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SHORT REPORT

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Corporate lobbying and the value of firms: The case of defense firms and the 9/11 terrorist attacks

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Abstract

We examine the stock prices of defense firms surrounding the reopening of markets after the September 11, 2001 terrorist attacks. The cumulative abnormal returns for defense firms increased dramatically in response to the attacks, which is arguably explained by the expectation of impending military conflict and the possibility of new defense spending. Perhaps more interestingly, a substantial amount of the variation in the price response across defense firms is driven by whether or not the firm had established political connections through lobbying activities or political action committee contributions before the attacks. These findings seem to support the notion that market participants perceived that defense firms with political connections were more likely to secure future military contracts.

KEYWORDS
cumulative abnormal returns, event studies, lobbying, political connections, stock prices, terrorism, terrorist attacks

JEL CLASSIFICATION
G10, G14, H56, D72

1 | INTRODUCTION

Economic theory provides a framework that links government policies, such as direct subsidies, competition controls, and price-fixing, to firm outcomes (see Stigler, 1971). While the acquisition of political capital by firms is arguably intended to improve overall firm value, the empirical research is mixed.[1] On the one hand, several studies show that politically-connected firms have higher valuations (Faccio, 2006; Fisman, 2001 and Roberts, 1990) potentially through better access to debt capital, less competition, lower operating expenses, and lower corporate tax liabilities.[2] On the other hand, several studies show that political connections lead to lower firm valuations (Aggarwal et al., 2012; Boubakri et al., 2008; Cao et al., 2018; Hadani & Schuler, 2013) possibly through corporate governance issues, higher interest rates on debt capital, and lower capitalization levels.[3] There are even studies that show that political connections are unrelated to various measures of firm performance (see e.g., Ansolabehere et al., 2004; Hersch et al., 2008).

In this study, we attempt to address the inherent concern of endogeneity between political connections and firm value by exploiting an exogenous shock to financial markets.[4] More specifically, we focus on the stock-price performance of U.S. defense firms surrounding the 9/11 terrorist attacks.[5] We examine whether stock-market participants perceived the attacks as an increase in the likelihood of impending military action and subsequently more defense spending. Therefore, we first examine whether stock-market participants anticipated an increase in military spending by bidding up the stock prices of defense firms around the attacks.[6] Second, and perhaps more importantly, we examine whether investors value political connections as a signal that the firm is more likely to receive future federal defense contracts.

We gather data on a sample of 24 defense firms that specialize in military markets. We find that average cumulative abnormal returns (CARs) in the days following the attacks are positive and significant. Perhaps more interestingly, we find the positive CARs are driven primarily by defense firms that had engaged in lobbying activity during the few years before the attacks. For instance, the average two-day market-adjusted CAR, which extends from September 17th to the 18th, for firms that had lobbied was 15.38%, while the corresponding average CAR for the defense firms that had not lobbied was 0.01%. These findings suggest that defense firms that had lobbied, relative to those that had not lobbied, significantly outperformed the rest of the market immediately following the 9/11 attacks. Our results hold in a number of cross-sectional regressions that control for other factors that might influence individual stock returns. In addition, regression results show that (i) firms that had contributed to political action committees (PACs) during the prior election cycle also exhibited the most positive CARs, and (ii) firms that were eventually able to secure more federal defense contracts in the aftermath of the attacks experienced the most positive CARs. Recently, the National Priorities Project reported that post-9/11, military spending increased 50%, adjusting for inflation, while nonmilitary spending (e.g., education, health care, public transit) increased by only 13.5%.[7] Combined with our results, this anecdotal evidence suggests that the stock market accurately predicted an increase in military spending and, to some extent, the firm-level allocation of the spending.

2 | DATA DESCRIPTION

The sample consists of 24 defense firms that conduct business in military markets. There is not a particular standard industrial classification code that captures defense firms that specialize in military markets. These types of firms are important to identify given our hypothesis is about how the market perceives the effect of the terrorist attacks on the possibility of impending military action. Therefore, we identify defense firms that engage in military markets available on Investsnips.com, which provides details about the primary focus of the firms.

