table 3 in the form of two different pie charts that individually represent the contract category services versus supply as another way of examining the data by percentages.

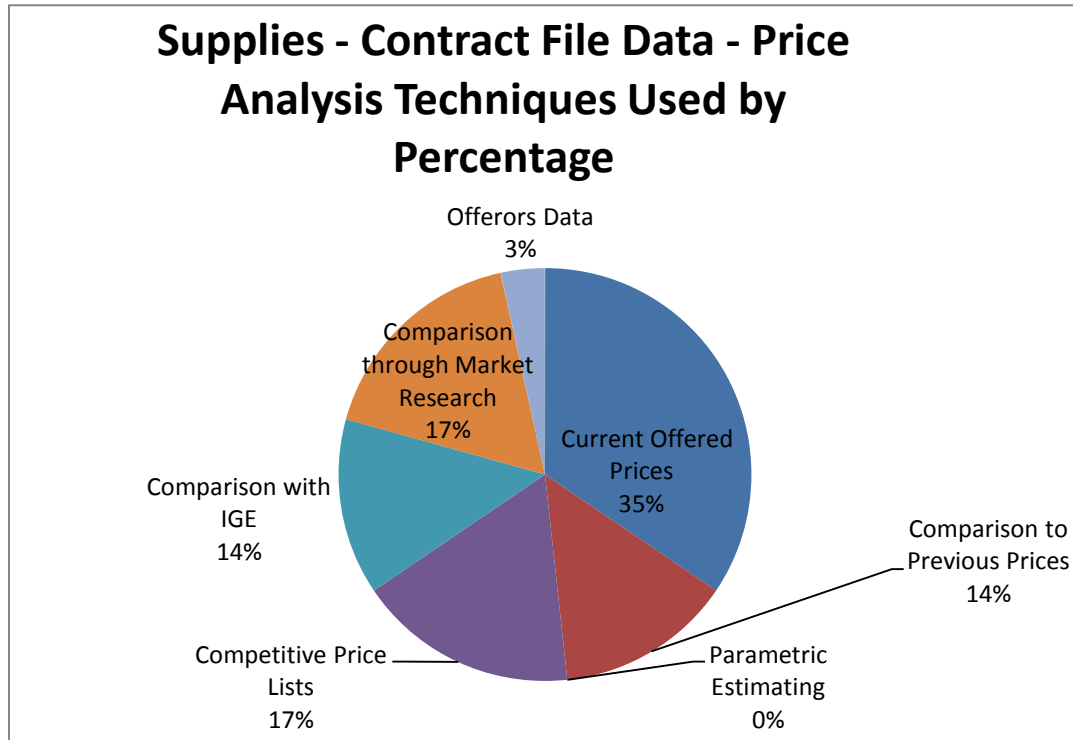
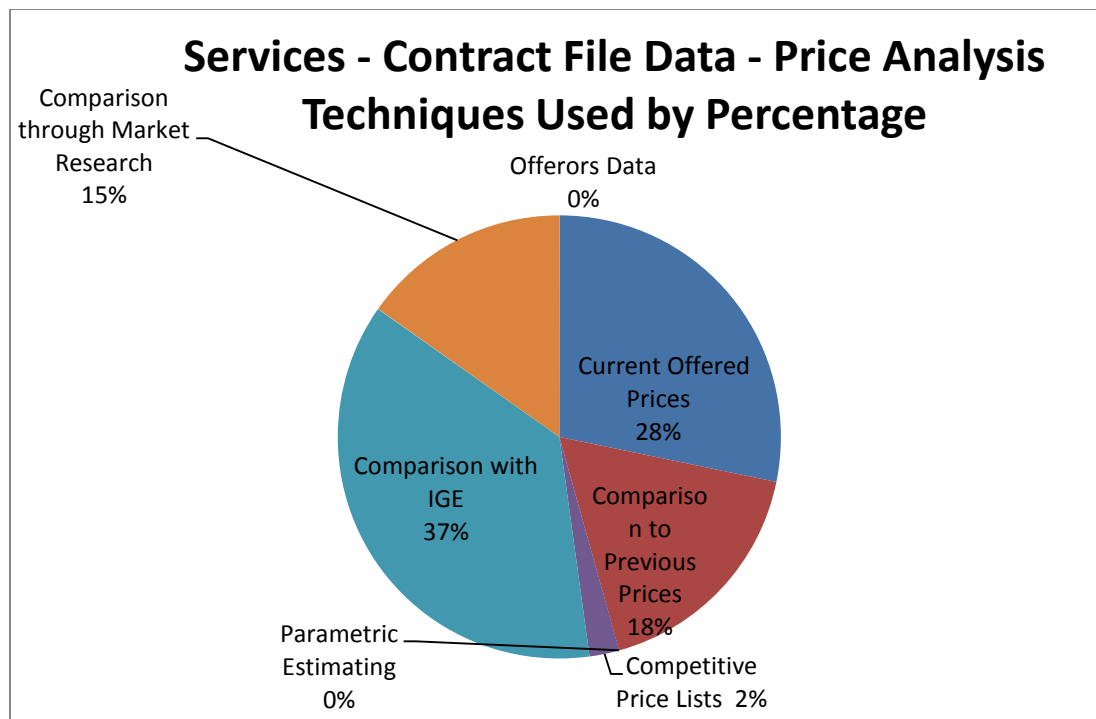


Figure 9: Supplies-Price Analysis Techniques used





**Figure 10: Services-Price Analysis Techniques used**

There were 23 contract actions in the sample of 50 that documented some comparison between the current offered prices. In 11 of those 23 contract actions (47%), the lowest price was smaller than 80% of the next lowest price, as displayed in Figure 11. In one case the contract specialist documented the file to substantiate the large gap between the lowest price and the highest price of three offers. This justification was not necessary since it should be compared with the next lowest price not the highest offeror. There was no large gap between the lowest and the next lowest offeror.



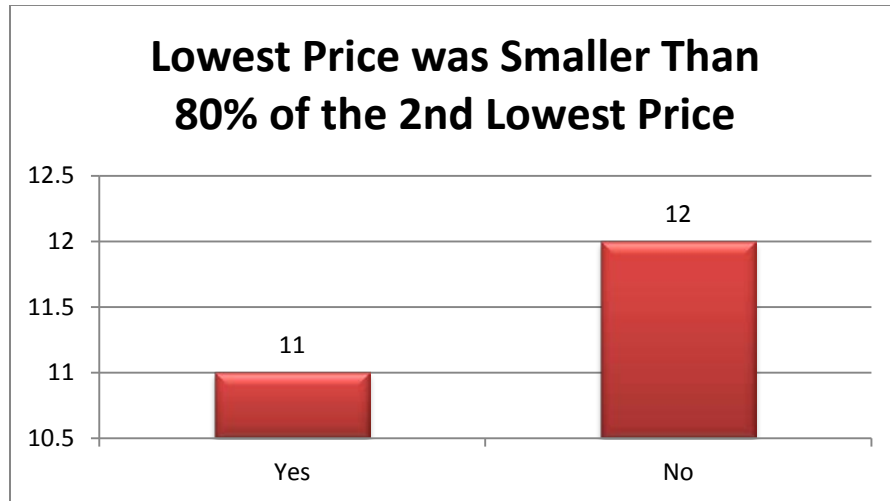


Figure 11: Contract File Review—Was the Lowest Price smaller than 80% of the next Lowest Price?

Comparison of proposed prices to previous (historical) prices paid was utilized on 12 contract actions. In the seven instances that had an invalid previous price documented in the file, there was a previous price that could not be validated for one or more of the reasons displayed in Figure 12 (some had multiple disqualifying reasons). In four of the seven, the previous price had a significant time lapse between the current and previous price. In six cases of the seven, there were significant changes to the terms and conditions. In all seven cases there was uncertainty with the reasonableness of the previous price. Technology changes were a factor in disqualifying one previous price.

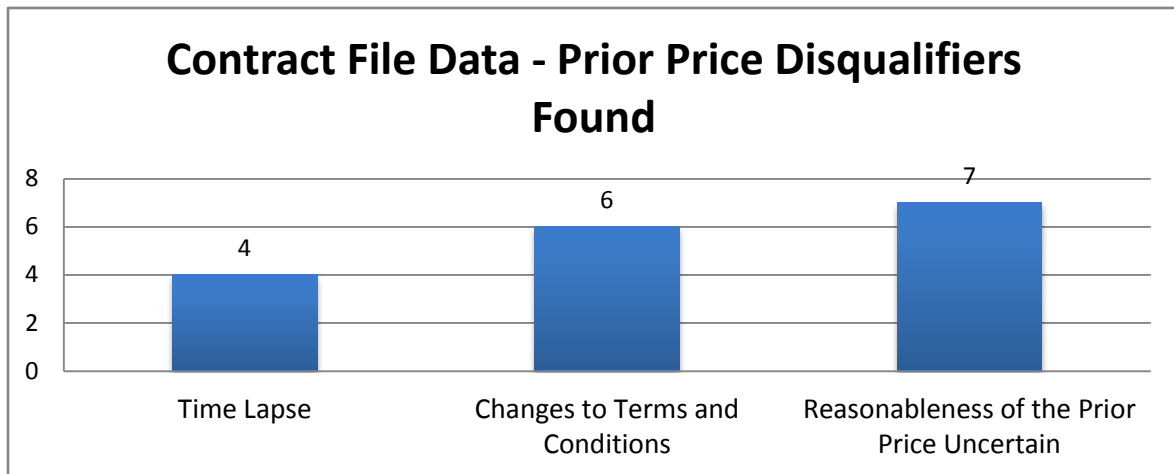


Figure 12: Contract File Data—Prior Price Disqualifiers

Table 4 summarizes the following inadequately documented price analysis for



each price analysis techniques used on the contract file data sample. There were 23 contract actions in the sample of 50 that documented some comparison between the current offered prices. In 10 cases of the 23 current offered prices, there was evidence that the proposed prices were not truly competitive. In one case, the offeror also had technical and/or past performance issues that further disqualified him or her from award consideration but was used for price comparison. Comparison of proposed prices to previous (historical) prices paid was utilized on 12 contract actions. Of those 12 contract actions, five (42%) had a valid previous price documented in the file that could be used for comparison purposes. In all five cases where a valid previous price existed, the analyst did adjust the prices from the previous price to compensate for quantity or delivery time frames appropriately, and in three of those cases, the source documentation to support the adjustments was in the contract file. There were six contract actions of the sample of 50 that used a comparison of proposed prices to competitive price lists. In five cases (83%), the pricing memorandum included a reference to the list, catalog, or advertisement with the publication date in the statement of price reasonableness. One of the six did not properly document the comparison. There were 21 contract actions of the sample of 50 that claimed a comparison of proposed prices to an IGCE. Only five were substantiated by published price lists, contact with a vendor, or government technical knowledge.



There were five cases in the sample of 50 (10%) that utilized quantitative techniques in performing price analysis. Three of them utilized indexing to compare previous prices to current proposed prices, and the other two used other methods. There was no evidence of the use of improvement curves, cost-volume analysis, or regression analysis in the sample.

**Table 4: Summary of Inadequately Justified Price Analysis documentation in the Files by Price Analysis Technique**

Price Analysis Techniques	Total	Supplies	Services
Inadequate price competition	10 of 23	3	7
Acceptance of prior prices without establishing their reasonableness	7 of 12	3	4
Incomplete statements based on references to market research	0 of 12	0	0
Incomplete references to current price list, catalog, or advertisement	1 of 6	1	0
Incomplete comparison with IGCE or use of unreliable IGCEs	16 of 21	1	15
Offeror did not provide data that was appropriate	0 of 1	0	0
No documentation in file for price reasonableness justification	2 of 50	2	0
<b>Totals of inadequate price analysis documentation for price reasonableness justification</b>	36		

## Personnel Survey

This section provides the results of the data collected in the personnel survey. The survey was designed for the participants to assess their knowledge base and provide feedback on how often they apply various pricing techniques.



There were 25 surveys completed out of a possible 50 personnel who met the qualifications described in Section III: Price Reasonableness Determination. One survey respondent completed the demographic information only, and 24 survey respondents completed the entire survey. There were two supervisors that completed the supervisor section of the survey. The percentages and charts in the section were based on 25 survey respondents for the demographic information, and 24 respondents for the specific activity and knowledge-base questions.

