

The Valuation Effect and Determinants of Corporate Contracting

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Abstract

We examine the stock market reaction to inter-corporate (984 contractors and 575 contractees) and corporate-government (1963 contractors) contract announcements reported by Dow Jones between January 1, 1990 and December 31, 2000. Around contract announcement dates, we find statistically significant positive average abnormal return for contractors, but insignificant average abnormal returns for contractees. Cross-sectionally, contract announcement period returns are higher for contractors who win larger and longer-term contracts, are relatively small, previously had slower growth but higher profitability, have many competitors, and are in riskier lines of business. Contract awarding firms have higher announcement period returns when their grants are relatively short term and when they previously had higher growth and lower profitability. The results for contract-winning firms are consistent with two explanatory stories: winning a contract reveals that the firm is a low cost producer and might also earn quasi-rents induced by the winner's curse influence on contract bids.

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I. Introduction

Legally enforceable contracts are an essential part of the market system. But while there have been many empirical studies of financial contracts (mergers, leveraged buy-outs, etc.), few studies have focused on the much more common form of contract involving goods or services, which are obviously and fundamentally different from financial contracts. Our study is motivated by a desire to produce evidence about the market impact of such contract announcements on both contract-winning firms (contractors) and contract-granting firms (contractees.) An intuitive presumption might be that contracts are beneficial to both parties, who agree voluntarily to be bound by the contract's stipulations, but that has yet to be empirically verified in the existing literature. The market's reaction to contracting is an important issue not only for curious scholars, but clearly also for managers who are keenly interested in the likely valuation impact of future contracts.

Even though both parties voluntarily enter into a contract, we shall see that the stock market impact of a contracting announcement is NOT obvious. One simple reason is that contracts are often anticipated, so the actual announcement is no surprise. But there are more subtle issues at work too, for both the contractee and the contractor.

Every contractee has a choice between internal production of the good or service and external procurement, the famous "make or buy" decision. Why and for what reasons is the choice determined? An event study can provide insight into the success of the decision. If contractees usually make the right decision, then a contract announcement should have a positive impact on the contractee's market price unless, of course, it was completely anticipated. On the other hand, it seems plausible that contractees occasionally (or even

often) make the wrong decision, in which case one might anticipate a negative stock market response. By studying stock market reactions to contractee announcements, one should be able to derive insights about the frequency and magnitude of correct and incorrect decisions.

The stock market impact for contractors is even more complex. If contractors are operating in a perfectly competitive market, there should be little stock market response to a contract announcement since securing a contract would be analogous to a farmer selling yet another bushel of corn. The good or service will be produced and sold at cost. Of course, intuition suggests that winning a contract is good news. Indeed, the very language of the vernacular, “winning a contract,” strongly implies a positive impact on the contractor’s value. Yet it is definitely not obvious that winning a contract necessarily implies a higher stock market price. This certainly would not be true if the contractor were operating in a perfectly competitive market with no cost advantage.

But there are at least two explanations, and perhaps others, in support of the above-mentioned intuition about contractors. First, potential contractors are not all alike. Some are more efficient than others and can produce the good or service at lower cost. Winning a contract could therefore be a signal of efficiency since contracts are often granted to the lowest bidders, who are able to bid lower because they can produce at lower costs. To the extent that cost structures are revealed by contract announcements, contract winners should enjoy a positive market reaction.

A second possible explanation comes from bidding theory. When there are multiple bidders and considerable uncertainty about costs, each bidding firm should be wary of the “winner’s curse;” (i.e., the winning bidder might underestimate its own costs of production.) To

counter the winner's curse, a firm should bid higher than what it estimates would make the contract just marginally profitable. To the extent that all bidders attempt to mitigate the winner's curse, the winning bidder will obtain a quasi-rent, the difference between the actual biased-high bid and a break-even bid. Again, there will be a positive price reaction. Increasing the quoted contract price to offset the winner's curse implies that the contract winner will receive a rent (equal to the biased bid price less the anticipated cost.)

There is also a sense in which private information is revealed by a contract announcement. If a contract is significant enough to warrant a press release, it presumably conveys information previously known only to management. The contractee thereby reveals a positive assessment of the contractor's ability to deliver goods or services and further reveals a willingness to depend on the contractor for some integral part of its business. The contractor also reveals a positive assessment that the contractee will be able to discharge its obligations; e.g., to remain in business for the duration of the contract and to provide prompt payment.

To refine our examination of actual market reaction of contractors and contractees, we control for various factors that could be related to the explanations above, including the number of firms in the industry, national vs. international contracts, small vs. large firms, and the relative contract size.¹ We also control for various contract features and other firm-specific characteristics.

¹ A large contractor winning large contract might not convey the same information as a small contractor winning the same sized contract.