From the center for research in security prices (CRSP), we collect pricing data for the sample firms on the event day, September 17, 2001, which is the day financial markets reopened following the terrorist attacks. *MktCap* is the market value of a firm's outstanding shares, or closing price multiplied by shares outstanding, in $billions. *Price* is the closing share price. *Turnover* is the ratio of daily volume to shares outstanding. *Spread* is the difference between the closing ask and bid prices, scaled by the quote midpoint. *NYSE* is an indicator variable equal to one if the stock is

TABLE 1 Summary statistics

Panel A. firm characteristics, political expenditures, and defense contracts

Company name	Ticker	SIC	Lobby	PAC	Lobby_ Amount ($millions)	PAC_ Amount ($millions)	Defense_ Amount ($billions)
Barnes Group	B	3493	0	0	0.0000	0.0000	0.0201
CACI International	CACI	7372	1	0	0.1600	0.0000	0.6207
Comtech Telecommunications Corp	CMTL	3660	1	0	0.1200	0.0000	0.0013
Cubic Corp	CUB	3679	1	1	1.5000	0.1015	0.0086
Curtiss Wright Corp	CW	3728	1	0	0.0100	0.0000	0.0000
Ducommun Incorporated	DCO	3728	1	0	0.2100	0.0000	0.0424
Elbit Systems Ltd	ESLT	3812	0	0	0.0000	0.0000	0.0194
Esterline Technologies Corp	ESL	3559	0	0	0.0000	0.0000	0.2054
Flir Systems Inc	FLIR	3810	1	0	1.2400	0.0000	0.1412
General Dynamics	GD	3731	1	1	18.8861	0.8207	1.9259
Harris Corp	HRS	3663	1	1	3.2550	0.1664	0.2615
Hexcel Corp New	HXL	2221	0	1	0.0000	0.0089	0.0000
Honeywell International	HON	3724	1	1	5.4400	0.0415	0.5126
L3 Communications Holdings Inc	LLL	3663	1	1	2.3880	0.0754	0.0024
Lockheed Martin	LMT	3764	1	1	45.2451	1.0096	1.0340
Northrop Grumman Corporation	NOC	3721	1	1	30.7650	0.4411	1.8318
Raytheon Company	RTN	3812	1	1	9.8450	0.5489	2.2610
Sturm Ruger & Company	RGR	3484	0	0	0.0000	0.0000	0.0001
Sypris Solutions Inc	SYPR	3670	0	0	0.0000	0.0000	0.0055
Taser International	TASR	3480	0	0	0.0000	0.0000	0.0008
Teledyne Technologies	TDY	8711	1	1	0.4200	0.0085	0.4431
Triumph Group Inc	TGI	3724	0	0	0.0000	0.0000	0.1304
Ultralife Batteries Incorporated	ULBI	3690	0	0	0.0000	0.0000	0.0000
Viasat Inc	VSAT	3660	1	0	0.2600	0.0000	0.0162
			0.6250	0.4167	4.9893	0.1343	0.3952

Panel B. stock characteristics

Company name	MktCap	Price	Turnover	Spread	NYSE	Volatility	Return
Barnes Group	0.4065	22.0100	0.0013	0.0009	1	0.0086	−0.0086
CACI International	0.5770	50.4700	0.0842	0.0006	0	0.1804	0.2206
Comtech Telecommunications Corp	0.1096	14.7500	0.0178	0.0168	0	0.1406	0.0206
Cubic Corp	0.2699	30.3000	0.0047	0.0066	0	0.0605	0.0775
Curtiss Wright Corp	0.4502	44.7000	0.0018	0.0078	1	0.0341	−0.0335
Ducommun Incorporated	0.1162	12.0000	0.0060	0.0292	1	0.0729	−0.1459
Elbit Systems Ltd	0.4480	17.3900	0.0073	0.0069	0	0.1151	0.1162
Esterline Technologies Corp	0.3414	16.5000	0.0072	0.0120	1	0.0977	−0.0934
Flir Systems Inc	0.5267	34.8900	0.0590	0.0011	0	0.2499	0.2073
General Dynamics	16.6941	82.9000	0.0305	0.0029	1	0.0697	0.0912

