

Examining “Abnormal Returns” of Elite Government Contractors: A New Venue of Sustainable Competitive Advantage Study in Management Accounting

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This paper, in an attempt to establish a new venue of sustainable competitive advantage study in management accounting, reports on the empirical evidence on whether firms that are selected as elite U.S. government contractors sustain competitive advantage in the market, relative to those counterparts that are not. We observed the impact of hypothesized positive, value-enhancing news (The Washington Post’s announcement of elite contractors selected) that were revealed to the market. The test results confirm that the selection certainly served as one of Porter’s (1996) elements that provide a competitive advantage under the economic theory of the firm.

INTRODUCTION

The school of competitive analysis tends to capitalize on selected market imperfections in terms of barriers to entry, imperfect information, buyer-supplier relationships, and so forth (Porter, 1980, 1996). If the market imperfections are absent, according to the economic theory of the firm, *abnormal returns* will be competed away in the normal course of business. According to Porter (1996), the elements that allow a competitive advantage merely raise the bar for everyone in a transparent way; are available to all competitors in the industry; and do not generate long-term competitive advantage.

The research in “competitive advantage” has not been established thus far as a recognized venue of management accounting at best. It has long belonged to a part of management and marketing disciplines. Research in this field is based on the overall hypothesis that, the competitive advantage of superiority in skills and/or resources leads to the competitive advantage of superiority in performance outcomes, according to Day and Wensley (1988). This has not been connected to the performance study in management accounting.

Our research attempts to make a contribution to the accounting literature by investigating if a selection by the U.S. government as an elite government contractor dealing with top secrets becomes a variable in a firm’s attainment, albeit a short term, of competitive advantage. Our disciplined hope is that this pioneering study becomes an attempt to establish a new venue of sustainable competitive advantage

study in management accounting, stimulating future series of research to enrich management accounting literature.

While the research in this area has been inconclusive on the issue of which skills or resources lead to which performance outcomes exactly, a focused study on the variable that seemingly provides a certain stature in the industry, as an elite government contractor vs. the counterparts that are not, and is determined (by the government) through an intricate and complex process in a black box, would shed more light on the relationship between the competitive advantage in the skills or resources and the competitive performance outcomes. In today's fiercely competitive market, the answer to this strategic question is critical.

The paper is organized as follows. First, a theoretical connection between the source (selection as an elite government contractor) of competitive advantage and overall performance of the sample firms (relative stock returns, sales revenues, and operating profits) is presented. Second, the related data selection process involving the "Top Secret America" project by The Washington Post and our financial data gathering process is explained. Third, the empirical test results based on the stock market returns and financial performance figures are analyzed. Finally, the study's theoretical implications are examined and suggestions for future research are made.

THEORETICAL CONNECTION BETWEEN THE SOURCE OF COMPETITIVE ADVANTAGE AND PERFORMANCE OUTCOMES

Theorists of the resource-based view (RBV) of the firm suggest that the firms that sustain competitive advantage in the market benefit from heterogeneity or firm level differences in such forms of resources as patents, properties, proprietary technologies, skills, competencies, or relationships to the extent that they are valuable, rare, inimitable, and non-substitutable (Barney, 1991; Miller, 2003; Noda & Collis, 2001). The nature of such resources indicates that their value is attributed to their inaccessibility to other competitors in the market. If such resources are imitable or substitutable, they can be attained by the aspiring firms. This creates the sustainability-attainability dilemma because of the antagonistic natures of the two properties.

The RBV has since undergone some theoretical extension to the realm of dynamic capabilities through sequence-based path-dependent learning. The dynamic capability perspective has expanded the RBV to encompass a firm's evolving capacity to stay competitive by following sequences of path-dependent learning (Morecroft, Sanchez, & Heene, 2002; Teece, Pisano, & Shuen, 1997). The research in this field, however, reaches a limitation. There has been no clear direction as to how a firm places itself on a learning curve that would lead to capability building.