Cross-sectional regression models are employed to ascertain which variables are useful predictors of expected abnormal returns. Both contractor and contractee abnormal returns around the contract announcement are dependent variables in separate cross-sectional regressions.

To anticipate, we find that average announcement period abnormal returns of contractors are significantly positive while contractee returns are insignificant on average. For inter-corporate contracts, contractor abnormal returns are positively related to longer contract term and relative contract size, small contractor firm size, low pre-contract growth, high historical profitability, lower leverage, a large number of potential competitors, and a riskier line of business. In contrast, abnormal returns of contractees are positively related to shorter contract term, higher pre-contract growth, and lower profitability. Corporate-Government contracts reveal a similar but less significant pattern for contract-winning firms.²

Our paper contributes to the literature in several ways. First, it documents how stock prices respond to announcements about goods and services contracts, a very important but scarcely studied corporate activity. The difference between corporate and financial contracting is obvious, but no study has examined corporate contracting before. Second, the market impact of the contract announcements on contractors and contractees is not obvious. The winning contractor, for instance, would not have a positive stock price reaction if it is operating in a perfectly competitive market, since competition would remove any rents. Yet we find that winning contractors experience a positive stock market reaction, which we explain by either a winner's curse argument or a cost revelation argument. Finally, this study uncovers firm

² Of course, in these cases the contractee is a government entity and there is no market data.

attributes and market conditions that impact the stock price response to contract announcements.

II. Contracting Data

II.A. Inter-corporate contracts

The original data sample is obtained from Dow Jones & Company, Inc. by using a keyword search covering all publications available on the Dow Jones Interactive web site. This search finds 7137 inter-corporate contract announcements³ and 3512 corporate-government contract announcements reported from January 1, 1990 to December 31, 2000. Examples of different types of contract announcements are given in the Appendix.

Since our focus is on standard business contracts between corporations, financial and legal contract events are excluded. Excluded legal contracts involve contract disputes, jury awards, non-compete agreements, patents, and union contracts. Excluded financial contracts involve mergers and acquisitions, joint ventures, restructuring, leasing, debt/equity offerings and credit arrangements.

The initial sample of 7137 inter-corporate and 3512 corporate-government contract announcements is thereby reduced to 984 contractors and 575 contractees for inter-corporate and 1963 contractors for corporate-government contracts, all of which have returns on CRSP from 250 days before the announcement to 90 days thereafter. Moreover, no major confounding events (earning announcements, merger and acquisition announcements,

³ If the contract announcement occurred on a non-trading day for the stock market, the next available trading day was used as the effective announcement date.

dividend announcements, capital structure change, etc.) occurred within a three-day window, from one day before to one day after the contract announcement.⁴

Table 1 show the procedure of obtaining the final sample (984 contractor samples and 575 contractee samples for inter-corporate contracts and 1963 contractor sample for corporate-government contracts) and a frequency distribution of announcing events included in the final contractor and contractee sample for each respective year.

In addition to the full sample of 984 contractors and 575 contractees for inter-corporate contract, we report separate results for a contracting parties sample of 441 announcements where data are available for both contractees and contractors. The contracting parties sample allows us to include the announcement period return of the contracting partner as an explanatory variable in explaining the subject firm's return.

II.B. Corporate-Government Contracts

The sample of government-awarded contracts is also drawn using a key-word search on the Dow Jones Interactive web site during 1990-2000 inclusive. Only contracts exceeding \$1 million are retained. This results in 3512 announcements but only 2258 involving firms are included on CRSP.

⁴ Following Brown & Warner (1985) any contaminating announcement made in the within ± 1 days of the contract announcement disqualifies the contract from our sample. Confounding announcements involve realized or pending mergers, acquisitions, joint ventures, leveraged-by-outs, contingent or realized liabilities due to litigation, reorganizations and restructurings, and similar major events.

We then eliminate firms with another major announcement during a three-day window centered on the contracting announcement, days $t-1$ to $t+1$. Examples of contaminating announcements include dividends, credit rating reports, new debt or equity issues, and Chapter 11. 2133 announcements remain after filtering for contamination. Lastly, since the same announcements might be reported in multiple media,⁵ we check for and eliminate duplications. The earliest mentioned date is taken as the event date and any similar subsequent announcement is expunged. The final sample contains 1963 uncontaminated announcements. Examples of announcements are provided in the appendix.

Table 1 recounts the procedure used in obtaining the final sample and reports frequencies by year of government contracts awards. A large majority of government contracts are awarded to American firms contracting with the U.S. federal and local governments. Military contracts outweigh civil contracts and service contracts outweigh non-service contracts. There are more announcements in 1990-91 due to a large number of military contracts while announcements during the remainder of the sample period are distributed more evenly.