The 25 survey respondents who completed the demographic section of the survey indicated that 18 people (72%) had greater than five years of acquisition and contracting experience, six people (24%) had three-to-five years of experience, and one person (4%) had less than three years of experience. None responded that they had less than one year of experience. A graphical representation of the years of acquisition experience is shown in Figure 13.

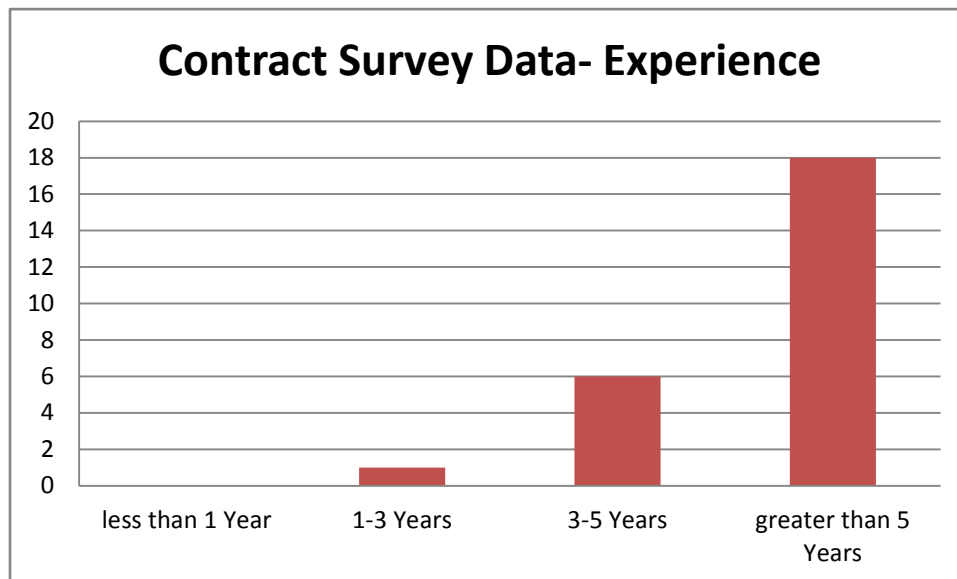


Figure 13: Contract Survey Data—Years of Acquisition Experience

The survey respondents were certified in Defense Acquisition Workforce Improvement Act (DAWIA) categories of contracting or purchasing, as shown in Figure 14, and listed their position titles are shown in Figure 15.





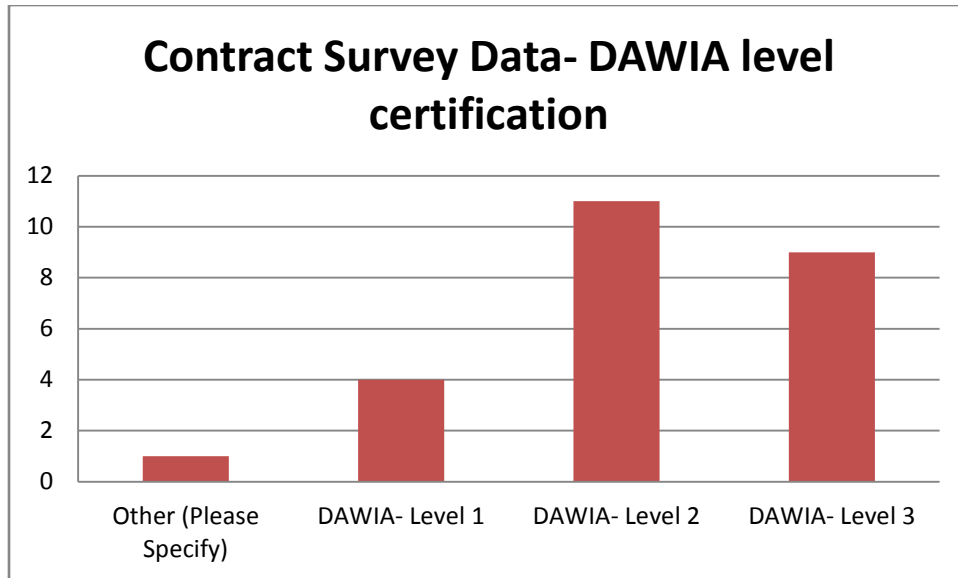


Figure 14: Contract Survey Data—Certification Level

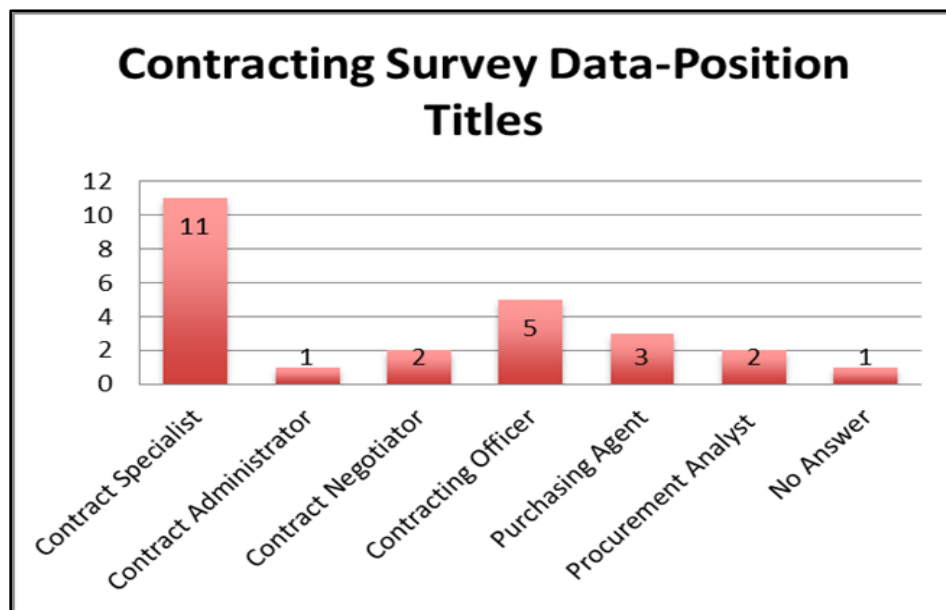


Figure 15: Contract Survey Data—Position Title



Of the 24 respondents who completed the entire survey, 22 respondents purchased supplies on a daily basis, and 23 respondents purchased services on a daily basis, and some did both. Twenty-three respondents purchased commercial items, and 16 respondents purchased non-commercial items, and some did both as shown in Figure 16. Twenty-four respondents managed fixed-price contracts daily, 12 respondents managed cost reimbursement contracts daily, and one respondent managed time and materials contracts daily.

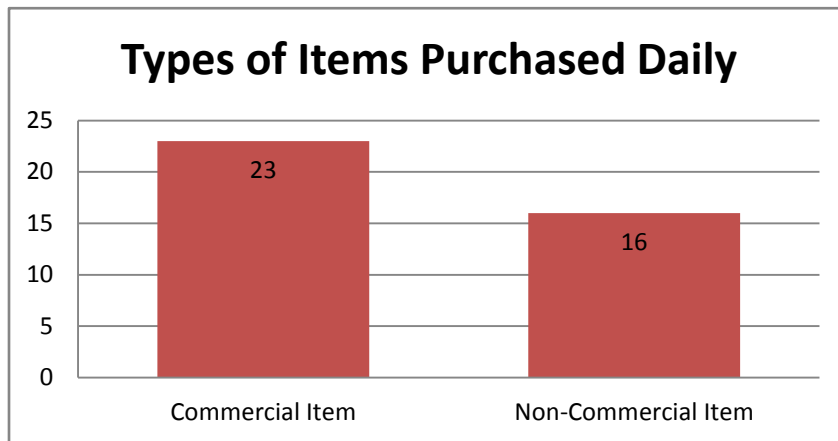


Figure 16: Contract Survey Data— Types of Items Purchased Daily

When the 24 survey respondents were asked whether they completed price analysis when certified cost or pricing data was not required, 20 people (84%) responded that they conducted price analysis always or frequently, as shown in Figure 17. When contracting actions required cost analysis, 17 people (71%) responded that they also performed price analysis, and five people (21%) responded seldom or never as shown in Figure 18.



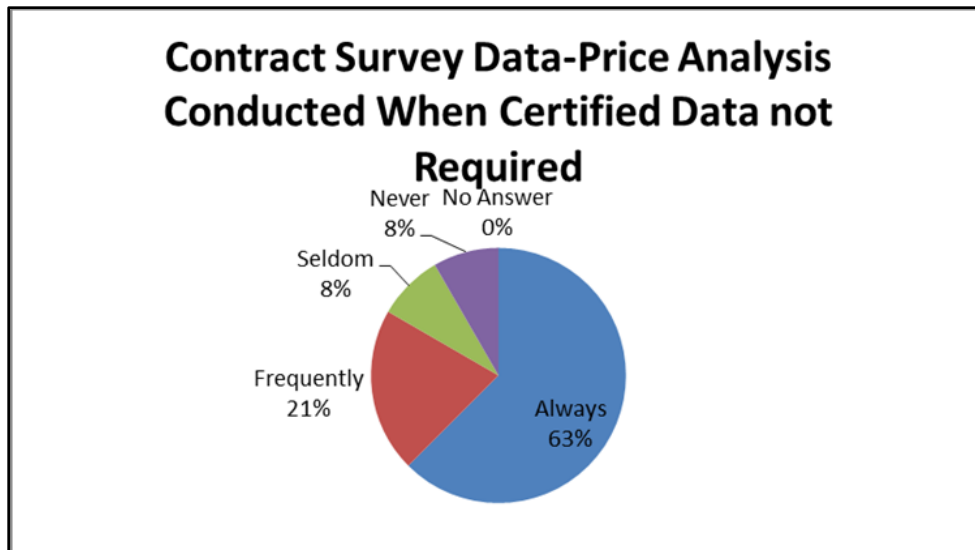


Figure 17: Contract Survey Data— Was Price Analysis Conducted When Certified Data Is Not Required?

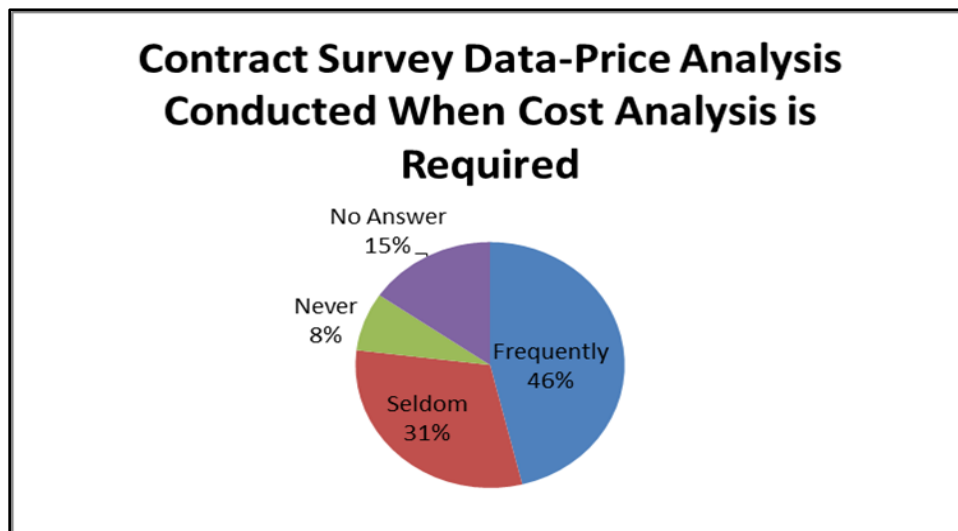


Figure 18: Contract Survey Data — Was Price Analysis Conducted When Cost Analysis Is Required?

When the 24 survey respondents were asked whether they were conducting and documenting market research prior to a new acquisition, 19 people (79%) responded that they conducted and documented market research very frequently or frequently, 18 people (75%) responded that it was very critical or critical, and 16 people (67%) responded that they had expert/advanced proficiency in conducting and documenting market research, as shown in Figures 19-21. When asked whether they identified current market pricing for the item being purchased or similar items in the market research report, 20 people (83%) answered yes.