Strategic challenges, such as industry restructuring or globalization, emerge and firms have to formulate an optimal capability development trajectory. The theoretical limitation here is how a firm develops sustainable advantage that it doesn't have, but is attainable. Two distinct problems have become obvious in the competitive advantage research. One, the asymmetry in inimitability has disrupted the RBV of the competitive advantage research. The study of Miller (2003) has found that the capabilities did not usually emerge out of clear strengths or resources in the economic sense. Firms started with modest or even undesirable situations and could develop capabilities through the understanding of their asymmetries in inimitable uniqueness. Two, the widely accepted hypothesis that the superiority in functional skills and/or resources (marketing, innovation, and manufacturing) leads to superiority in performance collides with the asymmetry issue mentioned here.

The observation that the competitive advantage research has slowed noticeably in recent years may find a partial answer in the difficulty of establishing which skills or resources lead to which performance outcome. Without a different perspective in competitive advantage research, the progress may continue to be slow. Even with the RBV's theoretical extension to the realm of dynamic capabilities through sequence-based path-dependent learning, the lack of clear direction as to how a firm places itself on a capability-building learning curve and the theoretical limitation of how a firm develops sustainable advantage that it doesn't have, but is attainable. This even includes the difficulty in the study of the effect

of a particular resource (human) on the sustainability and the need to expand the dominant focus on firm-level performance outcomes (Janssens & Steyaert, 2009; Martinez-del-Rio, Cespedes-Lorente & Carmona-Moreno, 2012).

If the RBV-disrupting asymmetry in inimitability suggests that the capabilities did not usually emerge out of clear strengths or resources in the economic sense, then the approach that has been used thus far may have to be changed through the research of the common characteristics of the firms that own the competitive advantage. If even the firms that started with modest or even undesirable situations could develop capabilities through the understanding of their asymmetries in inimitable uniqueness, and if the widely accepted hypothesis that the superiority in functional skills/resources leads to superiority in performance collides with the asymmetry issue, then there is further need to understand the common characteristics of the firms that lead to certain relative strengths that their competitors in the market do not possess through different screening devices.

Whether selection as an elite government contractor serves as one of those screening devices, or whether the ability to win a significant government contract helps lead a firm to a superior competitive performance in the market has not been studied thus far. As a beginning, the literature search in government contracting reveals that there hasn't been any systematic research on how the government selects the contractors per se, not to mention their elite contractors. The cost control issue has been the focus of public attention for the most part. The cost-shift-to-the-customer (government) practice by defense contractors has been a well-known industry issue, especially among the U.S. government contractors. Which firm gets the government contract is determined (by the government) through an intricate and complex process in a black box. Whether the ability to win an elite government contract helps explain the asymmetries in inimitable uniqueness for the firms that won (versus those competitors that did not) has yet to be examined. Our study would certainly shed more light on the relationship between the competitive advantage in the skills or resources and the competitive performance outcomes.

THE EXAMINATION OF THE THEORY CONNECTION

Data Description

In the spirit of examining the common characteristics of the firms that lead to certain relative strengths that their competitors in the market do not possess through different screening devices, we test if the market, more specifically the testable capital market in our examination, assigns any significant discernible value to those firms that are selected by the government as elite contractors.

For this test, we use data from the Washington Post's Top Secret America (WPTSA) database to collect the test sample of elite government contractors. In 2009 and 2010, The Washington Post journalists collected information from government organization public records and private-sector company public records to create the WPTSA database. The companies listed in the WPTSA database are private-sector companies that engaged in top-secret work for various government organizations. The Washington Post used public filings, Dun & Bradstreet data, and original reporting to derive revenue, employee data, and dates of establishment on each listed company.

The Washington Post used information from threat documents marked "For Official Use Only," government web sites, reports, and other documents to identify work as being "top secret." For parent companies that contain multiple sub-units, the sub-unit's name is listed for the sub-units that have top-secret contracts. For parent companies that contain multiple sub-units with top-secret government contracts, but the parent companies themselves are not primarily involved with the defense industry, the parent company's name is listed and the sub-units' names are noted.