(Table 1 inserted here)

II.C. Contract and Firm-Specific Features

Contract features are drawn from the announcements themselves. Firm-specific features such as firm size, Tobin's q , profitability, leverage, industry, and total assets are obtained from Compustat; data not available on Compustat were hand-collected from financial reports in EDGAR. All accounting variables are measured at the end of the quarter prior to the contract announcement. The number of competitors is the number of firms with the same four-digit

⁵ And thus be carried more than once on the Dow Jones web site.

SIC code as the announcing firm. Uncertainty about contract profits is based on volatility prior to the contract. Closing prices are taken from CRSP.

III. Abnormal Returns and Cross-Sectional Explanatory Variables

III.A. Calculation of Abnormal Returns around Contract Announcements

Abnormal returns are estimated with the simple market model; i.e., daily observed returns conform to the following structure:

$$R_{j,t} = \hat{\alpha}_j + \hat{\beta}_j R_{m,t} + \varepsilon_{j,t} \quad (1)$$

where $R_{j,t}$ is the continuously-compounded rate of return of security j on day t , $R_{m,t}$ is the rate of return on the CRSP value-weighted market index on day t , $\hat{\alpha}_j$ and $\hat{\beta}_j$ are, respectively the estimated intercept and slope of the linear relation between security j and the market index, and $\varepsilon_{j,t} \equiv AR_{j,t}$ is an unexplained or “abnormal” return on day t .

The coefficients $\hat{\alpha}_j, \hat{\beta}_j$ are estimated from an OLS regression using 160 returns from trading day $t = -250$ through trading day $t = -91$ relative to the announcement date, $t=0$. Eleven days centered on the announcement date constitute our event window and to capture the market reaction we designate day $t = -1$ and $t=0$ to capture the market reaction to contracting announcement.

An average abnormal return for event date t is calculated as a simple cross-sectional average over N firms in the sample,

$$AAR_t = \frac{1}{N} \sum_{j=1}^N AR_{j,t}, \quad (2)$$

where $AR_{j,t}$ is the abnormal return of firm j on day t (the residual from model (1).) A t -statistic can be calculated for the average abnormal return by assuming cross-sectional independence.

A cumulative average abnormal return ($CAAR_{T_1, T_2}$) is computed as a sum over several event days; i.e., accumulating from days T_1 to T_2 inclusive, we have

$$CAAR_{T_1, T_2} = \frac{1}{N} \sum_{t=T_1}^{T_2} \sum_{j=1}^N AR_{j,t} . \quad (3)$$

III.B. Factors to Explain the Cross-Section of Abnormal Announcement Returns

The market will, of course, not react equally for every contract announcement. A variety of firm-specific and market conditions might magnify or attenuate the response. This subsection explains various candidate explanatory and control variables and provides a rationale for their inclusion in a cross-sectional analysis of individual abnormal returns.

III.B.1. Contract Features

Length of Contract Term: The contract reveals both parties' expectations of being in business for at least the duration of the contract. Longer-term contracts may also save on transaction costs relative to a succession of shorter-term contracts. For either reason, the stock price reaction might depend on the contract term.

Military versus Civil Government Contracts: Military contracts are often criticized in the popular press for involving excessive costs. If this translates into extraordinary profit for the contract-winning firm, announcement period returns should be higher than for announcements of contracts granted by civilian government entities.

Contract Amount Relative to Firm Size: We formulate a relative contract size variable by dividing the stated dollar amount of the contract by the firm's total assets. Total assets are measured one year before the contract announcement. A large relative contract size should be more of a surprise to the market and perhaps be associated with larger announcement period returns. Large contractees granting contracts to large contractors would, intuitively, be normal; but large contracts granted by small contractees or granted by any sized contractee to a small contractor would be unusual.

Initial vs. Subsequent Contracts: The first public contract announcement is likely good news for a debutante contracting firm while subsequent contracts would be more or less expected.

National versus International Contracts: International business transactions might be riskier than purely domestic transactions for both parties. Contract enforcement and monitoring could be more difficult and costly. On the other hand, winning an international contract might be a positive surprise for a domestic contractor while granting a contract internationally might be good news in terms of procurement diversification for a contractee. In any case, controlling for the international nature of the contract could provide a refinement in understanding the stock market's reaction to a contract announcement.

III.B.2. Firm-specific features

Absolute Firm Size: Prior research indicates that the amount of publicly available information increases with firm size. Small firms have fewer public disclosures between releases of financial reports, thereby providing the market with little basis for making

valuation adjustments. Hence any announcement, including a contract announcement, is likely to be more significant for smaller firms and induce a larger stock price reaction.