(Continues)

TABLE 1 (Continued)

Panel B. stock characteristics							
Company name	**MktCap**	**Price**	**Turnover**	**Spread**	**NYSE**	**Volatility**	**Return**
Harris Corp	1.9653	29.8500	0.0275	0.0074	1	0.1101	0.0978
Hexcel Corp New	0.2548	6.9500	0.0029	0.0330	1	0.1417	−0.1258
Honeywell International	23.9427	29.5000	0.0221	0.0037	1	0.1227	−0.1737
L3 Communications Holdings Inc	3.3901	87.0000	0.1863	0.0001	1	0.0910	0.3810
Lockheed Martin	19.1615	43.9500	0.0290	0.0061	1	0.0910	0.1469
Northrop Grumman Corporation	8.0940	94.8000	0.0499	0.0026	1	0.0497	0.1569
Raytheon Company	11.3204	31.5000	0.0615	0.0259	1	0.1957	0.2676
Sturm Ruger & Company	0.2772	10.3000	0.0093	0.0097	1	0.0713	0.1075
Sypris Solutions Inc	0.0956	9.7500	0.0000	0.0253	0	0.0003	0.0000
Taser International	0.0228	8.4000	0.0406	0.0036	0	0.1691	−0.0400
Teledyne Technologies	0.5391	17.0000	0.0299	0.0018	1	0.1490	0.1822
Triumph Group Inc	0.4865	34.8000	0.0235	0.0075	1	0.1393	−0.2089
Ultralife Batteries Incorporated	0.0583	4.7500	0.0009	0.0296	0	0.1129	−0.0686
Viasat Inc	0.3377	14.9300	0.0145	0.0027	0	0.1823	−0.0399
	3.7452	31.2246	0.0299	0.0102	0.6250	0.1106	0.0473

Note: The Table reports summary statistics that describe the sample of 24 defense companies on September 17, 2001, which is the day that U.S. financial markets reopened after the September 11th Attacks. *Lobby* is an indicator variable equal to one if a firm had lobbying expenditures during this preattack period and zero otherwise. *PAC* is an indicator variable equal to one if a firm had an established PAC during the preattack period and zero otherwise. *Lobby_Amount* is the sum of the lobbying expenditures made by a firm between 1998 and 2001 (in $millions). *PAC_Amount* is the sum of the PAC contributions made by a firm between 1998 and 2001 (in $millions). *Defense_Amount* is the sum of the federal procurements obtained for a firm between September 12, 2001 and December 31, 2003 (in $billions). *MktCap* is the total dollar market value of a company's outstanding shares in $billions. *Price* is the price of each company share at the close of the day. *Turnover* is the ratio of daily volume to shares outstanding. *Spread* is the difference between the closing ask and bid prices for a stock – scaled by the quote midpoint. *NYSE* in an indicator variable equal to one if the stock is listed on the New York Stock Exchange and zero otherwise. *Volatility* is measured as the difference between the natural log of the intraday high price and the natural log of the intraday low price. Return is the close-to-close return.

listed on the New York Stock Exchange and zero otherwise. *Volatility* is measured as the difference between the natural log of the daily high ask price and the natural log of the daily low bid price (Alizadeh et al., 2002). *Return* is the close-to-close return on the event day.