Many of the government organizations in the WPTSA database listed themselves in documents as participating in Joint Terrorism Task Forces, fusion centers, or Anti-Terrorism Advisory Councils in 2009 or 2010. There are 2,880 federal organizations working at the state level; 818 state organizations; and 360 local organizations; for a total of 4,058 government organizations that are involved in domestic counterterrorism and homeland security.

The first part of the WP's TSA investigation report was released on July 19, 2010 and unveils the searchable online database of government organizations and private companies. The information in the database is based entirely on public records. The fourth and final installment was released on December 20, 2010 and reveals how WPTSA performs at the local level, in various cities across the country. The searchable online database contains the names of government organizations that contract out top secret work and the names of companies who received top secret contracts from government organizations (Top Secret America Blog 2011). The database also includes the types of work that each contracted company performs and where. From the database, we have identified a sample of 87 WPTSA firms whose stocks are listed on the stock exchanges and their financial data are reported on CRSP/COMPUSTAT databases. The industry distribution of the test sample firms is presented in Table 1, showing the overwhelming representation of the business services industry due to the nature of the WPTSA work.

Test Methodology

We use the standard capital market pricing model to test if the market sees extra value in a firm's selection as an elite government contractor. The extra value is demonstrated by an abnormal return for the WPTSA firm compared to the returns of all firms in the market. There are two distinctly different risks in the market: the macroeconomic risks, called the systematic risks, that affect all stocks in the market and firm-specific risks. Excess returns from the market can be decomposed to three elements: a particular stock's return on a broad market index (the S&P 500), the normal response of that stock's excess return to changes in the market index's excess return, called beta, and the impact of unanticipated firm-specific events. For more details on the standard capital market pricing model, please see Kidwell (2013).

The firm-specific component of a firm's return is uncorrelated with the market return, and the variance of the excess return of a stock represents the systematic risk and the firm-specific risk. This firm-specific risk is independent of market performance. We estimate these risks using daily stock returns and CRSP equally-weighted market index in a two-year period (10 days before the event date). The abnormal returns are computed as the differences between firm actual returns and estimated returns based on the capital market pricing model around the event date with a window of [-1,+2] around the event date. All data are obtained from the CRSP stock return file.

TABLE 1
SAMPLE CLASSIFICATION

Industry Distribution of Test and Match Sample	
Oil, Gas, & Mining (10-14)	1
Constructions (15-17)	2
Primary & Fabricated Metals & Machinery (34)	1
Industrial & Commercial Machinery (35)	11
Electric & Transportation Equipment (36-37)	19
Photo, Watch, Jewelry, Sporting Product (38-39)	5
Communications (48)	3
Retail & Trade (50-59)	1
Holding and Other Investment Offices (67)	2
Business Services (73-87)	41
Public Administration – Other (99)	1
Total	87

Secondary Test

In order to match asymmetry-derived capabilities to the market opportunities available to other players in the market (Miller, 2003), we add the following secondary test to our study:

	<i>Test Sample</i> <i>WPTSA Firms</i>	<i>Control Sample</i> <i>Non-WPTSA Firms</i>
Does the market see extra value?		
Primary test: (compared to the overall stock market)	Yes/No	
Secondary test: (compared to the same industry competitor)		Yes/No

Matching sample firms are selected from the same primary industry and showed the sales values in the same period as closest to the sales values of each test sample firms. Data are from the COMPUSTAT and CRSP databases. Table 2 provides descriptive statistics and sample difference tests for the elite government contractors and matching sample firms. The matching sample firms show the closest sales values in the award year and in the same industry as identified by the WPTSA firms' (award winners') main 3-digit SIC code.

TABLE 2
DESCRIPTIVE STATISTICS AND SAMPLE DIFFERENCES

The first line numbers represent the mean values, and second line the median values. The difference test for mean is based on the 2-sample t-test, and the test for medians uses the signed-rank tests. All data are from COMPUSTAT Annual Files.

The significant level: Significant *** at 1% level, ** at 5% level, and * at 10% level.