Tobin's q: Tobin's q, the market value of assets divided by their replacement cost, is a frequently used measure of a firm's growth prospects and profitability. A q greater than 1 indicates a market consensus belief that the firm will generate larger cash flows than if assets were deployed elsewhere (McGahan (1999)). Lang, Stulz, and Walkling (1991), argue that firms with high Tobin's q are likely to have better investment opportunities. If a contractor with low Tobin's q ratio wins a contract, the market's assessment of such growth opportunities could conceivably be altered, thereby inducing a change in the stock price.

Historical profitability: If a firm with low historical profitability wins a contract, its earnings should improve. Accordingly, abnormal returns could be higher for winning contractor firms with low historical profitability.

Leverage: Leverage represents risk to the counter-party in a contract and, as a consequence, highly-levered firms are less likely to be sought out as contracting partners. For contract winning firms, lower leverage is likely associated with a higher probability of successfully fulfilling contractual obligations, hence high leverage should be associated with lower announcement date abnormal returns. Contract awarding firms are essentially undertaking additional payment obligations, so higher leverage might also be associated with lower announcement returns.

Industry: Industries vary in terms of barriers to entry, switching costs, opportunities to differentiate products, and the quality of public information. Service industries (Lang and Warfield (1997)) are particularly subject to poor external documentation because standard financial reporting may not capture many factors that impact the value of these firms (e.g.,

intellectual capital and other “soft” assets). Prior research indicates that service firms allocate a higher proportion of their resources to information technology investments (Roach (1988)). As a result, the stock prices of service firms and non-service firms might react differently to contract announcements.

Competition: Winning a contract in the face of intense competition should, intuitively, be more surprising for the winning firms. Hence, one might anticipate a positive association between the number of competitors and the winning contractor’s announcement period returns. For contractees, however, such a story is less compelling.

Uncertainty about contract profits: According to auction theory, bidding firms should be more wary of the winner’s curse when there is more uncertainty about the value of the object being auctioned. In the present context, contracts involving greater uncertainty about profitability would receive higher bids relative to the expected cost of production. Consequently, the winning bidder would earn a higher quasi-rent when the costs of production are more uncertain, so contractor announcement returns should be positively associated with cost uncertainty. We measure this uncertainty based on volatility prior to the contract since the bias of the winner’s curse depends on the business of the contractor *prior* to the bid.

IV. Empirical Results

IV.A. Average abnormal returns for the total sample

Table 2 reports average abnormal returns for contract announcements from five days before to five days after the announcement day (day zero.) For contractors involved in both inter-

corporate and corporate-government contracts, the largest average abnormal return occurs on day $t=-1$, the day preceding the announcement in the media; it is positive and highly significant. In all likelihood, the announcement is actually made on day $t=-1$ but is reported with a one-day lag. Contrary to what might be regarded as a popular impression, contractors gain less in market value from government than from corporate awards, on average. The day $t=-1$ announcement abnormal returns for contractors winning inter-corporate awards is 1.13%, which is more than twice the return for contractors winning government awards, 0.54%.

(Table 2 inserted here)

For contract-granting firms, although the award was voluntarily and must have been considered a good idea by contractee management, the AAR is not statistically significant at any time around the announcement. If, in fact, the contract was beneficial to the contractee firm, it must not have been much of a surprise to the market.

IV.B. Average abnormal returns for the inter-corporate contracting parties sample

Table 3 reports average abnormal returns for a contracting parties inter-corporate sample, which consists of 441 contractors and 441 contractees who are parties to the same contract announcement and have available CRSP data. For the contractor parties, statistically significant positive abnormal returns occur in the two-day window $t=-1$ to $t=0$. The two-day CAAR equals 1.94% ($Z=5.947$) and is statistically significant at 0.10 percent level. There appears to be some information leakage because the average abnormal returns are uniformly positive for days $t=-5$ to $t=-2$ as well and they are statistically significant in aggregate. As in the full sample, no significant abnormal returns are found in the contracting parties sample.

(Table 3 inserted here)

IV.C. Cross-sectional determinants of abnormal returns

The CAAR from day $t=-1$ to day $t=0$ is used as a dependent variable in Table 4. Explanatory variables include contract characteristics, term, type (i.e., military or civilian for government contracts), size, nationalities of the contracting parties, and contract sequence (whether this is the first contract for a firm); and firm characteristics, size, prior growth opportunities, historical profitability, leverage, industry, the number of potential competitors, and the residual volatility of contractor firms.

IV.C.1. Contract features

The contract's length is associated positively and significantly with abnormal returns for contractors. Given that winning a contract is good news, it is not too surprising that winning a long-term contract is even better news. For contractees, however, longer term is associated with smaller announcement period returns. Since contractee CAARs are about zero on average (Table 2), long-term contract awards must actually bring negative announcement returns to contractees. Evidently, the market believes that contractees have locked themselves in too long.