From the center of responsive politics, we obtain lobbying expenditures and PAC contributions during the preattack period—1998 to 2001. We create two dummy variables capturing whether or not a particular firm had engaged in political activity during the preattack period. *Lobby* is an indicator variable equal to one if a firm had lobbying expenditures during this preattack period and zero otherwise. *PAC* is an indicator variable equal to one if a firm had an established PAC during the preattack period and zero otherwise. We also estimate dollar-based measures by summing all lobbying expenditures (*Lobby_Amount*) and PAC contributions (*PAC_Amount*) for a particular firm over the preattack period—1998 to 2001.[8] From the Federal Procurement Data System, we obtain action obligations secured by the sample defense firms in the three-year period following the attacks. More specifically, *Defense_Amount*, is the sum of the federal procurements obtained for a firm between September 12, 2001 and December 31, 2003 (in $billions).

Table 1 reports statistics that summarize the sample of 24 firms on the event day. We show that 62.5 (41.67)% of sample firms have lobbying expenditures (PAC) in the preattack period. It is important to note that only one firm,

Hexcel Corp., has a PAC but no lobbying expenditures. The average amount of lobbying expenditures and PAC contributions made by a sample firm are $4.9893 million and $0.1343 million, respectively. Furthermore, the average dollar amount of future government contracts obtained by a sample firm in the aftermath of the attacks is $0.3952 billion. We also show that 62.5% of firms are listed on the NYSE. The largest and smallest firms based on *MktCap* are Honeywell International ($23.94 billion) and Taser International ($0.0228 billion). The average stock price across firms is $31.22, daily share turnover of 2.99%, relative spread of 1.02%, and volatility of 11.06%. The average event-day unadjusted return is 4.73% across sample firms, providing the first support for our hypothesis that markets expected an increase in defense spending post 9/11.

3 | EMPIRICAL RESULTS

We begin our analysis by performing a standard event study around the 9/11 terrorist attacks. We estimate abnormal returns using the following three methods. First, market-adjusted abnormal returns (MAR) are measured as:

$$MAR_{i,t} = R_{i,t} - R_{m,t}, \tag{1}$$

where $R_{i,t}$ is the return for defense firm i on day t and $R_{m,t}$ is the CRSP value-weighted market return on day t. Second, market model abnormal returns (MM) are measured as the residual returns from estimating the following regression equation:

$$R_{i,t} = \alpha + \beta R_{m,t} + \varepsilon_{i,t}. \tag{2}$$

Last, Fama and French (1996) and Carhart (1997) four-factor abnormal returns (FF4) are measured as the residual returns from estimating the following regression equation:

$$R_{i,t} = \alpha + \beta_1 R_{m,t} + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 UMD_t + \varepsilon_{i,t}, \tag{3}$$

where SMB is the small minus large market capitalization risk factor, HML is the high book-to-value minus low-book-to-value risk factor, and UMD is the momentum risk factor.[9] Cumulative abnormal returns (CARs) are then estimated as the sum of these abnormal returns over various event windows surrounding September 17, 2001. Table 2 reports average CARs for various event windows. We report cross-sectional t-statistics in parentheses, estimated generalized least squares (EGLS) tests in brackets (Sanders & Robins, 1991), and nonparametric rank tests in braces (Corrado, 1989). The latter two statistics are generated in response to the cross-correlation, or clustering, across securities due to the shared calendar event (Corrado, 1989; Sanders & Robins, 1991).[10]

In Panel A of Table 2, we display the results for the full sample of defense firms. We find positive and significant CARs for the full sample in the period immediately surrounding the reopening of markets after 9/11. However, the initial market reaction seems to be short-lived as the significance levels of the CARs for the longer windows are inconsistent. With that said, the average FF4 CARs are all positive, ranging from 10.06% on the event date (0, 0) to 12.62% in the (0, +20) event window.

In Panel B of Table 2, we report the results for the subsample of defense firms that lobbied in the preattack period. We find that nearly all of the coefficients are positive and significant at the 0.01 level. The average event-day MAR, MM, and FF4 CARs for defense firms that lobbied are 14.78%, 13.04%, and 14.74%, respectively. The average CARs for the (0, +20) event window for defense firms that lobbied are 18.88% (MAR), 14.24% (MM), and 19.60% (FF4). We also note that the rank test does not perform particularly well over longer event windows.