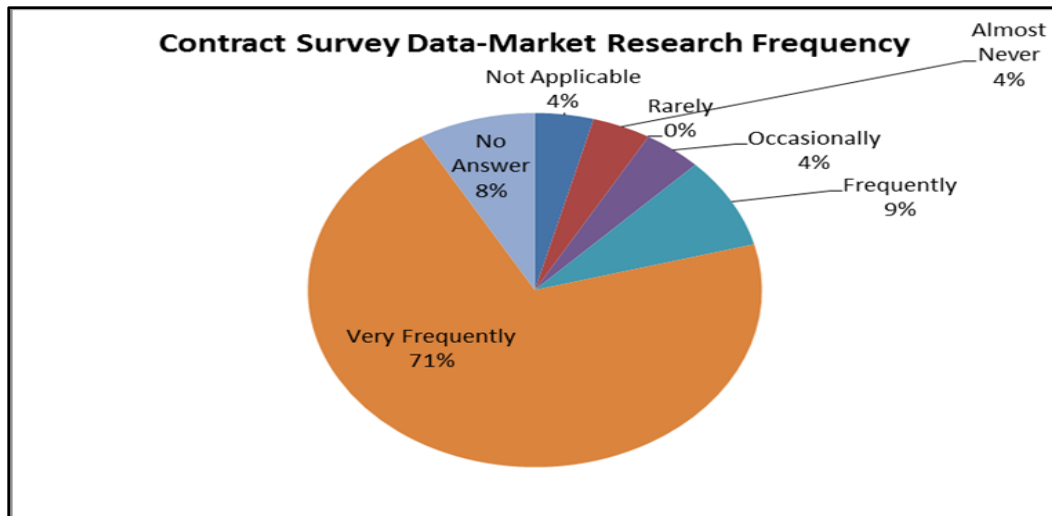


Figure 19: Contract Survey Data—Market Research Frequency

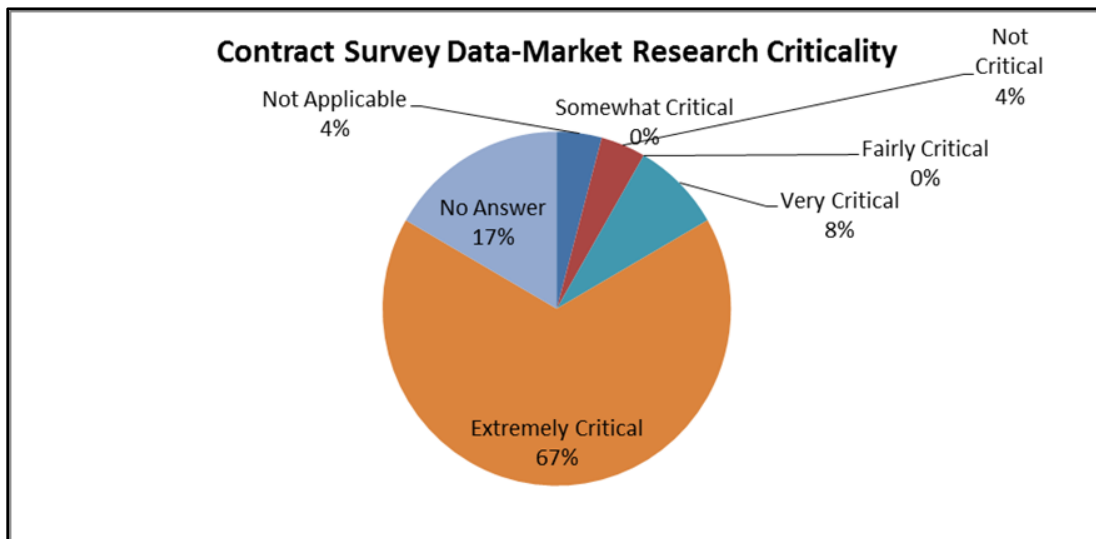
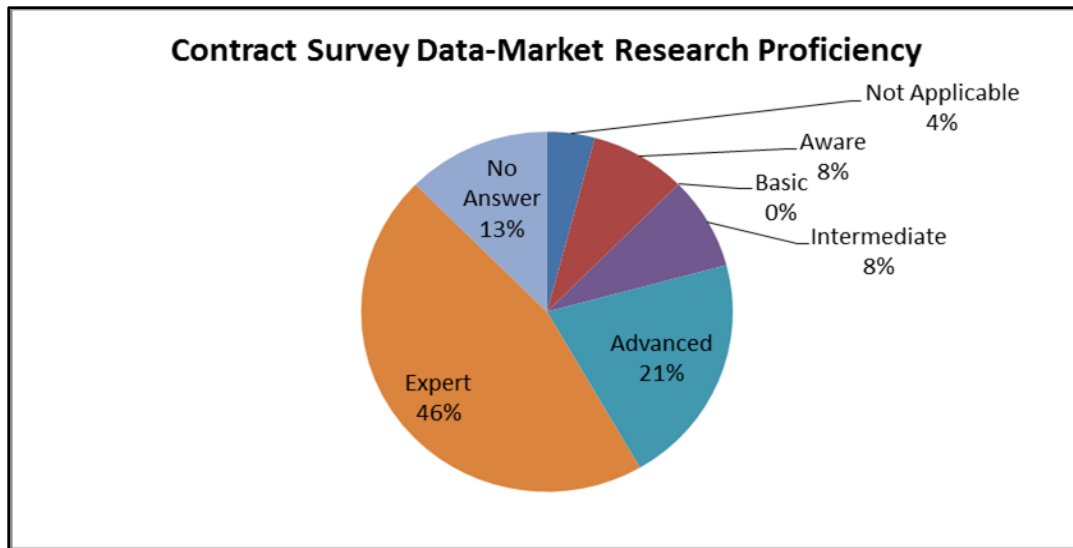


Figure 20: Contract Survey Data—Market Research Criticality





**Figure 21: Contract Survey Data—Market Research Proficiency**

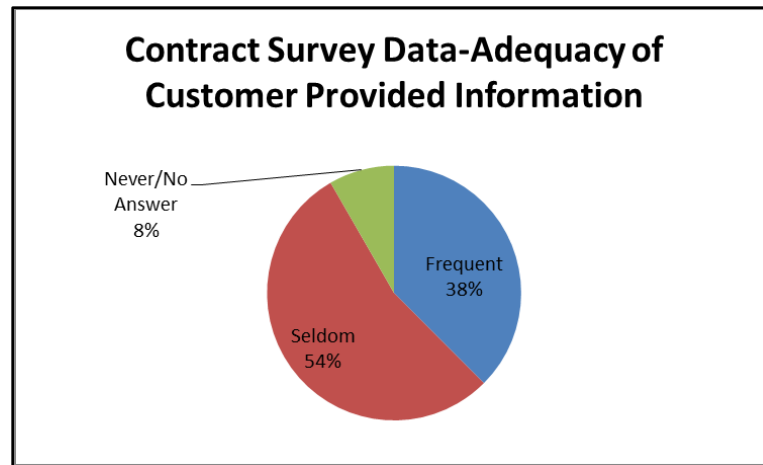
Of the 24 people surveyed, 22 took some DAWIA course, of which 18 took both Level 1 and Level 2, two of them took just Level 1, and two of them took just Level 2, as shown in Table 5.

**Table 5: Contract Survey Data-Level of Classes Taken**

Pricing level	Level 1 (104 & 170)	Level 2 (217 & 270)	Level 2 but not Level 1	Admitted to no courses taken
Number of people taking courses	20	18	2	2

When the 24 survey respondents were asked whether the customer provided market research information, 21 people (88%) responded that both the requiring activity and the contracting activity provided market research information. When asked about the adequacy of the market research information, 13 people (54%) indicated the customer seldom provided adequate market research information, nine people (38%) indicated that the customer frequently provided adequate market research information, and 8% of the respondents indicated the customer never provided adequate market research information, as shown in Figure 22.





**Figure 22: Contract Survey Data—Adequacy of Customer-Provided Information**

When the 24 survey respondents were asked whether the customer provided IGCEs, nine people (38%) responded that the customer always provided an IGCE; seven people (29%) responded that the customer frequently provided an IGCE, and seven people (29%) responded that the customer seldom provided an IGCE. When asked whether the IGCE was substantiated, 13 people (54%) thought the IGE was seldom or never substantiated, eight people (33%) thought the IGE was frequently substantiated, and three people (13%) thought the IGCE was always substantiated. When asked whether they had the ability to determine whether an IGCE was reliable, 16 people (67%) indicated yes, five people (21%) indicated no, and three people (12%) did not answer. When asked whether it was hard to obtain adequate competition for services contracts, 16 people (67%) indicated no, six people (25%) indicated yes, and two people (8%) did not answer. When asked whether an IGCE was used to determine whether services were priced reasonably, 11 people (46%) indicated yes, seven people (29%) indicated no, and six people (23%) indicated it was not applicable or did not answer. IGCE response percentages are displayed in Table 6.



**Table 6: Contract Survey Data-Independent Government Cost Estimates**

<b>Contract Survey Data-Independent Government Cost Estimates (IGCE)</b>						
	Customer provided IGCE?	IGCE is substantiated?		Contracting officer has ability to determine reliability?	Hard to obtain competition for services?	IGCE used to determine whether services are priced reasonably?
<b>Always</b>	38%	13%	<b>Yes</b>	67%	25%	46%
<b>Frequently</b>	29%	33%	<b>No</b>	21%	67%	29%
<b>Seldom/ Never</b>	29%	54%	<b>No Answer/NA</b>	12%	8%	25%

When the 24 survey respondents were asked whether they had requested “data other than certified cost or pricing data,” 18 people (75%) indicated yes, three people (13%) indicated no, and three people (12%) did not answer. Reasons for asking for other than certified data were no market data available (four responses), no historical data available (six responses), and no competition available (nine responses).

When the 24 survey respondents were asked whether they executed fundamental quantitative methods (e.g., price indexing, rough yardsticks, cost-volume, regression) in determining price reasonableness, six people (25%) indicated that they executed fundamental quantitative methods frequently/very frequently, 10 people (41%) indicated they executed fundamental quantitative methods occasionally/rarely, and four people (17%) did not answer the question. When asked to rate their proficiency in executing fundamental quantitative methods, seven people (29%) indicated they were an expert/advanced in quantitative methods, eight people (33%) indicated they had intermediate/basic skills, two people (8%) indicated that they were aware of the concept, and seven people (29%) did not answer the question or thought it was not applicable.



When the 24 survey respondents were asked whether they executed a pricing memorandum that explains how they determined the awarded price to be fair and reasonable, 21 people (88%) indicated that they very frequently or frequently executed a pricing memorandum, and three people (12%) did not answer the question or rarely executed a pricing memorandum. When asked whether completing a pricing memorandum was critical, 19 people (79%) indicated that completing a pricing memorandum was very/extremely critical, one person (4%) indicated that completing a pricing memorandum was fairly critical, one person (4%) indicated that completing a pricing memorandum was not critical, and three people (12%) did not answer the question or thought it was not applicable. When asked to rate their proficiency in completing a pricing memorandum, 19 people (79%) indicated that they had advanced or expert proficiency in completing pricing memorandums, two people (8%) indicated that they had basic proficiency or were aware of the concept, and three people (12%) did not answer the question or indicated it was not applicable.

When the 24 survey respondents were asked whether anyone within the contracting activity reviewed the pricing memorandum before the contract was awarded, 20 people (83%) indicated that someone else did review the pricing memorandum before a contract was awarded very frequently, two people (8%) indicated that the pricing memorandum was almost never reviewed before the contract award, and two people (8%) did not answer the question or indicated that it was not applicable.

When the 24 survey respondents were asked whether anyone within the contracting activity reviewed the pricing memorandum after the contract was awarded, 14 people (58%) indicated yes. When asked whether the organization viewed that review as critical, 21 people (88%) indicated that it was critical. When asked whether an external audit team (DODIG, GAO, or other) reviewed their agencies' contract files within the last two years, 17 people (71%) indicated that yes, an external review did occur.





When the 24 survey respondents were asked whether the organization provided in-house training on price analysis methods, techniques, and documentation, 20 people (83%) indicated that in-house training did occur. When asked for suggestions on improving pricing documentation within the agency, respondents made the following comments:

- “It would be a good idea to review the FAR definitions of what constitutes an acceptable fair and reasonable determination. Even though training has been conducted on this topic, this is the sort of thing that should be reviewed periodically.”
- “A peer review could definitely be useful.”
- “Customer could submit more than one quote for requested supplies or services. This would better ensure adequate funding of the request (requisition) and better documenting of market pricing and availability. Three quotes would be best, if possible. This would not only give the customer a realistic price range, it would also alert the customer to any problems in their product description, delivery times and availability.”
- “We do in-house quality assurance surveillance assessment (QASA) reviews and provide training from the findings.”