The contract's size relative to the winning bidder's total assets is positive and significant. Again, this seems sensible in that winning a contract is good news so winning a big contract is even better news. For contractees, the coefficient of contract size is negative but insignificant. Unlike contract term (see above), the market apparently does not think larger contracts are all that harmful to the granting firm.

The contract's sequence, as measured by whether or not this is the first contract won by the subject firm during our sample period, is insignificant for both contractors and contractees. This is somewhat unexpected; one might have predicted a bigger market response, particularly to a contractor firm that had not previously won a contract.

The final contract characteristic, whether the parties are in the same country, is insignificant for both contractors and contractees. This lack of significance suggests that cross-border enforcement of contracts is not considered all that problematic by the market.

IV.C.2. Pre-existing firm characteristics

Turning now to pre-contract firm-specific characteristics, the negative and significant coefficient of a winning contractor's size indicates that the market considers small winners to be bigger surprises than larger contractor/winners. This result does not, however, carry over to the contracting parties sample.

For contractors, the coefficient of Tobin's q is negative and significant at the 0.1 percent level. Using other proxies for growth such as a high proportion of intangible assets or high research and development expense also yields similarly significant negative coefficients (results not shown.) This pattern suggests that winning a contract is more of a positive surprise for slow growth contracting firms, and vice versa. Conversely, for contractees Tobin's q is associated positively with contract announcement returns. Evidently, it is good news when more rapidly growing firms outsource production to a contractor. We can only speculate about the reason for this. Perhaps it signals even more vigorous growth, too much growth for the contractee firm to handle internally.

Historical profitability is positive and significant for contractors in the full sample. This suggests that previously profitable contract winners will continue to perform well and earn higher profits under the new contract, while contract winners with poor historical performance are not expected to make much money even though they have been awarded the contract. As with firm size, this result is not obtained with the contracting parties sample. For contractees in the full sample, historical profitability is insignificant, though the coefficient's sign is negative. The negative sign carries over to the contracting parties sample and in this case it's significant. If the negative effect is really valid, the market seems to think that previously unprofitable firms will do better when they award production contracts to outsiders. This makes some sense in that unprofitable firms are probably less efficient on average, so depending on another, perhaps more efficient contractor will improve the overall results.

Leverage is associated with smaller announcement period returns for winning contractors and but the effect is marginally significant only in the contracting parties sample. If this effect is real, it would suggest that contractees are more reluctant to grant contracts to highly levered firms, perhaps because potential financial distress might jeopardize successful completion of the obligations undertaken in the contract. Leverage is insignificant for contractees in the full sample but has a negative but insignificant significant coefficient in the contracting parties sample. Highly levered firms who grant contracts are essentially taking on additional payment obligations, which are evidently not admired by investors.

Contractors in service industries have higher announcement returns; the effect is marginally significant in the contracting parties sample and significant at the five percent level in the full sample. There is no material impact for contractees in either sample.

The potential number of competitors, the number of firms in the same industry, has a strongly significant positive association with contractors' announcement returns. This is consistent with a signaling story; viz., revelation that the winning contractor is a low-cost producer. There is no perceptible impact of competitors on contractee firm returns.

As a proxy for uncertainty about contract cost, the contractor's residual volatility from the market model during the estimation period is the final explanatory variable. We estimate the volatility prior to the contract since the bias of the winner's curse depends on the business of the contractor *prior* to the bid. It is positive and strongly significant. This is consistent with a winner's curse explanation; viz., that more uncertainty about costs induces bidding firms make more biased bids, so the eventual winner earns a quasi-rent on average, effectively the difference between the biased-high bid and the expected production cost.

The cumulative abnormal returns of both contractors and contractees do not depend on those of contract partners i.e., the cumulative abnormal returns of contractors (contractees) are not affected by those of contractees (contractors).

The explanatory power in the cross-sectional models in Table 4 is reasonably good when one considers that the dependent variable is a stock market return, something that always contains a significant amount of noise. In the full inter-corporate sample and in the corporate-government sample, regressions for both contractors and contractees have F values that indicate overall significance at the 0.1 percent level. This is also the case for contractors in the contracting parties sample and the contractee regression has significance at the five percent level. The adjusted r-square of 0.53 in the full contractor sample is particularly

impressive. Although there must surely be other determinants of contract announcement returns that have been unintentionally omitted, we have uncovered some that appear to be quite material and significant.⁶

(Table 4 inserted here)

V. Conclusion

We study the stock market returns of contractors and contractees around the announcement of their corporate contracts. The full sample is comprised of inter-corporate (984 contractors and 575 contractees) and corporate-government (1963 contractors) contract announcements from January 1, 1990 through December 31, 2000. A smaller inter-corporate contracting parties sample has simultaneous data for 441 contractor/contractee pairs. In the full sample, there are significant average abnormal returns of 1.43% for contractors but insignificant average abnormal returns (0.03%) for contractees on the contract announcement day and the preceding day. The average abnormal returns of 0.54% for contractors of corporate-government contracts are also significant. The contracting parties sample is similar: a highly significant 1.94% for contractors but an insignificant 0.10% for contractees.