In Panel C of Table 2, we show the results for the subsample of defense firms that did not lobby in the preattack period. We do not find a single positive and significant average CAR among the nonlobbying firms. It is worth noting

that the sample size is extremely small, making it difficult to obtain significant *t*-tests. However, the CARs are generally negative for the average MAR and MM CARs and relatively small for the FF4 CARs.

The results in Panels B and C provide strong support for our hypothesis that investors expected defense spending to increase after 9/11 and firms with political connections would be those to receive such contracts.

TABLE 2 Standard event study of defense firms around 9/11 terrorist attacks

Panel A. All defense firms ($N = 24$)						
	CAR (−1, +1) [1]	**CAR (0, 0) [2]**	**CAR (0, +1) [3]**	**CAR (0, +2) [4]**	**CAR (0, +10) [5]**	**CAR (0, +20) [6]**
MAR	8.91%	9.80%	9.62%	8.69%	7.26%	9.75%
	(2.62)***	(3.22)***	(2.93)***	(2.07)**	(1.23)	(1.57)*
	[2.54]***	[3.20]***	[2.78]***	[1.80]**	[1.14]	[1.41]*
	{0.71}	{2.29}**	{1.53}*	{0.81}	{−0.68}	{−1.09}
MM	6.40%	7.82%	7.17%	5.45%	3.28%	5.98%
	(1.91)**	(2.61)***	(2.20)**	(1.26)	(0.56)	(0.97)
	[1.71]*	[2.46]**	[1.93]**	[0.91]	[0.41]	[0.79]
	{0.51}	{2.28}**	{1.16}	{0.18}	{−1.09}	{−0.76}
FF4	10.94%	10.06%	10.50%	10.08%	11.97%	12.62%
	(3.24)***	(3.35)***	(3.22)***	(2.32)**	(2.03)**	(2.05)**
	{2.70}***	{3.40}***	{2.58}***	{1.82}**	{0.89}	{0.06}
Panel B. Defense firms that lobbied ($N = 15$)						
	CAR (−1, +1) [1]	**CAR (0, 0) [2]**	**CAR (0, +1) [3]**	**CAR (0, +2) [4]**	**CAR (0, +10) [5]**	**CAR (0, +20) [6]**
MAR	14.92%	14.78%	15.38%	15.89%	18.39%	18.88%
	(3.70)***	(3.76)***	(3.98)***	(3.28)***	(3.06)***	(3.16)***
	[3.75]***	[3.66]***	[3.88]***	[3.02]***	[2.85]***	[2.87]***
	{1.81}**	{3.18}***	{2.59}***	{2.20}**	{0.95}	{−0.02}
MM	12.59%	13.04%	13.17%	12.94%	14.27%	14.24%
	(3.30)***	(3.45)***	(3.55)***	(2.61)***	(2.46)***	(2.55)***
	[3.14]***	[3.14]***	[3.24]***	[2.26]**	[2.18]**	[2.28]**
	{1.95}**	{3.44}***	{2.54}***	{1.98}**	{0.80}	{0.41}
FF4	16.22%	14.74%	15.79%	16.68%	21.12%	19.60%
	(3.88)***	(3.69)***	(3.99)***	(3.13)***	(3.26)***	(3.21)***
	{3.05}***	{3.65}***	{3.02}***	{2.85}***	{2.11}**	{0.90}
Panel C. Defense firms that did not lobby ($N = 9$)						
	CAR (−1, +1) [1]	**CAR (0, 0) [2]**	**CAR (0, +1) [3]**	**CAR (0, +2) [4]**	**CAR (0, +10) [5]**	**CAR (0, +20) [6]**
MAR	−1.12%	1.50%	0.01%	−3.31%	−11.31%	−5.48%
	(−0.24)	(0.43)	(0.00)	(−0.54)	(−1.18)	(−0.46)
	[−0.31]	[0.48]	[−0.08]	[−0.71]	[−1.19]	[−0.51]
	{−0.98}	{0.34}	{−0.39}	{−1.31}*	{−2.60}***	{−2.15}**