When the 24 survey respondents were asked which Defense Acquisition University (DAU) courses they had taken, 13 people (54%) attended Contracting (CON) 104, 16 people (67%) attended CON 170, 13 people (54%) attended CON 217, 14 people (58%) attended CON 270, and two people (8%) attended none of the above, as displayed in Figure 23.



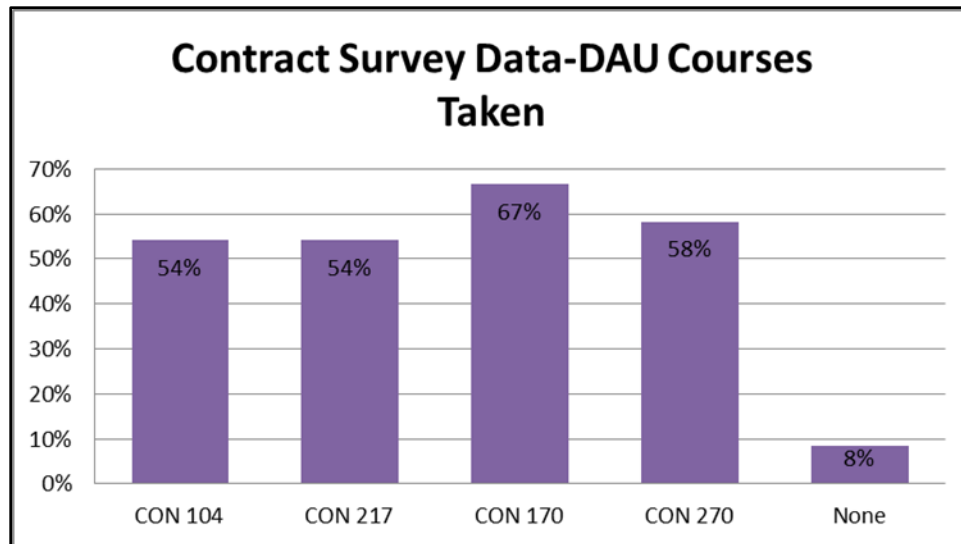


Figure 23: Contract Survey Data—DAU Courses Taken

When the 24 survey respondents were asked whether those DAU courses were effective, 17 people (71%) indicated yes (see Figure 24). When asked to make suggestions on DAU pricing courses, respondents replied with the following:

- “Having a ‘real’ contract to analyze would definitely improve the courses.”
- “More local classes throughout the year and stop cancelling due to low attendance.”
- “More on-site instruction. Not enough emphasis on sole-source/single source price analysis of commercial items. Most of the courses revolve around cost analysis—which is a small percentage of our buys. By the time we get an acquisition that requires cost analysis we’ve forgotten the course material (since most of the classes are taken within our 1st 2 years of employment).”
- “I don’t remember the courses.”
- “Often the applicability and level of documentation is missed.”



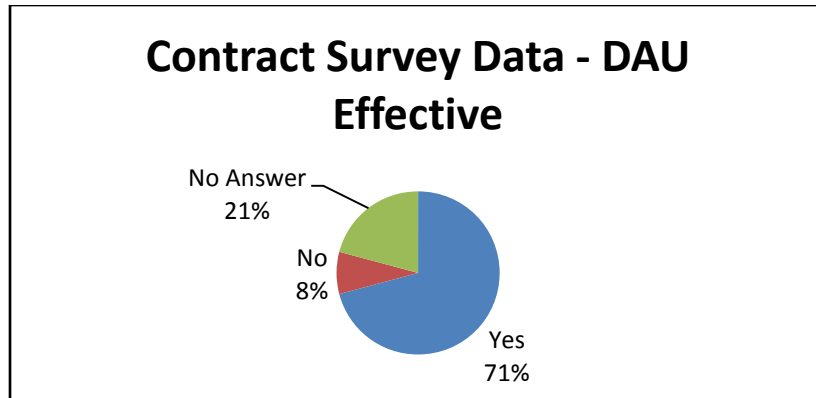


Figure 24: Contract Survey Data—The Effectiveness of DAU Courses

When the 24 survey respondents were asked what the challenges in executing price analysis were, four people (17%) indicated a lack of knowledge in conducting price reasonableness determinations, nine people (38%) indicated the amount of time to complete price reasonableness determinations, four people (17%) gave other reasons as challenges, and seven people (29%) did not answer the question. (See Figure 25) The respondents who indicated other reasons gave the following inputs:

- “Lack of competition and sufficient IGCEs can be somewhat challenging.”
- “Sole-source acquisitions—finding similar products in the market to compare prices with.”
- “Conducting market research when the item is sole source/single source and no other vendors can provide price quote.”
- “Inadequate product description from the requiring activity.”
- “Lack of similar offerings; sole source prevents apples-to-apples price analysis with other offerings.”



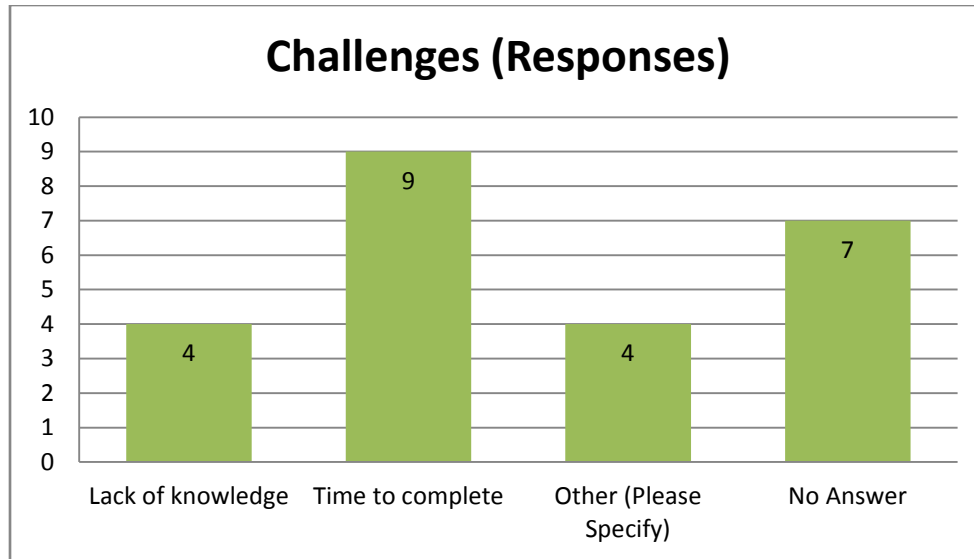


Figure 25: Answers to the Question “What Is Your Challenge in Executing Price Analysis, Determining Price Reasonableness, and Documenting?”

Those who selected “time to complete” offered the following reasons for why it was the most significant challenge in executing price analysis:

- “Continual redrafting/updating of purchase request (PR) documents.”
- “PALT (Procurement Action Lead Time). Acquisitions valued less than \$150,000 are supposed to be completed in less than 30 days. Most of the time, the customer has submitted documentation that is inadequate (poorly written sole source, no salient characteristics for ‘or equal’ products, poorly written performance work statements, lack of familiarity with other comparable products or market research, and inadequate evaluation of offers). Since we deal with the fleet, contracting is typically a collateral duty so we have to train them on what makes up an adequate purchase request package—this takes time.”
- “Metrics.”
- “The challenge is the workload and PALT times to really be able to do a sufficient job.”
- “Customer demands.”
- “Usually the urgency of the requirement.”



- “Amount of time it can take to get supporting documentation from the contractor or Defense Contract Audit Agency (DCAA) compared to the time available to award the contract.”
- “Workload.”

Two survey respondents indicated that they were supervisors and answered supervisor-specific questions on the survey. When asked what their organizations biggest challenge is, one selected “skill level of employees” and one selected “manpower shortages.” When asked whether their organization is actively monitoring pricing documentation for adequacy and effectiveness, one selected “outstanding” and one selected “very good.” When asked whether the organization’s contracting personnel were knowledgeable in price analysis techniques, the techniques’ appropriate applications, and whether personnel apply techniques appropriately, both selected “average/intermediate.” When asked whether the organization’s contracting personnel have the ability to execute fundamental quantitative methods (e.g., indexing, rough yardsticks, cost-volume pricing) in performing price analysis and determining price reasonableness, one selected “below average” and one selected “average/intermediate.”

## Comparisons between the Contract File Data and Contract Survey Data

**Contract Survey Data:** This section makes comparisons of the file data and the personnel survey data that were directly related. Comparisons are necessary in order to relate the two data sets to each other in order to draw conclusions and see whether the perceptions of the operators match with the reality we see in the files.

There was some discussion of competition in the pricing memorandums in 23 of the 50 contract files sampled. Pricing memorandums also indicated that one or more of the FAR 15 price analysis techniques were utilized on 48 of the 50 (96%) of the contract actions sampled. Of the 48 pricing memorandums, only 27 (56%), were justified by our examination. When the 24 survey respondents were asked, “Do you execute a pricing memorandum (or something similar) in the corresponding contract file which explains how you determined the offered and awarded price (or modified price) as fair and reasonable?”, 21 people (88%) answered that they frequently executed a pricing memorandum, 19 people (79%) responded that a pricing memorandum was critical, and 19 people (79%) responded that they had advanced or expert proficiency in completing pricing memorandums. The use of quantitative techniques (price indexing) was found only twice in the sample; however, a majority of survey respondents indicated that they utilized quantitative techniques when



determining price reasonableness. Supervisors were split on the skill level of their employees in this matter.

There were 21 contract file actions in the sample of 50 that indicated that an IGCE was utilized for establishing price reasonableness; only five of those were substantiated by catalogs, contact with a vendor, or by a government technical report. When the 24 survey respondents were asked, "Does the customer provide an IGCE?", seven people (29%) indicated that the requiring activity seldom/never provided an IGCE; seven people (29%) indicated that the requiring activity frequently provided an IGCE, and nine people (38%) indicated the customer always provided an IGCE.

When the 24 survey respondents were asked, "If the customer provides an IGCE, is it substantiated?", 13 people (54%) indicated that it was seldom or never substantiated.

When the 24 survey respondents were asked about their ability to determine whether an IGCE was reliable, 16 people (67%) of the respondents indicated yes. When the 24 survey respondents were asked whether IGCEs were used to determine price reasonableness for services, 11 people (46%) indicated yes.

A majority of contract files (25 of 32) in the sample contained market research information as required. 18 contract actions were task/delivery orders where market research had occurred on the base contract and therefore were not counted. A majority of the contracting officers surveyed indicated that market research was frequent (18 people), critical (18 people), and that contracting officers were proficient at conducting market research (19 people). In a majority of the cases, contracting officers indicated that both the customer and the contracting officer both provided market research information; however, 13 people (54%) questioned the reliability of customer-provided information. There were 12 instances of the 25 market research reports in the contract files where pricing information in the market research was used for a price comparison.



# Conclusions

## Summary

In the beginning, we presented an overview of this study, the scope and limitations, and the research questions. In the literature review we discussed audit findings published by the DODIG and the GAO that document past problems with price reasonableness determinations within DOD, summaries of previous research on this topic, and publications on price reasonableness techniques published by DOD. We discussed our methodology for data collection and analysis. Essentially, a random sample of 50 contract files was reviewed and a voluntary personnel survey was conducted in one DOD contracting office. The following chapter presented the overall findings of the contract file reviews and the contracting personnel surveys.

This last chapter presents answers to research questions by detailing applicable findings with the authors' analysis of such. The findings and analysis behind each research question are followed by the authors' recommendations. In addition, the last two sections of this summary chapter includes a discussion of the significance of the data we sampled for this report in comparison to what we found in our 2013 report plus our suggestions for future research.

## Findings/Analysis/Recommendations

This research investigated the following questions:

- 1) Do pricing memorandums deviate from Federal Acquisition Regulation (FAR) , Defense Federal Acquisition Regulation Supplement (DFARS) requirements and DFARS Procedures, Guidance and Information (PGI) procedures?
- 2) Do pricing memorandums document the type of price analysis used in pricing formulation? What price analysis methods are being used?
- 3) Do pricing memorandums refer to market research information or IGCE information?
- 4) If deviations in pricing memorandums exist, do they differ by the same characteristics and/or by unsimilar characteristics?
- 5) What are the most predominant price analysis techniques exercised in purchasing supplies versus services?



- 6) Why do pricing memorandums lack sufficient justifications and supporting information? What challenges are present in executing price analysis?