Mean/ Median	Gov't Contractor (a)	Match Sample (c)	t-score/ Z-score (a) – (c)
Total Firm-year Observations	87	87	-
Profit Margin (EBIT on Sales)	0.1236	0.1362	-0.0126
	0.0993	0.1223	-0.0230*
Return on Assets	0.1318	0.1383	-0.0065
	0.1312	0.1368	-0.0056
Sales Per Employee	388.4495	358.3900	30.0595
	301.4945	298.0697	3.4248
Income Per Employee	38.7741	27.2743	11.4998
	16.1784	16.8566	-0.6781
Assets Turnover (Sales on assets)	1.1924	0.8801	0.3122**
	0.9626	0.7704	0.1922*
Fixed Assets to Assets	0.1089	0.1418	-0.0329
	0.0739	0.1019	-0.0280

Inventory to Assets	0.0522	0.0945	-0.0423**
	0.0210	0.0359	-0.0149
Receivable to Assets	0.2389	0.1664	0.0725**
	0.2044	0.1428	0.0615**
Long- & Short-Term Debt to Assets	0.1622	0.1668	-0.0046
	0.1354	0.0878	0.0476
Capital Expenditure to Assets	0.0348	0.0553	-0.0205
	0.0204	0.0303	-0.0098**
Research & Development Expense to Sales	0.0844	0.0905	-0.0061
	0.0585	0.0731	-0.0146
Advertising Expense to Sales	0.0120	0.0135	-0.0015
	0.0058	0.0081	-0.0023

In order to see if there is any bias in the sample with respect to common value measures between award firms and matching firms, we obtained univariate comparisons on each firm's equity market value to book value ratios, earnings to stock price ratios, and excess value to sales ratios. Between the two sample categories, no bias was observed. There were statistically significant, higher earnings to stock price ratios for the award firms, however. Table 3 shows the univariate comparisons between the two sample categories.

TABLE 3
UNIVARIATE COMPARISONS OF VALUE MEASURES BETWEEN AWARD WINNERS AND MATCHING FIRMS

The table shows the differences for common value measures between award contractors and matching firms. Test of differences for mean is based on 2-sample t-test and medians the signed-rank tests. All data are obtained from COMPUSTAT Annual files.

The significant level: *** significant at 1% level, ** 5%, and * 10%.

Mean Median	Gov't Contractors	Match Sample	t-score/ Z-score
Total Firm-year Observations	87	87	-
Market-to-Book Value Equity	1.4052	1.6202	-0.2150
	1.0724	1.2567	-0.1843
Earnings-to-Price Ratio	0.0504	0.0331	0.0173
	0.0544	0.0452	0.0092**
Excess Value to Sales	1.1847	1.5479	-0.3632
	0.5076	0.7970	-0.2895

TEST RESULTS AND DISCUSSIONS

Table 4 shows the abnormal positive stock returns for the WPTSA firms in the test sample around the Washington Post's announcement date (July 19, 2010). We observe positive, value-enhancing news (The Washington Post's announcement of the government contracts) have been revealed to the market, while there were no significant differences in the accounting fundamentals between our test sample (awards

firms) and the control sample, as observed in Table 2. There were no significant differences in market-based performance measures between the two samples, as we noted regarding Table 3.

TABLE 4
ABNORMAL STOCK RETURNS AROUND THE ANNOUNCEMENT DATE

The abnormal returns are computed as the differences between firm actual returns and estimated returns based on capital market pricing model around the event date with a window of [-1,+2] around the event date. All data are from CRSP stock return files. The significant tests for mean is based on t-test and median the signed rank tests.

The significance level: *** significant at 1% level, ** 5% level, and * 10% level.