Cross-sectionally, announcement period returns of winning contractors are positively related to both the contract's term and its size relative to the firm's assets. Smaller firm size is itself associated with higher returns. Contractors that previously had relative low growth but

⁶To check for robustness, we replaced some of the variables in Table 4 with other possible proxies. For example we used the fraction of intangible assets and R&D expense instead of Tobin's q to proxy for growth. We also used the market value instead of the book value of assets in several variables and we employed alternative measures of historical profitability and leverage. In all cases, the results are essentially the same. A table with these alternate measures is available upon request.

higher profitability have higher announcement returns. There is a modest negative effect of the contractor firm's leverage. Finally, contractors with many potential competitors, are in the service industry, and are in riskier lines of business have higher announcement returns.

For contractees, the contract's term is negatively related to the announcement return. Contractees with previously higher growth and lower profitability have higher returns.

The results are consistent with two stories about contract winning firms: (1) that winning a contract reveals information to the market about the firm's operating efficiency; i.e., low bidders are likely to be low cost producers, and (2) that a winning firm will receive a quasi-rent; i.e., bidders for a contract inflate their bids relative to estimated marginal cost in an effort to counter the winner's curse, so the winner is expected by the market to earn abnormal profit. Shaving the bids for the winner's curse implies that the winner will receive a rent equal to the value of the contract less the biased bid.

The absence of any significant market reaction to firms awarding contracts is something of a puzzle. Contractees do not, of course, enter into binding agreements unless they believe such actions are potentially profitable. Even when a contract is the first awarded by a particular contractee, there is no market response. Evidently, the market believes contractees will just break even from contracting or else the contract itself has been fully anticipated.

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Appendix

Examples of Contracting Announcement Articles

Diamond Offshore Gets Contract: (Inter-Corporate, National) The Wall Street Journal, 12/29/1998: HOUSTON -- Diamond Offshore Drilling Inc. said it was awarded a contract from Amoco Corp., Chicago, valued at about \$19.8 million plus certain fees for the drilling of two wells off the coast of West Africa. The contract includes an option to drill two more wells. The deep-water drilling concern said the project would take about 120 days.

Dresser Industries Inc: (Inter-Corporate, International) The Wall Street Journal, 04/28/1992: HOUSTON -- M.W. Kellogg Co., a unit of Dresser Industries Inc., said it and JGC Corp. of Japan signed a contract with the Malaysian national petroleum company, Petronas, to expand a liquefied natural gas plant for \$1.6 billion.

Lockheed Martin Corp: (Corporate-Government, Military) Los Angeles Times, 12/28/2000: Lockheed Martin Corp. won a \$734.5-million contract to supply 12 C-130J transport planes to the U.S. military. Work on the contract is to be completed by 2006. Bethesda, Md.-based Lockheed avoided a costly shutdown of its plant near Atlanta that makes the C-130J earlier this year when Congress authorized purchase of the planes. Separately, Lockheed said the government of Chile plans to buy 10 to 12 of its F-16 jets for up to \$600 million, adding to a string of international sales of the fighter planes. Chile picked Lockheed's F-16s over rival Mirage 2000-5 jets made by France's Dassault Aviation, Gripen jets made by Sweden's Saab and the Boeing F/A-18 fighter plane, Lockheed said. Shares of Lockheed rose 34 cents to close at \$33.26 on the NYSE.

United Technologies: (Corporate-Government, Army) The Wall Street Journal, 04/29/1992: HARTFORD, Conn. -- United Technologies Corp. said it received a five-year, \$1.54 billion contract from the U.S. Army to supply 300 Black Hawk helicopters and related support systems.

Computer Sciences Corp: (Corporate-Government, Air Force) The Wall Street Journal, 06/19/1991: Computer Sciences Corp. was awarded a \$33 million contract to provide the Air Force Systems Command with management information systems and technical support. The El Segundo, Calif., company will provide the services at 14 sites throughout the U.S., the largest being Hanscom Air Force Base, Boston, and Wright-Patterson Air Force Base, Dayton, Ohio. The contract covers a base period of one year at \$33 million, with four annual renewal options totaling as much as \$180 million. Computer Sciences is a major supplier of information technology services to industry and government.