During the investigation of these questions, we came to the following conclusions after collecting and then analyzing the research data from the contract file review and survey results. The following is a summary of the research findings, analysis, and recommendations for each question except question four. Question four explores how the findings in the contract files were similar or not.

**1. Do pricing memorandums deviate from Federal Acquisition Regulation (FAR) , Defense Federal Acquisition Regulation Supplement (DFARS) requirements and DFARS Procedures, Guidance and Information (PGI) procedures?** There are multiple findings regarding this question. Rather than grouping our findings into one answer the authors have addressed them individually below:

**1a. Inadequate Documentation Finding:** A number of contract files that we reviewed were unable to demonstrate that prices paid were reasonable due to inadequate FAR price analysis methods, as depicted in Table 7: Summary of Inadequately Justified Price Analysis Documentation in the Files by FAR Price Analysis Technique.





**Table 7: Summary of Inadequately Justified Price Analysis Documentation in the Files by FAR Price Analysis Technique**

<b>FAR Price Analysis Techniques</b>	<b>Total</b>	<b>Supplies</b>	<b>Services</b>
Inadequate price competition	10 of 23	3	7
Acceptance of prior prices without establishing their reasonableness	7 of 12	3	4
Incomplete statements based on references to market research	0 of 12	0	0
Incomplete references to current price list, catalog, or advertisement	1 of 6	1	0
Incomplete comparison with IGCE or use of unreliable IGCEs	16 of 21	1	15
Offeror did not provide data that was appropriate	0 of 1	0	0
No documentation in file for price reasonableness justification	2 of 50	2	0
<b>Totals of inadequate price analysis documentation for price reasonableness justification</b>	<b>36</b>		

**1a. Analysis:** From this data, we determined that the personnel involved in performing these contract actions did not include sufficient documentation to support the price analysis method used as required by FAR and DFARS. Considering the number of inadequate price analysis found in our sampled memos, it appears that contracting personnel are not familiar with how to appropriately perform and document price analysis. In particular, two types of price analysis, prior prices and IGCEs were performed and documented incorrectly more than 50% of the time. See details specific to prior price and IGCEs below under answers for 1c and 3b.



**1a. Recommendation:** A lack of supporting documentation could be easily corrected upon discovery by local audits and returning the contract actions to have the applicable contracting personnel include the necessary documentation in the file. Additionally, reinforcement by local procurement leadership in the importance of file documentation and including more hands on type training to make sure personnel understand what is and what is not proper supporting documentation.

We came across impressive recommendations from the contracting personnel who completed the surveys. When asked for suggestions on improving pricing documentation within the agency, respondents made the following comments:

- “It would be a good idea to review the FAR definitions of what constitutes an acceptable fair and reasonable determination. Even though training has been conducted on this topic, this is the sort of thing that should be reviewed periodically.”
- “A peer review could definitely be useful.”
- “(Perform) in-house quality assurance surveillance assessment (QASA) reviews (on the contract files) and provide training from the findings.”

When asked to make suggestions on DAU pricing courses, respondents replied with the following that support improved documentation:

- “Having a ‘real’ contract to analyze would definitely improve the courses.”
- “More on-site instruction. Not enough emphasis on sole-source/single source price analysis of commercial items. Most of the courses revolve around cost analysis—which is a small percentage of our buys. By the time we get an acquisition that requires cost analysis we’ve forgotten the course material (since most of the classes are taken within our 1st 2 years of employment).”
- “Often the applicability and level of documentation is missed.”

**1b. Contract Review Board Checklist Finding:** The contracting office for the DOD activity reviewed includes a local contract review board (CRB) checklist that also served as a business clearance memorandum (BCM) for significant actions as designated by the senior procurement officer. This checklist was extensive, including a section on pricing, and provided contracting personnel a means to check off any FAR/DFARS requirements, pre-award administration policies, procedures, and techniques that were utilized. The use of this checklist as a BCM makes it



difficult for contracting personnel *to fail to at least identify the type of price analysis utilized in an award decision.*

**1b. Analysis:** We agree that the type of price analysis documented was indeed identified throughout the file review. It was the lack of poor documentation in the files that influenced our decisions to rate a pricing memo as justifiable or not. However, one would think that if the CRB were digging a little deeper into the documentation behind the identification of price analysis conducted, they would unearth some of the very same findings we made. Overall, we believe this checklist could be of use agency wide with the precaution of a deeper review of the documentation identified in the checklist.

**1b. Recommendation:** Well written checklist are indeed helpful to both contracting personnel and for file reviewers. In particular, we found that file reviewers use the checklist without verifying the applicable documentation. Reviewers should build their own checklist based on the actual documentation they find and review instead of just using the existing checklist in the file for their review.

**1c. Comparison of Current Offered Pricing Findings:** Eleven pricing memorandums included some comparisons of current proposed (offered) prices when the lowest price was smaller than 80% of the next lowest price. For example, if the prices are \$10, \$50, and \$55, respectively, then lower than 80% would be anything lower than  $80\% \times \$50$ , which equals \$40. So the lower quote of \$10 would be considered smaller.

In one file a price from a technically unacceptable offeror was still used to make a price comparison. This inappropriate comparison raises the issue that although competition is present and sought, is there actual price competition?

**1c. Analysis:** Proposed prices that are not within 20% of the next lowest price raise questions to the reliability of the proposed prices, and the existence of actual price competition. This could indicate that there is a mistake in offered price, a misunderstanding of the contract requirements, etc. In few cases there was documentation that included some determination of why there was such a large gap between the lowest price and next valid price or a price verification request by the CO to the lowest offeror.

According to the FAR Part 6, the award of a contract to a supplier based on lowest evaluated price alone can be false economy if there is subsequent default, late deliveries, or other unsatisfactory performance resulting in additional contractual or administrative costs. While it is important that Government purchases be made at the lowest price, this does not require an award to a supplier solely because that



supplier submits the lowest offer.

**1c. Recommendation:** A contractor who cannot perform is never a good deal at any price. More affirmative action needs to be taken by contracting personnel to affirm an offeror's ability to perform at a low price which is considerably lower than the next offered price to ensure that the low price is fair and reasonable.

**1d. Comparison of proposed price to previous price (Historical)**

**Findings:** Comparison of proposed prices to previous (historical) prices paid was utilized on 12 contract actions. In the seven instances that had an invalid previous price documented in the file, there was a previous price that could not be validated for one or more of the reasons displayed in Figure 26: Contract File Data—Prior Price Disqualifiers. Invalid previous (historical) prices were found because of one or more of the following reasons: time lapse, changes to terms and conditions, or uncertain reasonableness of the prior price.

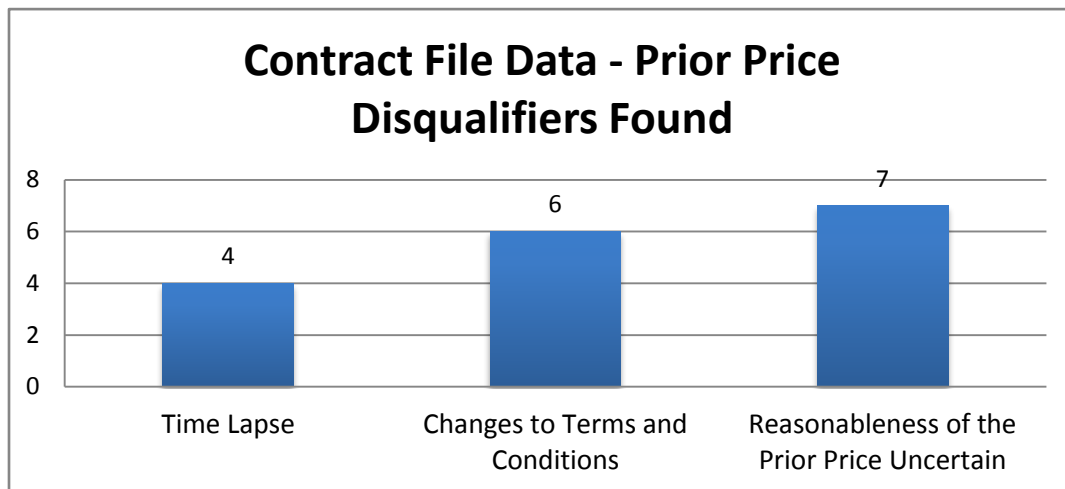


Figure 26: Contract File Data—Prior Price Disqualifiers

**1d. Analysis:** If invalid previous prices are utilized, then price reasonableness has not actually been determined.. For example, it would not be sufficient to use price(s) from a database paid by another contracting officer without understanding the type of analysis that was performed to determine the price. DOD strengthened guidance on this subject in PGI 215.403-3(4) per below:

*Reliance on prior prices paid by the Government.* Before relying on a prior price paid by the Government, **the contracting officer must verify and document that sufficient analysis was performed to determine that the prior price was fair and reasonable.** Sometimes, due to exigent situations, supplies or services are purchased even though an adequate price or cost



analysis could not be performed. The problem is exacerbated when other contracting officers assume these prices were adequately analyzed and determined to be fair and reasonable. **The contracting officer also must verify that the prices previously paid were for quantities consistent with the current solicitation. Not verifying that a previous analysis was performed, or the consistencies in quantities, has been a recurring issue on sole source commercial items reported by oversight organizations.** Sole source commercial items require extra attention to verify that previous prices paid on Government contracts were sufficiently analyzed and determined to be fair and reasonable. At a minimum, a contracting officer reviewing price history shall discuss the basis of previous prices paid with the contracting organization that previously bought the item. These discussions shall be documented in the contract file.

Since previous price comparison is one of the two preferred price analysis techniques, it is used quite often by contracting personnel in determining price reasonableness. This method is effective provided the validity of the comparison (similar items, categories, quantities, quality, qualifications, and/or circumstances) and the reasonableness of the previous price(s) can be established.

In this sample, more than 50% of the previous price comparisons made were invalid since the previous price was not verified. This illustrates why the authors determined that the contracts sampled do deviate from FAR/DFARS/PGI requirements and procedures. Further, If contracting officers are not diligent in validating previous prices prior to using them for current pricing actions, then unreasonable prices can continuously perpetuate themselves into future contracting actions.

**1d. Recommendation:** Contracting officers MUST first validate previous prices before using them in a price reasonableness determination and then adjust those prices to make them comparable with the current offered price., If the previous price is not found to be valid, the CO MUST find another method to determine price reasonableness. In-house reinforcement of how a previous price is verified is needed in this contracting activity. DAU must include more classroom focus on this subject. The authors plan to write an article to be included in the National Contract Management Association Journal to assist in spreading the importance of performing this type of price analysis correctly



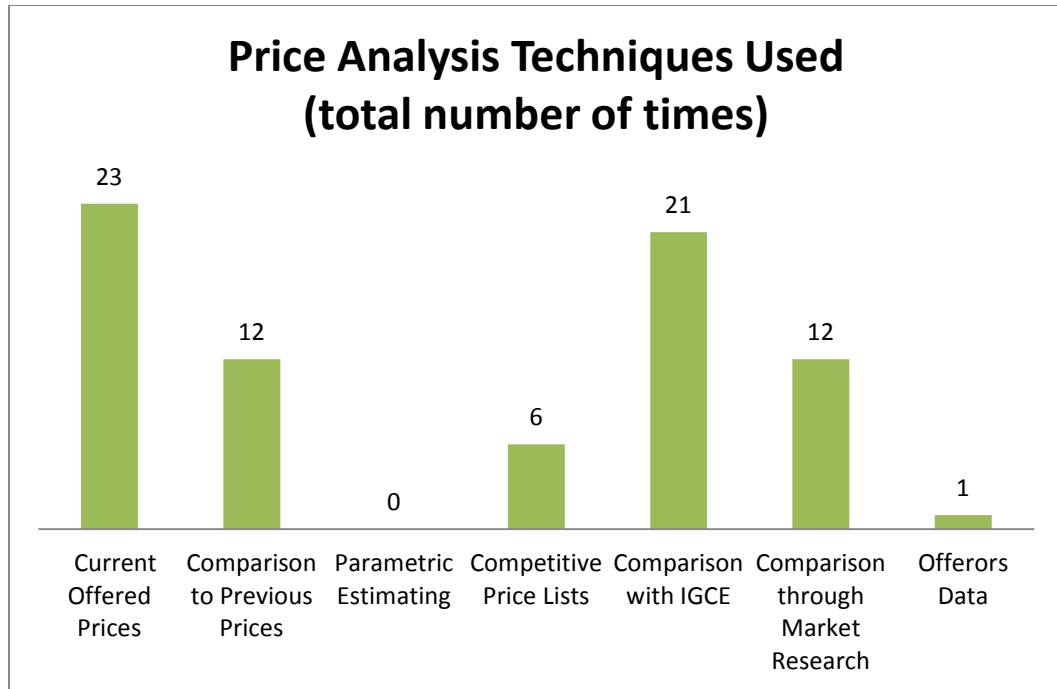
In addition, consider the following response to the DODIG by the Director Defense Pricing for such situations. He suggested that COs use the support of the Pricing Centers of Excellence and the Contract Business Analysis Repository Information (CBAR) database. He stated that both methods are designed to supplement and improve the pricing skills of the acquisition workforce.(DODIG,. 2014)

The authors agree that the Defense Director recommendation to use the CBAR database is useful but its focus is on contract pricing actions exceeding \$25 million. Also at present the CBAR database does not include contractor sales data or validity of previous prices which is what the DODIG report number 2014-088 referred to.