Panel A: Abnormal Returns Around the Initial Announcement (7/19/2010)						
	Gov't Contractor			Match Sample		
	Mean/ Median	t-value/ Signed Rank	P value	Mean/ Median	t-value/ Signed Rank	P value
Systematic Risks – Beta	1.0210	24.383	0.000	1.1758	17.371	0.000
	0.9706	42.500	0.000	1.0936	25.000	0.000
Cumulative Abnormal Return [-1,+2]	0.0163	3.229	0.002	0.0030	0.389	0.699
	0.0143	18.500	0.000	0.0109	4.000	0.322
Compound Abnormal Return [-1,+2]	0.0163	3.220	0.002	0.0030	0.395	0.694
	0.0139	18.500	0.000	0.0107	4.000	0.322

Panel B: Abnormal Returns Around the Closure (12/20/2010)						
	Gov't Contractor			Match Sample		
	Mean/ Median	t-value/ Signed Rank	P value	Mean/ Median	t-value/ Signed Rank	P value
Systematic Risks – Beta	1.0210	24.383	0.000	1.1758	17.371	0.000
	0.9706	42.500	0.000	1.0936	25.000	0.000
Cumulative Abnormal Return [-1,+2]	-0.0037	-1.089	0.279	-0.0032	-0.759	0.452
	-0.0070	-11.500	0.018	-0.0077	-9.000	0.015
Compound Abnormal Return [-1,+2]	-0.0035	-1.040	0.301	-0.0032	-0.758	0.452
	-0.0070	-11.500	0.018	-0.0077	-9.000	0.015

Although they may be competed away if the market imperfections are absent, Porter's abnormal returns certainly existed for the WPTSA firms when the contract awards were announced in the mass media. The test results confirm that the selection as an elite government contractor certainly served as one of Porter's (1996) elements that provide a competitive advantage under the economic theory of the firm. These elements that allow a competitive advantage merely raise the bar for every firm in a transparent way. The opportunities were available to all competitors in the defense industry, although how these WPTSA firms were selected by the government was not revealed. Porter claimed this element in general does not generate a long-term competitive advantage. Whether these abnormal returns will continue to

exist in the long term is not known, but the announcement by the mass media surely generated abnormal returns for the firms in the test sample.

During the last two decades the emphasis in the strategic management literature has shifted from viewing competitive advantage as primarily determined by environmental (industry/market) factors to a resource-based view: How the deployment of unique and idiosyncratic organizational resources and capabilities can result in sustained superior performance (Rouse & Daellenbach, 1999). Theorists of the RBV of the firm have advocated: the firms that sustain competitive advantage in the market benefit from heterogeneity or firm level differences in patents, properties, proprietary technologies, skills, competencies, or relationships to the extent that they are valuable, rare, inimitable, and non-substitutable (Barney, 1991; Miller 2003; Noda & Collis, 2001).

Our test results indicate that it's not just the resources that provide a competitive advantage to the players in the market. Regardless of whether such resources are imitable or substitutable, or whether they can be attained by the aspiring firms, how a firm is viewed by the government (in the award selection process) determines whether abnormal returns can be generated. The result can indicate which common characteristics of the firms lead to certain relative strengths (WPTSA contracts) that their competitors in the market (matching sample firms) do not possess through different screening devices.

The test results signal that selection as an elite government contractor serves as one of those screening devices, and the question whether the ability to win a significant government contract helps lead a firm to a superior competitive performance in the market has been answered by our empirical test. Our observations can be summarized as the following:

Around the initial announcement:

	<i>Test Sample WPTSA Firms</i>	<i>Control Sample Non-WPTSA Firms</i>
Does the market see extra value?		
Primary test: (compared to the overall stock market)	Yes	No
Secondary test: (compared to the same industry competitor)	No	No

The positive returns observed at the initial announcement of the government contract awards were not apparent at the closure of the Washington Post's reporting on December 20, 2010.

Around the closure of the Washington Post's reporting:

	<i>Test Sample WPTSA Firms</i>	<i>Control Sample Non-WPTSA Firms</i>
Does the market see extra value?		
Primary test: (compared to the overall stock market)	No	No
Secondary test: (compared to the same industry competitor)	No	No

The capital market had already digested the abnormal returns observed at the initial announcement, and the reporting at the closure of the WP's contract awards project on December 20, 2010 was not any new item of information on the competitive advantage anymore. In the discussion of the sustainable competitive advantages and the measures used, the selection as a WPTSA contractor could give the firm a source of competitive advantage, enhancing the reputation as one of the human interpretations mentioned

in the macro-culture (Rindova & Fombrun, 1999). And the selection as an elite government contractor can serve as one of the drivers of sustainable competitive advantage (Adner & Zemsky, 2006), reflecting a firm's ability to capture value by excluding rivals from opportunities in the competitive government bidding process.