International Business Machine: (Corporate-Government, Army) Los Angeles Times, 06/28/1993: IBM Wins Major Army Contract: International Business Machines beat competitors GTE Corp., TRW Inc. and Electronic Data Systems for the \$474-million, 10-year award to build and service a nationwide computer system for the U.S. Army. Sustaining Base Information Services will track soldiers and supplies at 128 bases across the country. Through inventory control, it could save the Army as much money as it is spending on the system, IBM said. The system will be built at IBM's Federal Systems Co. plant in Owego, N.Y. "It's a plum for IBM to get that system," said Elliot

Rogers, a defense industry analyst at Cowen & Co. SBIS is intended to reduce redundant quartermaster requests by tracking orders from the warehouse to the front lines.

Table 1
The Final Samples and Frequency Distributions of Sample Firms

Panel A summarizes the effects of sample selection criteria. The initial sample of 7137 (3512) inter-corporate (corporate-government) contract announcements was reduced by the listed criteria to a final sample of 984 (1963) contract-winning firm announcements, and 575 corporate contract-granting firm announcements. Contracts are purged if they are related to litigation or to financial arrangements. No CRSP refers to companies that are not listed on exchanges or for some other reason do not have available CRSP data. Contaminated Announcement refers to a major non-contract event announced in a window centered on the contract announcement; these involve earnings, mergers and acquisitions, dividends, and capital structure changes, *inter alia*. No Returns refer to corporate contract announcements without CRSP returns available during the announcement period or the estimation period. Panel B reports the number of contracts per sample year. For contracts granted by government, this is broken down further by nationality of contractor (USA versus other) and by contract type (military versus civil and service versus non-service.)

Panel A. Reasons for Deletion of Announcement

Reason for Deletion	Number of Announcements		
	Inter-Corporate		Corporate-Government
	Contractor	Contractee	
Original Sample	7137	7137	3512
Less: Litigation or Financial Contract	(5748)	(5842)	
Less: No CRSP	(305)	(599)	(1,254)
Less: Contaminated Announcement	(42)	(31)	(125)
Less: No Returns	(58)	(90)	(170)
Equals: Final Sample	984	575	1,963

Panel B. Number of Announcements in Final Sample by Year

Year	Inter-Corporate		Corporate-Government			
	Contractor	Contractee	Total	Won by US Contractor	Type of Contract	
					Military	Service
1990	87	60	501	484	456	166
1991	64	33	302	291	245	124
1992	89	54	139	117	76	74
1993	68	34	123	113	85	64
1994	97	79	152	121	78	92
1995	90	47	104	89	68	63
1996	97	49	126	109	73	78
1997	103	40	131	122	79	86
1998	113	75	170	160	94	113
1999	95	49	92	86	49	69
2000	81	55	123	120	80	80
Total	984	575	1963	1812	1383	1009

Table 2
Abnormal Returns around Contract Announcements for Contractors and Contractees

Mean abnormal returns are from the Market Model using the Standardized cross-sectional Method. N is number of firm returns for a given day. AAR is the average abnormal return. Z is a Z-statistic test for significance. The symbols^o, *, **, and *** denote significance at the 10%, 5%, 1% and 0.1% levels, respectively, using a 2-tail test.

Day	Inter-corporate						Corporate-Government		
	Contractor			Contractee			N	AAR (%)	Z
	N	AAR (%)	Z	N	AAR (%)	Z			
-5	984	0.06	0.752	575	0.12	1.247	1963	-0.02	0.431
-4	984	0.04	-0.407	575	-0.16	-0.969	1963	-0.10	-2.121*
-3	984	0.28	2.434*	575	-0.09	-1.781 ^o	1963	0.04	0.457
-2	984	0.11	1.011	575	0.10	0.651	1963	0.18	2.468*
-1	984	1.13	7.179***	575	0.19	1.334	1963	0.54	5.324***
0	984	0.30	2.445*	575	-0.16	-1.541	1963	0.08	1.481
1	984	-0.06	0.006	575	-0.03	0.253	1961	0.21	0.656
2	983	-0.01	0.047	575	-0.10	-0.729	1960	0.03	0.547
3	984	-0.12	-1.798 ^o	574	-0.01	-0.6	1961	-0.02	0.362
4	984	0.07	0.416	574	-0.16	-0.804	1958	0.08	1.173
5	983	0.15	2.240*	574	-0.26	-1.549	1958	-0.04	-0.095

Table 3
Returns around the Contract Announcement Period
for a Contracting Parties Sample of Contractors and Contractees

Mean abnormal returns are from the Market Model for the contracting parties sample, which consists of 441 announcements for contractor and contractee parties that have simultaneous returns available from CRSP. N is number of firm returns for a given day. AAR is the average abnormal return. Z is a Z-statistic test for significance. Symbols^o, *, **, and *** denote statistical significance at the 10%, 5%, 1% and 0.1% levels, respectively, using a 2-tail test.