**2. Do pricing memorandums document the type of price analysis used in pricing formulation? What price analysis methods are being used?**

**Findings:** All of the pricing memos documented some type of price analysis used in determining that the price was reasonable. The research findings show that 23 of files used current competitive prices as a price analysis method (which is 46% of the total files). Comparison with the IGCE was documented in 21 pricing memos out of the 50 files, namely, 42% of the files. Previous prices (historical) documentation and comparison through market research were present in 12 of the 50 files, totaling 48% of the files as seen in Figure 27: Contract File Data-Price Analysis Techniques Used.





**Figure 27: Contract File Data-Price Analysis Techniques Used**

**Analysis:** Current offered prices led the price analysis techniques used with IGCEs closely behind according to the contract files sampled. Noteworthy, the contract files documented that adequate price competition through current offered prices is prevalent in most of the reviewed files. Normally, adequate price competition establishes price reasonableness and no other price analysis techniques are needed. IGCEs are not as reliable as current offered prices therefore their usefulness is questioned. Further price analysis techniques should supplement an IGCE.

The application of price analysis techniques is notable. Contracting personnel at this office recognize the importance of price analysis in determining price reasonableness. However, as discussed in 1a. (Inadequate Documentation) contracting personnel did not include sufficient documentation to support the price analysis method used as required by FAR and DFARS. Without the proper supporting documentation, the value of the techniques are questionable.

**Recommendation:** Clearly the routine use of price analysis techniques is certainly present in pricing memos so no recommendation is required. However the recommended solutions for inadequate documentation under 1a apply at this point.



**3. Do pricing memorandums refer to market research information or IGCE information?** There findings regarding market research and IGCEs are not grouped together and the authors have addressed them individually below:

**3a. Market research Findings:** There were 12 contract pricing memorandums reviewed in the contract files that did utilize market research reports to establish price reasonableness, and a majority of the files in the sample contained market research reports as shown in Figure 28. Of the 27 market research reports, 18 (67%) of those contracts addressed the type of pricing data collected, as shown in Figure 29. There were nine contracts in the sample that did not address the type of pricing data collected in the market research report, and there were five contracts in the sample that did not have a market research report that should have. In seven files, the IGCE and market research report were combined into one document.

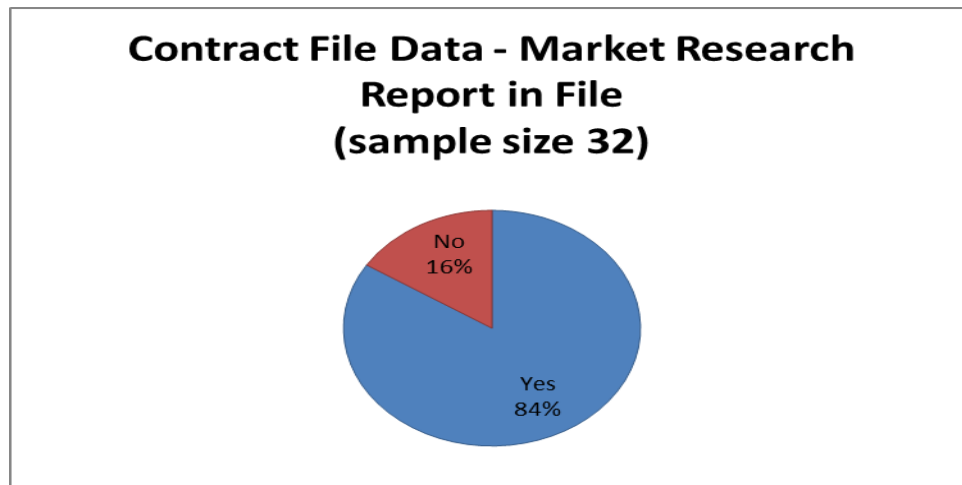


Figure 28: Contract File Data-Market Research Reports





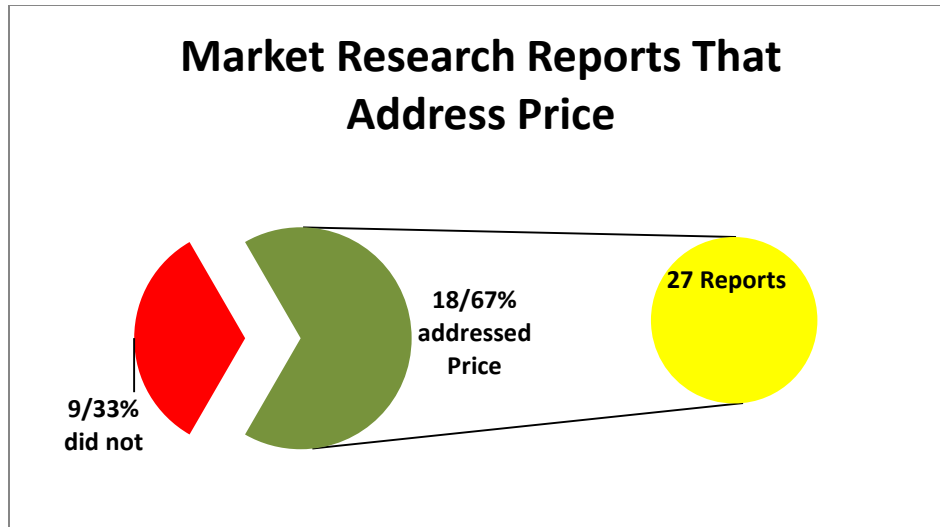


Figure 29: Contract File Data-Market Research Reports That Address Price

When the 24 survey respondents were asked whether the customer provided market research information, 21 people (88%) responded that both the requiring activity and the contracting activity provided market research information. When asked about the adequacy of the market research information, 13 people (54%) indicated the customer seldom provided adequate market research information, nine people (38%) indicated that the customer frequently provided adequate market research information, and 8% of the respondents indicated the customer never provided adequate market research information, as shown in Figure 30.

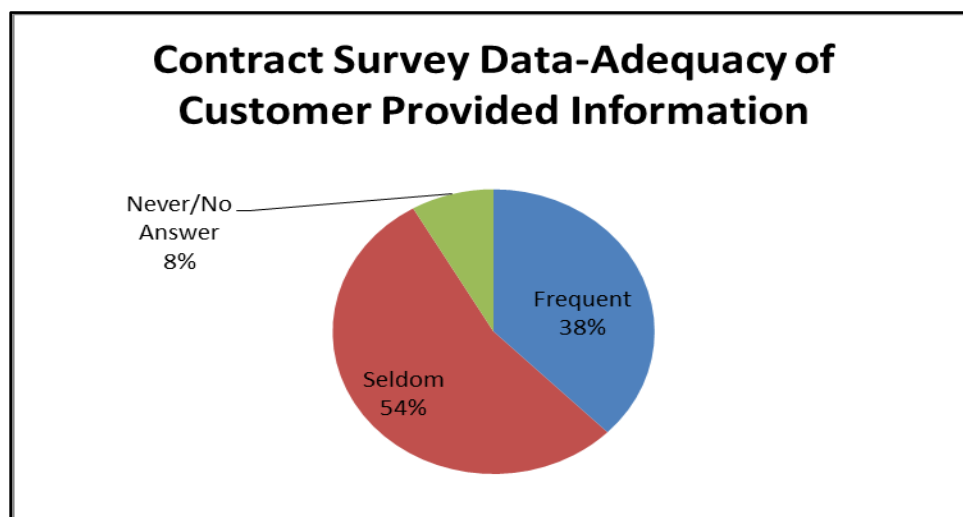


Figure 30: Contract Survey Data—Adequacy of Customer-Provided Information



**3a Analysis:** The authors found that market research is included in most of the files we reviewed. Market Research does improve the buyers' understanding of pricing in the marketplace. The authors didn't look in depth at the quality of the market research reports but did note that price was addressed in most of the market research reports we examined. So we conclude that in the market research reports that examined pricing should have improved the buyers' understanding of pricing in the marketplace. Redfern et al. (2013) found that contracting personnel did not always believe customer-provided information to be adequate; our research draws the same conclusion. According to the contracting personnel survey, 13 people (54%) indicated the customer seldom provided adequate market research information. Also, we found that reports that combined an IGCE with market research were confusing as to whether market research was done to support the IGCE or as full market research reports.

**3a Recommendation:** Reliable market research from their customers/requirement activities will improve the buyers' understanding of the marketplace. It will also give the buyer an opportunity to make better decisions when it comes to prices offered. The contracting and requiring activities should review agency guidance on market research and consider combined in house training. This will give both parties responsible for market research an opportunity to express their issues with conducting market research, documenting market research, and applying the information in the the market research report to inform pricing determinations.

(Gera and Maddox, 2013, pg. 54) recommend ed that FAR Part 10 require that pricing be discussed in the market research reports. The FAR identifies market research as a method for the determining price reasonableness but but does not require that pricing be documented in the report. We still have the same opinion and would like to include a more extensive review of market research reports in the files.

For future research, the authors should review the quality of the market research reports. Knowledge of marketplace suppliers and prices can be critical to the government's ability to negotiate a reasonable price. Poorly done market research could lessens an activity's ability to achieve fair and reasonable prices. We would focus our research on how market research was conducted, and if it informed and influenced the contracting officer's analysis of price reasonableness

**3b. IGCE Findings:** The IGCE has two roles: One as price analyis technique per FAR parts 13 and 15. Second, IGCEs also support what the customer and contracting offices believes is the "should price" and should be completed before



receipt of price proposals. In answering this question we are only examining the IGCE's role as a price analysis technique.

Next to current offered prices, IGCEs were heavily used as the basis for price reasonableness in 21 of the 50 files, essentially 42% of the contract actions reviewed. However, we found that only five of the 21 IGCEs used for determining price reasonableness could be substantiated and determined reliable. When the 24 survey respondents were asked, "If the customer provides an IGCE, is it substantiated?", 13 people (54%) indicated that it was seldom or never substantiated. When the 24 survey respondents were asked about their ability to determine whether an IGCE was reliable, 16 people (67%) of the respondents indicated yes. When the 24 survey respondents were asked whether IGCEs were used to determine price reasonableness for services, 11 people (46%) indicated yes.

Gera and Maddox (2013) recommended that agencies increase the importance of IGCEs. The contracting office we reviewed provided a IGCE template to the acquisition customer for assistance in filling out IGCEs since they are required to be completed by the acquisition customer. The IGCEs were required to be completed before receipt of the contractor's price proposal. No further guidance on how complete the template was available. An IGCE was required on each purchase, but the template standard varied depending on whether the purchase was for supplies or services. A vendor quote would satisfy the requirement for a commercial item supply purchase, but a more substantiated IGCE was required for services or non-commercial procurements.

The FAR lists an IGCE as a price analysis technique in both Parts 13 and 15, but it does not elaborate on what substantiates an IGCE. Best practices in pricing handbooks require that the source and methodology used in developing IGCEs be documented. More detailed information is found in *CPRG Volume 1*, paragraph 6.1.5, on techniques to properly validate and use an IGCE (Office of the Deputy Director of Defense, 2012).