TABLE 2 (Continued)

Panel C. Defense firms that did not lobby ($N = 9$)						
	CAR (−1, +1) [1]	CAR (0, 0) [2]	CAR (0, +1) [3]	CAR (0, +2) [4]	CAR (0, +10) [5]	CAR (0, +20) [6]
MM	−3.91%	−0.87%	−2.83%	−7.03%	−15.02%	−7.79%
	(−0.83)	(−0.25)	(−0.61)	(−1.10)	(−1.53)	(−0.62)
	[−0.93]	[−0.21]	[−0.72]	[−1.33]	[−1.61]*	[−0.78]
	{−1.57}*	{−0.33}	{−1.17}	{−2.20}**	{−2.94}***	{−1.86}**
FF4	2.14%	2.27%	1.69%	−0.93%	−3.29%	0.99%
	(0.47)	(0.70)	(0.38)	(−0.15)	(−0.34)	(0.08)
	{0.59}	{0.99}	{0.41}	{−0.72}	{−1.36}*	{−1.15}

Note: This table reports average cumulative abnormal returns (CAR) for 24 defense firms surrounding the reopening of markets after the 9/11 terrorist attacks. The companies are separated by those that lobbied between 1998 and 2001 (Panel B) and those that did not lobby (Panel C). We estimate abnormal returns using the following three methods: market-adjusted (MAR), market model (MM), and Fama and French (1996) and Carhart (1997) four-factor model (FF4). We cumulative these abnormal returns over various event windows and for different subsamples. We report *t*-statistics in parentheses, estimated generalized least squares (EGLS) tests in brackets (Sanders & Robins, 1991), and nonparametric rank tests in braces (Corrado, 1989). *, **, and *** denote statistical significance at the 0.10, 0.05, and 0.01, levels, respectively.

Although Table 2 provides clear evidence that the cross-section of CARs around the 9/11 terrorist attacks for defense firms is related to corporate lobbying, there are a variety of other factors that could influence those results. To further explore the impact of lobbying on these event-related CARs, we run the following cross-sectional regression:

$$MM\,CAR(0,+1)_i = \alpha + \beta_1 Political_i^j + \beta_2 Defense\_Amount_i + \beta_3 MktCap_i + \beta_4 Turnover_i + \beta_5 Volatility_i + \beta_6 Spread_i + \beta_7 NYSE_i + \varepsilon_i, \quad (4)$$

where the dependent variable is the market model CAR during the (0, +1) event window. The independent variable *Political* is set to one of four measures capturing the political connections of a particular firm: *Lobby*, *Lobby_Amount* (in $millions), *PAC*, or *PAC_Amount* (in $millions), which are defined in the previous section. The remaining variables have also previously been defined. We report t-statistics in parentheses obtained from White (1980) robust standard errors. Since MacKinlay (1987) contends that the multivariate regression model approach outlined in Sefcik and Thompson (1986) has poor finite sample properties, we use the three-step procedure where the market model is estimated to obtain the residual returns used as the dependent variable in Equation (4).