Day	N	Contractor		Contractee	
		AAR (%)	Z	AAR (%)	Z
-5	441	0.13	0.469	0.14	1.23
-4	441	0.12	0.199	-0.15	-0.852
-3	441	0.46	2.656**	-0.08	-1.316
-2	441	0.15	1.131	0.03	0.255
-1	441	1.52	5.698***	0.14	1.156
0	441	0.42	2.218*	-0.04	-0.61
1	441	-0.11	-0.102	0.01	0.546
2	441	0.03	-0.164	-0.10	-0.487
3	441	-0.04	-0.227	-0.02	-0.111
4	441	-0.02	0.079	-0.02	0.242
5	441	0.18	1.18	-0.35	-1.789 ^o

Table 4
Cross-Sectional Determinants of Contract Announcement Period Returns

This table reports cross-sectional regressions that attempt to explain the cumulative average abnormal return (CAAR) for contracting firms in the two-day announcement window $t=-1$ and $t=0$. Contract Term is the term of the contract in years. Military is a dummy for a government contract awarded by a military entity. Contract Size is the relative contract size, the contract amount of the winning bid divided by total assets. 1st Contract is a dummy variable that equals one if the announcement is the first by this firm during our sample period. Nationality is a dummy variable that equals one if the contractor and contractee have the same nationality. Firm Size is the market value of assets. Tobin's q is the market value divided by the book value of total assets. Profitability is historical net income divided by the market value of equity. Leverage is the ratio of total liabilities to the sum of total liabilities and market value of equity. Service Industry is a dummy variable that equals one if the announcing firm is in the service industry. N Competitors is the number of competitors; i.e., the number of firms that have the same four-digit SIC code as the announcing firm. Volatility is the contractor's residual volatility from the market model during the estimation period. CAAR_P is the cumulative abnormal returns of contract parties. All accounting variables are measured at the end of the quarter prior to the contract announcement. Symbols $^{\circ}$, *, **, and *** denote statistical significance at the 10%, 5%, 1% and 0.1% levels, respectively, using a two-tail test. The R^2 is adjusted. Panel A reports the results for the final sample of 935 contract-winning firm announcements, and 526 corporate contract-granting firm announcements and 1135 firms winning contracts from government entities. Panel B reports the results for the 441 announcements for contractor and contractee partners that have simultaneous returns available from CRSP.

Panel A: Full Sample

Variable/Statistics	Inter-corporate contracts				Corporate-government contracts	
	Contractors		Contractees			
	Coefficient	T-statistic	Coefficient	T-statistic	Coefficient	T-statistic
Intercept	0.57	1.17	-0.51	-0.90	0.86	0.74
Contract Term	2.02	4.15***	-0.61	-2.22*	1.15	2.16*
Military					0.26	0.72
Contract Size	2.52	4.94***	-0.54	-1.03	0.47	1.77 $^{\circ}$
1 st Contract	0.20	0.32	0.45	0.71	0.02	0.45
Nationality	0.34	0.91	-0.88	-0.57	-0.79	-1.34
Firm Size	-0.93	-2.40*	0.42	1.58	-0.03	-0.27
Tobin's q	-0.27	-5.15***	0.11	2.35*	0.02	0.61
Profitability	0.14	9.01***	-0.17	-0.70	0.03	0.19
Leverage	-0.41	-1.62	0.57	0.75	0.36	0.37
Service Industry	2.64	2.03*	-0.45	-1.61	-0.26	-0.77
N Competitors	3.13	2.90**	0.58	1.44	1.23	3.72***
Volatility	2.16	3.11**			1.15	2.87**
F Value	17.3***		7.21***		11.3***	
Adjusted- R^2	0.53		0.12		0.22	
Sample Size	935		526		1135	

Table 4 (Continued)

Panel B: 441 Contracting Partners

Variable/Statistics	Contractors		Contractees	
	Coefficient	T-statistic	Coefficient	T-statistic
Intercept	1.30	1.75 ^o	3.10	2.02*
Contract Term	1.89	1.91 ^o	-0.98	-2.07*
Contract Size	2.30	2.50*	0.40	0.21
1 st Contract	0.26	0.32	0.77	1.17
Nationality	1.20	1.47	-4.24	-0.45
Firm Size	0.23	0.95	0.51	1.21
Tobin's q	-5.00	-2.87**	0.29	2.82**
Profitability	0.03	0.69	-0.04	-1.96 ^o
Leverage	-1.44	-2.07*	-3.25	-1.51
Service Industry	3.74	1.78 ^o	-0.12	-0.56
N Competitors	3.77	4.42***	0.23	1.54
Volatility	1.85	2.81**		
CAAR_P	3.68	0.61	1.97	0.81
F Value	2.65**		2.36**	
Adjusted-R ²	0.19		0.18	