**3b. Analysis of IGCEs:** The use of an IGCE to determine price reasonableness is frequent, and the reliability of IGCEs is not consistent. The contract personnel survey findings noted that more than 54% believed that IGCEs are never substantiated by the customer but that 67% personally knew how to determine the reliability of a IGCE. Our actual contract file review findings raise questions regarding what the personnel in this survey considered to be a reliable IGCE. In contrast, only 23% of the IGCEs in the contract files identified as a price analysis techniques in determining a fair and reasonable price could be substantiated



as reliable, see Figure 31. Contrast between IGCE reliability. The fact that more than 54% questioned the reliability of a customer's IGCE is discouraging because the customer's IGCEs are still being used for determining price reasonableness.

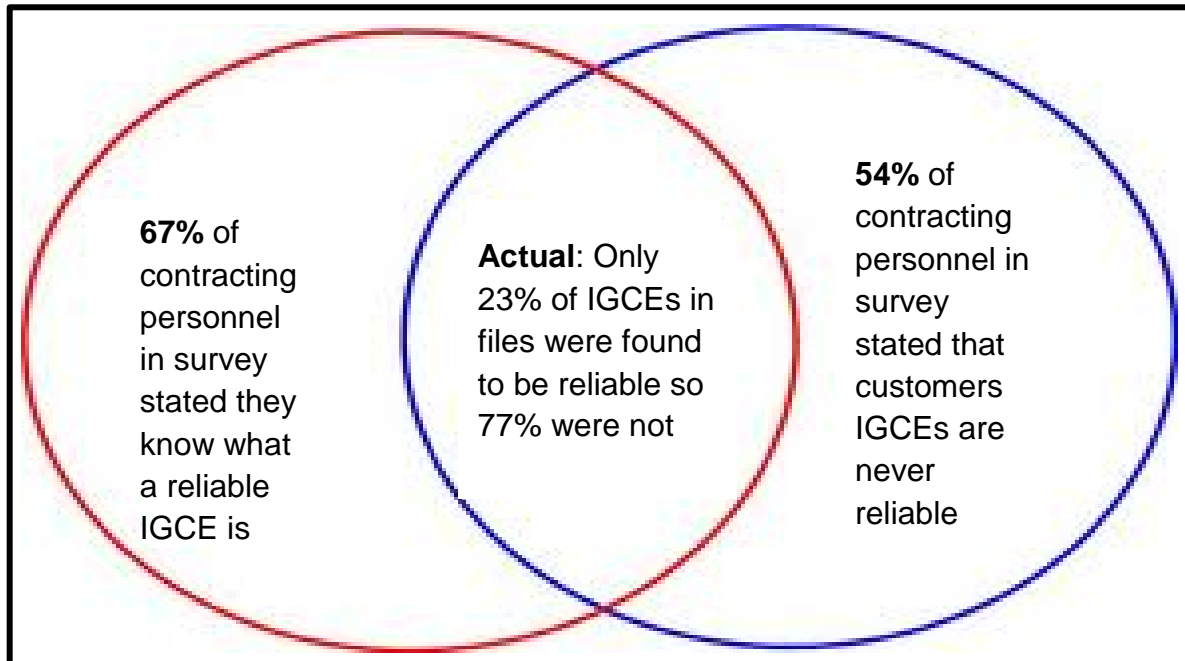


Figure 31: Contrast between IGCE reliability

We found IGCEs were used as a primary price analysis comparison in 42% of the contract files we reviewed. In conclusion, this contracting office's IGCEs basically are not effective in determining price reasonableness. However, the contracting personnel are still using the IGCE on a regular basis to determine a price is fair and reasonable though the contracting personnel know they are most likely not reliable. The fact that 77% of the IGCEs we examined are unreliable and conversely that 64% of the personnel think they know what a reliable IGCE is indicates that the IGCEs in this contracting office's files are truly questionable.

**3b. Recommendations:** The reliability of the IGCE should be considered when determining the usefulness of this technique. We recommend that contracting personnel become acquainted with what is a reliable IGCE by reviewing CPRG Volume 1, paragraph 6.1.5, on techniques to properly validate and use of an IGCE. DAU needs to add focus on the importance of the IGCE what makes it reliable in their pricing courses.



In addition, authors still find last year's recommendation in their 2013 report also applicable. The authors propose that government activities increase the importance of IGCEs and consider the following steps to make IGCEs more reliable for use in conducting price analysis: (1) the analysts should be presented with good training on what good IGCEs are and what to document, (2) the individuals that develop IGCEs need to know how to do it (there should be more specific training in this area), (3) an online check system should be put in place where government IGCEs are accepted if and only if the substantiation is provided, and (4) there should be consideration to acknowledge IGCEs in the FAR/DFAR/PGI with more importance than it currently is given. The policy-makers need to appreciate how much IGCEs are being used and how more guidance will assist analysts in determining what the analyst "should pay" and hopefully giving the analysts the ammunition to negotiate better prices.(Gera and Maddox, pg.62)

**4. If deviations in pricing memorandums exist, do they differ by the same characteristics and/or by unsimilar characteristics?**

In 46% of the files, deviations in pricing memorandums do exist as depicted as inadequate justification in Table 8: Contract File Data- Adequate versus Inadequate Justification for Price Reasonableness. Some deviations found in the files reviewed were consistently the same and others uniquely not similar to others.

**Table 8: Contract File Data – Adequate vs. Inadequate Justification for Price Reasonableness**

	Adequate Justification	Inadequate Justification	No documentation in file	Total	Percent Justified
<b>Contract Files</b>	27	21	2	50	54%
<b>Services</b>	15	16	0	31	48%
<b>Supplies</b>	12	5	2	19	63%

A majority of the pricing memorandums do deviate by two consistent characteristics: the lack of supporting documentation to justify the technique utilized to establish price reasonableness and the use of unsupported IGCEs. See findings that support inadequate documentation under the answers to 1a and findings behind the unsupported IGCEs in the answers to 3b above.



The pricing memorandums in the sample reviewed established that the contracting officer determined price reasonableness as well as listed the technique utilized; however, substantiating documentation (e.g., calculation sheets, reference materials such as catalog data found on line, copy of previous price documentation, and methodology) are not always included. supporting the source of their recommendations. A very small percentage of the IGCEs in the contract files were reliable enough to support that the offered price being analyzed was indeed reasonable. Contracting personnel listed the IGCE as justifying the price of 17 service and 4 supporting contracts. Only five of the 21 were judged as reliable and therefore substantiated by the authors.

Some of the files reviewed contained unique deviations in their pricing memos. The following notes the assortment of the unique problems we uncovered in the pricing memos and the authors's assessment of what should have occurred:

- Parametric estimating was used for price justification according to pricing memo but there was no evidence or demonstration of a formula used to produce an estimate of what the price should be nor a discussion on how the chosen parametric would be applicable.
- Competition was sought but only one vendor could meet gov't requirements for a commercial item being purchased. Contracting personnel justified the offered price by comparing it to the same vendor's price in a previous contract that was sole source. The original price was under the simplified acquisition threshold so no cost or pricing data was requested by contracting personnel in error. (It appears that in the contracting personnel in the previous purchase believed that "data other than certified cost or pricing data cannot be requested under the SAT") When using prior prices, the CO should ensure that those prices were found to be reasonable based on price analysis or competition before accepting prior rates for determining the reasonableness of rates used in the current proposal. In this situation, the prior price was unreasonable. At that point the CO should have requested that the offeror provide sales data or "data other than certified cost or pricing data" in accordance with DFARS/PGI215.402-2 and 3.



- A FAR part 8 purchase from UNICOR did not meet the test of comparison to outside prices in accordance with FAR 8.602(a)(2). Additional training needed for how part 8 purchases should be analyzed for price reasonableness.
- Two pricing memos noted comparison of offered prices as the justification for price reasonableness. However, there were two quotes listed from distributors only for the same brand name. It appeared that no true price competition existed. When using Proposed Prices ( FAR 15.403-1(c)(1) ) for price analysis, the proposed price must be submitted by a firm competing independently for contract award. In this case the Distributors are selling the same manufactured product so the only price competition is the distributor's mark up and is not the basis of the product's real price.
- Competitive price justification was based on a comparison of the total price of many contract line items (CLINS) to include option year prices from several offerors. A price analysis comparison was made for the base year prices to help justify the total price, However, no evidence option years were evaluated to determine if the prices were unbalanced in accordance with FAR 14.404.
- FAR 13.5 test procedures allowing the use of FAR part 13.106 limited price justification rules was used on an commercial item above the maximum threshold of \$6.5 million dollars. This item should have been analyzed in accordance with FAR 15.4. Limited details in pricing memo so it was impossible to justify the price.
- An IGE was more than 40% lower than the actual price submitted by one offeror. The applicable contracting personnel documented that he/she believed the IGE was low because it was not based on current price changes due to inflation. The offeror's price was accepted as fair and reasonable in accordance with the low IGE. Therefore, the offered price could not be reasonable based on this poor type of justification. The contracting personnel in question should have requested an updated IGE and potentially conducted more price related research to justify the offered price.





- In a sole source awarded cost reimbursement task order contract, a task order was justified based solely on the original contract estimated price. The task order was not independently justified for price reasonableness. This might have been justified if the original price was from a fixed price that was analyzed for reasonableness. In this case the original contract prices were just cost estimates and not final prices that could be used for pricing task orders. Unless there is negotiated price sheet in the original contract that will be used for pricing the task orders issued, each task order's price must be analyzed for price reasonableness.
- A 24 million dollar cost reimbursement contract was awarded based on inappropriate cost analysis. No price analysis documented. Labor hours had limited technical justification. The fixed fee for this cost plus fixed fee (CPFF) effort was based on overhead rates and labor rates that were not agreed to by the Defense Contract Management Agency (DCMA). The offeror's proposed overhead and labor rates had yet to be negotiated by DCMA. The CO should have used recommended DCMA rates or negotiated the rates for the determination of the fixed fee. Instead, the file stated that the price of the contract would be adjusted in the future after the rates were negotiated by DCMA. It appears that the CO accepted the offeror's proposed rates for calculating the fixed fee. As a result the final fixed fee on the contract was probably based on unrealistic rates that were never analyzed. The fixed fee cannot be adjusted at a later time per the documented pricing memo by the CO. If it was, it would become a cost plus percentage of costs pricing arrangement (CPPC) which is prohibited by statute.
- The winning offeror was not the lowest price. The statement justifying the higher price paid only mentioned that the lower offer would incur additional government funding for a test of their product. This statement was inadequate for a trade off analysis in determining the best value of the proposed offers. Indeed the lower price might have cost more for government testing but the justification itself needed to describe the tradeoff of the proposed prices against the technical worth of the offered product.





- In accordance with FAR 15.101-1, this process permits tradeoffs among cost or price and non-cost factors and allows the Government to accept other than the lowest priced proposal. The perceived benefits of the higher priced proposal shall merit the additional cost, and the rationale for tradeoffs must be documented in the file in accordance with 15.406. Additional training in making tradeoffs would be applicable.

##### **5. What are the most predominant price analysis techniques exercised in purchasing supplies versus services?**

This data is listed in Table 9, Contract File Data-Answers to the Question “What Was the Documented Justification for Price Reasonableness?,” offers insight into the predominant type of price analysis techniques exercised in purchasing supplies versus services.

**Table 9: Contract File Data-Answers to the Question “What Was the Documented Justification for Price Reasonableness?”**

<b><u>Price Justification in Pricing Memos</u></b>	<b><u>Total number</u></b>	<b><u>Supply</u></b>	<b><u>Services</u></b>
<b>Comparison to current offered price?</b>	<b>23</b>	<b>10</b>	<b>13</b>
<b>Comparison to previous prices paid?</b>	<b>12</b>	<b>4</b>	<b>8</b>
<b>Parametric estimating?</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Competitive published price lists?</b>	<b>6</b>	<b>5</b>	<b>1</b>
<b>Comparison of proposed prices with independent government cost estimates?</b>	<b>21</b>	<b>4</b>	<b>17</b>
<b>Comparison of proposed prices obtained through market research?</b>	<b>12</b>	<b>5</b>	<b>7</b>
<b>Analysis of sales data provided by the offeror?</b>	<b>1</b>	<b>1</b>	<b>0</b>



**Findings:** According to the contract file data sampled, both supplies and service made use of comparisons to current offered prices and market research prices equally as price analysis techniques.

Services are far more dependent on IGCEs than supplies. 17 of 31, or 55 % of service contracts tapped IGCEs as a primary price analysis technique. Only 4 of 19 supplies, 21% benefitted from IGCEs.

Supplies take advantage of competitive price lists in justifying price reasonableness much more often than services. Five out of six employments of competitive price lists as a price analysis technique, represents a rate of 83% utilization for supplies vs. services.