CONCLUSION AND FUTURE RESEARCH IMPLICATIONS

We observed positive, value-enhancing news (The Washington Post's announcement of the government contracts) were revealed to the market, while there were no significant differences in the accounting fundamentals and no significant differences in market-based performance measures between the test sample of elite government contractors and matching firms that were not awarded the contracts.

Although they may be competed away if the market imperfections are absent, Porter's abnormal returns certainly existed for the WPTSA firms when the contract awards were announced in the mass media. The test results confirm that the selection as an elite government contractor certainly served as one of Porter's (1996) elements that provide a competitive advantage under the economic theory of the firm. These elements that allow a competitive advantage merely raise the bar for every firm in a transparent way. The opportunities were available to all competitors in the defense industry, although how these WPTSA firms were selected by the government was not revealed. Porter claimed this element in general does not generate a long-term competitive advantage, and whether these abnormal returns will continue to exist in the long term is not known, but the announcement by the mass media surely generated abnormal returns for the firms in the test sample.

During the last two decades the emphasis in the strategic management literature has shifted from viewing competitive advantage as primarily determined by environmental factors, including industry and market, to a resource-based view: How the deployment of unique and idiosyncratic organizational resources and capabilities can result in sustained superior performance.

Theorists of the RBV of the firm have advocated: the firms that sustain competitive advantage in the market benefit from heterogeneity or firm level differences in patents, properties, proprietary technologies, skills, competencies, or relationships to the extent that they are valuable, rare, inimitable, and non-substitutable. Our test results indicate that it's not just the resources that provide a competitive advantage to the players in the market. Regardless of whether such resources are imitable or substitutable, or whether they can be attained by the aspiring firms, how a firm is viewed by the government (in the award selection process) determines whether abnormal returns can be generated. This result can indicate which common characteristics of the firms lead to certain relative strengths (WPTSA contracts) that their competitors in the market (matching sample firms) do not possess through different screening devices.

Our empirical test results signal that selection as an elite government contractor serves as one of those screening devices, and the ability to win a significant government contract helps lead a firm to a superior competitive performance in the market, at least in the competitive capital market. The school of competitive analysis suggests (Porter, 1980, 1996) that selected market imperfections, such as barriers to entry, imperfect information, and buyer-supplier relationships indicate the elements that allow a competitive advantage. Our study demonstrates that selection as an elite contractor by the government is one of those variable too, and future research on competitive advantage must incorporate this element in the empirical research design.

In the study of whether the first competitive advantage of superiority in skills and/or resources leads to the second competitive advantage of superiority in performance outcomes, our research claims that the selection by the U.S. government as an elite government contractor dealing with top secrets should become a variable in a firm's attainment, albeit a short term, of competitive advantage. Research in this area has been inconclusive on which skills or resources lead to which performance outcomes exactly. Our study suggests that the market's assignment of a firm's extra value through abnormal returns (positive or negative) provides a proof that there is a connection between the first competitive advantage of superiority in skills and/or resources leads to the second competitive advantage of superiority in

performance outcomes, at least in the short term. Whether a firm is awarded an elite contract is determined (by the government) through an intricate and complex process in a black box. But our study sheds more light on the relationship between the competitive advantage in the skills or resources and the competitive performance outcomes.

This paper attempts to establish a new venue of sustainable competitive advantage study in management accounting. We report on the empirical evidence on whether firms that are selected as elite U.S. government contractors sustain competitive advantage in the market, relative to those counterparts that are not. In future research in this area, the answers to the following strategic questions are critical: What products, processes and services provided by the organization are really sustainable? Is the company a sustainable organization? Being able to answer these questions requires the ability to measure sustainability results through both economic and non-economic factors (Epstein, 2008). When the measurements of these pose testing implementation dilemma in management accounting research, the empirical testing method employed in this study can suggest a verifiable external validity answer.

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