**Analysis:** The why, we do not know, but can infer that it is much easier to find prices in the marketplace for supplies than for services thus the use of competitive price lists. For services, there is more dependence on IGCEs to make price comparisons since IGCEs generally disclose an estimate of labor hours by the type of effort required. IGCEs are more effective for justifying the price of services than other price analysis techniques outside of two or more current offered prices.

**Recommendations:** Same recommendation as last year's report by Maddox and Gera (2013) "Buying services is different than buying supplies; that also means that they are different when it comes to pricing. A step should be added to the services acquisition guidebook that focuses just on the pricing of services. Possibly the FAR, DFARS, and PGI need to reframe price analysis methods that are more useful in purchasing services, as opposed to current references to supplies only."

IGCEs play such an important part in pricing services as a "should price" before the request for vendor prices and as a tool to determine price reasonableness after a price is proposed. The generation of local guidance and policies and actual instruction to educate the customer/requirements personnel could bring true and valuable savings. See further recommendations under question and answer to 3b above.

## **6. Why do pricing memorandums lack sufficient justifications and supporting information? What challenges are present in executing price analysis?**

**Findings:** When the 24 survey respondents were asked what the challenges in executing price analysis, determining price reasonableness, and documenting were, four people (17%) indicated a lack of knowledge in conducting price reasonableness determinations, nine people (38%) indicated the amount of time to



complete price reasonableness determinations, four people (17%) gave other reasons as challenges, and seven people (29%) did not answer the question. (See Figure 32)

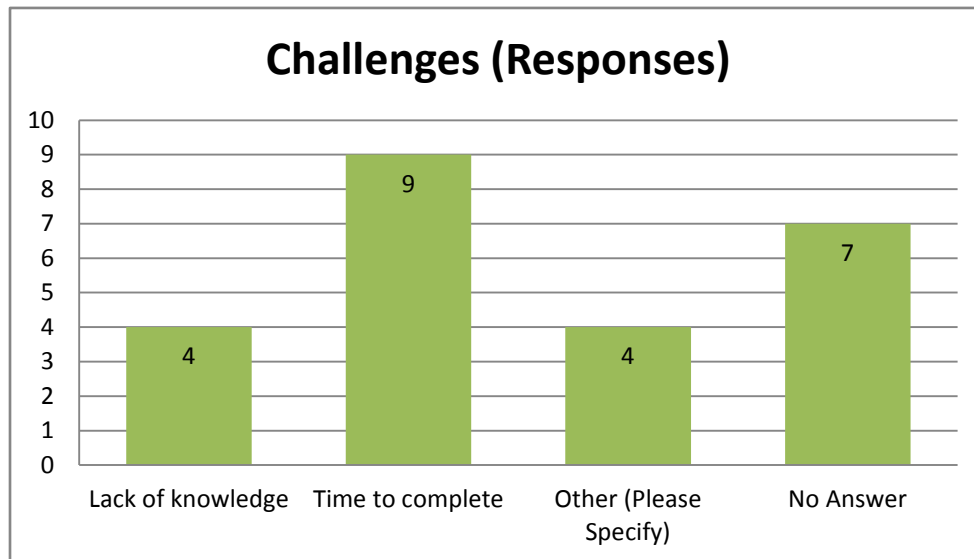


Figure 32: Answers to the Question “What Is Your Challenge in Executing Price Analysis, Determining Price Reasonableness, and Documenting?”

The respondents who indicated other reasons gave the following inputs:

- “Lack of competition and sufficient IGCEs can be somewhat challenging.”
- “Sole-source acquisitions—finding similar products in the market to compare prices with.”
- “Conducting market research when the item is sole source/single source and no other vendors can provide price quote.”
- “Inadequate product description from the requiring activity.”
- “Lack of similar offerings; sole source prevents apples-to-apples price analysis with other offerings.”

**Analysis:** Redfern et al. (2013) found that pricing memorandums lack justifications and supporting information because of a lack of time to complete adequate price reasonableness determinations. Our research draws the same conclusion. A majority of the survey respondents who answered this question also gave specific reasons as to why time was a challenge. Each comment can be linked to specific time-related measures, such as procurement action lead times (PALT) or



other time-consuming activities directly linked to the procurement.

The personnel survey results indicates that the contracting personnel in the surveyed office were well qualified, with a majority of personnel having more than five years of experience. 18 of 24 surveyed had both level I and II pricing course, namely 75%. However, four personnel had no level I pricing training. Price Analysis is only taught in level I courses.

The survey did not ask respondents to quantify manpower shortages, but at least one supervisor did believe manpower shortages were a problem for the agency. The supervisor's opinion that manpower shortages are a problem is consistent with the findings of several DODIG reports that found high workloads and shortages of qualified personnel lead to the government paying more than what is fair and reasonable.

Another supervisor identified the skill level of the employees as the organization's biggest challenge. Considering the poor quality of price analysis (unjustified) documentation found in 23 of 50, 46% of files reviewed, the authors agree and conclude that employees skill levels are not up to standard.

Overall, the use of price analysis techniques are common but there are serious deficiencies when it comes to actually using the techniques correctly and including proper supporting documentation. Poor documentation to support the price reasonableness determination was the biggest weakness. When competition by itself does not establish price reasonableness, the most utilized techniques for determining price reasonableness within this office were comparison through market research, comparison to previous pricing, and comparison to IGCEs. The use of indexing, regression, and parametric analysis is uncommon for commercial item purchases; however, contracting professionals in this contracting office are aware of the techniques and are trained to use them. Consistent with DODIG report findings, this contracting activity is concerned with high workloads and shortages of personnel. Survey results and comments show that contracting personnel are spending time either validating customer requirements or researching requirements on their own to validate inadequate customer provided market research information and customer-provided IGCE documentation.



The contracting office that provided the contract file data and personnel survey data is concerned with pricing inaccuracies and seeks to constantly improve its adherence to policy with extensive internal reviews. However, the number of unjustified pricing memos we reviewed is worrisome. Table 10 shows that over \$3 million in supplies and \$39 million in services was not adequately justified for price reasonableness.

**Table 10: Summary of Unsubstantiated Pricing Memos by Service, Supply, and Commercial**

	<b>Value of Contract Action in Dollars</b>	<b>Commercial</b>	<b>Non-Commercial</b>
<b><i>Supplies</i></b>			
1	64,187	x	
2	270,495	x	
3	279,373	x	
4	375,958	x	
5	1,013,961	x	
6	1,165,500	x	
7	8,788,306	x	
Total Supply	\$3,257,294		
<b><i>Services</i></b>			
1	152,007	x	
2	175,490	x	
3	221,199	x	
4	401,995	x	
5	460,197	x	
6	485,441	x	
7	819,885		x
8	931,254		x
9	1,193,057		x



10	1,445,402		x
11	1,493,000		x
12	1,567,462		x
13	1,941,400	x	
14	1,962,969		x
15	2,665,212		x
16	23,800,000		x
Total Services	\$39,628,150		

**Recommendation:** This activity needs to take a hard look at what is disabling the activity from performing price analysis properly such as:

- Determine if their current assessment methods like the contract review board and quality assurance assessment team consistently follow price reasonableness standards in accordance with the FAR/DFARS,
- Train and retrain contracting personnel on price analysis techniques in determining price reasonableness along with what is proper support documentation for pricing.
- Eliminate or reduce the challenges that contracting personnel have in executing proper price reasonableness, e.g Guidance is needed on “Conducting market research when the item is sole source/single source and no other vendors can provide price quote.”
- Add adequate guidance on the preparation of IGCEs and market research reports by customers (requiring activities).

## Comparison to Past Research

### Contract File Data-

It would be easy to just go table by table and list the differences and the similarities but we want to focus on the real reason why we are doing this research and what we have learned so far. Basically we wanted to know if price analysis and the associated price analysis techniques are being exercised and conducted correctly in determining price reasonableness. We believe that when price analysis is not conducted properly there is reason to believe the prices offered and paid are



unreasonable.

Our data in this report came from a different agency. Dollar values were higher (nothing below 150k) and there appeared to be much more oversight of buys at any value within this agency. Little use of Part 13 simplified pricing procedures like last year's data in purchasing commercial items. However with all of these differences the results are very much the same. Inadequate documentation. Little use of quantitative skills learned in pricing classes, unreliable IGCEs; little requests for offeror data when needed. This year we added emphasis on auditing previous prices as a price justification and particularly if they were sole source. In many of the files we found that contract specialists were using previous prices that were not reasonable and continuously perpetuating the same unreasonable price for justification on other proposed price. We also prodded further into the documentation that used current offered prices as the price justification. We found that contracting personnel were not verifying low prices that were considerably less than the next offered price. It would have been interesting to find out if the contractor in those cases actually delivered such low prices. In reviewing what type of price justifications are used in supplies versus services we found little differences. Essentially in cases other than current offered prices, IGCEs were the most used for justifying a price for services and published price lists/market research for supplies. One significant improvement this time was the access to real files. Last year we had only access to electronic files. It was hard to retrieve and review files if they were not well filed. This allowed us to look closer at the documentation and much easier to find documentation misfiled or misnamed.

Our recommendations are not very different. Similar issues same suggestions. We would like to conduct a comprehensive exploration of market research reports. We think there maybe a link to why so many IGCEs are unreliable.

Inaccuracies in pricing memorandums can result in increased procurement costs, sustained protests, and loss of agency contracting authority and we conclude that those inaccuracies continue to possibly all DOD agencies. The big questions is can we remove the reasons for these inaccuracies?

### **Personnel Survey Data-**

In comparing the surveys to last year's report one would think this is the same personnel who submitted their responses. The majority of the personnel have more than 5 years of experience in supplies or services. Few responses were received from personnel with 3 years or less experience. The majority were qualified at level II—very few at level III. Most had taken level I and II contract pricing



courses. Time to complete and not skill level were still the challenge in executing price analysis according to the nonsupervisory personnel. In both years, supervisors pointed to skill level as an issue. In comparing the file data and survey data, personnel responded that they use quantitative methods often but we did not find any real use of quant methods in the quant files.

We added new questions to the survey directed to effectiveness of DAU contract pricing classes. The majority said they were effective. However all the comments supported that price analysis is underemphasized in the courses. Researchers will consider scaling down the questions to focus on the areas on price analysis where we found inadequate documentation. Explore why the use of IGCEs are more prevalent in service vs supply purchases.

Final Note: There is a DFARS case number 2013-D034 on developing standards in the DFARS for determining price reasonableness. It would implement the requirements of National Defense Authorization Action Act (NDAA) section 831 of FY 2013. A draft proposed rule is scheduled for 11/26/2014. This proposed rule will most likely make the determination of price reasonableness less subjective. The authors hope the proposed rule will give contracting personnel more helpful guidance on determining price reasonableness.

#### Future Research

For future research, the authors should review the quality of the market research reports. Knowledge of marketplace suppliers and prices can be critical to the government's ability to negotiate a reasonable price. Poorly done market research could lessens an activity's ability to achieve fair and reasonable prices. We would focus our research on how market research was conducted, and if it informed and influenced the contracting officer's analysis of price reasonableness and how it influenced the IGCE.





In a wrap-up of this report, the authors have included excerpts from the current executive director of the National Contract Management Association, Mr. Michael Fischetti, in regards to the complications of cost and pricing in an August 2014 Federal Times article. Mr. Fischeitti highlights the problems contracting personnel, contractor and government, face in determining a fair and reasonable price and offers his own recommendation for a solution. The authors' research report exposes many of these pricing complications and calls attention to a similar solution/ recommendation as Mr. Fischetti.



“One of the most controversial areas in government contracting surrounds cost and pricing: the means by which a contracting officer makes a “fair and reasonable” price determination”

“Taxpayers want confidence that the prices the government pays are fair and reasonable. The rules governing that determination aren’t simple and rely on judgment.”.

“This topic points out once again the need that both parties to a transaction develop a strong, professional cadre with the depth of technical, business, contracting, program, relationship, and analytical knowledge and skills to manage through this thicket of complex guidance, data, and various internal and external pressures to make the proper business judgments and trade-offs their constituents demand.”

“But hiring and developing professional contracting managers to understand and solve the complexities of contractual cost and pricing is the ultimate solution versus solving them legislatively or through the media or court of public opinion. Let’s move forward to develop professional standards widely adopted and recognized throughout both government and industry and then support and qualify our top-caliber managers against those standards, so they can make the proper business judgments our citizens deserve.”



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