The results of estimating specifications of Equation (4) are reported in Table 3. In column (1), the coefficient on *Lobby* is 0.1176 and significant at the 0.10 level, suggesting that firms that had lobbied before the attacks experienced an average two-day CAR that was 11.76% higher than firms that had not lobbied. Similarly, in column (2), the coefficient on *PAC* is 0.1526 and significant at the 0.05 level, indicating that firms that had an established PAC before the attacks experienced an average two-day CAR that was 15.26% higher than those that did not. Qualitatively similar results are found in columns (3) and (4) as the coefficient on *Lobby_Amount* and *PAC_Amount* are 0.0054 and 0.3152, respectively. Importantly, in column (5), we find that companies that secured more federal procurements in the aftermath of the terrorist attacks were those that experienced the largest returns, as the variable on *Defense_Amount* is positive (0.1222) and significant at the 0.01 level. Despite the lack of power in our tests, due to the small sample size of firms, we still find that political activity, and

TABLE 3 Cross-sectional regressions

	[1]	[2]	[3]	[4]	[5]
Lobby	0.1176*				
	(1.87)				
PAC		0.1526**			
		(2.37)			
Lobby_Amount			0.0054***		
			(3.46)		
PAC_Amount				0.3152***	
				(6.11)	
Defense_Amount					0.1222***
					(3.69)
MktCap	−0.0011	−0.0035	−0.0040	−0.0073**	−0.0054
	(−0.22)	(−0.67)	(−0.87)	(−2.65)	(−1.25)
Turnover	1.8394***	1.7013***	2.1201***	2.0249***	1.9318***
	(4.33)	(3.32)	(4.82)	(5.39)	(5.41)
Volatility	−0.2943	−0.1650	−0.0122	−0.0442	−0.3091
	(−0.77)	(−0.42)	(−0.03)	(−0.11)	(−0.87)
Spread	−1.3346	−2.8081	−1.8491	−2.5955	−2.9217*
	(−0.47)	(−1.15)	(−0.71)	(−1.22)	(−1.72)
NYSE	−0.0953	−0.1381**	−0.0969	−0.1021	−0.1196*
	(−1.67)	(−2.23)	(−1.47)	(−1.61)	(−1.95)
Constant	0.0529	0.1033	0.0773	0.0911*	0.1244***
	(0.75)	(1.46)	(1.14)	(1.73)	(3.69)
Robust SE	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.3344	0.3699	0.3042	0.3979	0.3991
N	24	24	24	24	24

Note: The table reports the results from estimating the following equation using cross-sectional data. $MM\,CAR(0,+1)_i = \alpha + \beta_1 Political_i^j + \beta_2 Defense\_Amount_i + \beta_3 MktCap_i + \beta_4 Turnover_i + \beta_5 Volatility_i + \beta_6 Spread_i + \beta_7 NYSE_i + \varepsilon_i$, the dependent variable is the market model CAR in the (0, +1) event window surrounding the reopening of financial markets after the 9/11 terrorist attacks. The independent variable *Political* is set to one of four measures capturing the political connection of a particular firm: *Lobby*, *Lobby_Amount*, *PAC*, or *PAC_Amount*. *Lobby* is an indicator variable equal to one if a firm had lobbying expenditures during this preattack period and zero otherwise. *PAC* is an indicator variable equal to one if a firm had an established PAC during the preattack period and zero otherwise. *Lobby_Amount* is the sum of the lobbying expenditures made by a firm between 1998 and 2001 (in $millions). *PAC_Amount* is the sum of the PAC contributions made by a firm between 1998 and 2001 (in $millions). *Defense_Amount* is the sum of the federal procurements obtained for a firm between September 12, 2001 and December 31, 2003 (in $billions). The control variables include the following. *MktCap* is the total dollar market value of a company's outstanding shares in $billions. *Turnover* is the ratio of daily volume to shares outstanding. *Spread* is the difference between the closing ask and bid prices for a stock – scaled by the quote midpoint. *NYSE* in an indicator variable equal to one if the stock is listed on the New York Stock Exchange and zero otherwise. *Volatility* is measured as the difference between the natural log of the intraday high price and the natural log of the intraday low price. Return is the close-to-close return. We report t-statistics in parentheses obtained from White (1980) robust standard errors. *, **, and *** denote statistical significance at the 0.10, 0.05, and 0.01 levels, respectively.

increased likelihood of securing defense contracts, affect the stock market response of defense firms to the 9/11 attacks.

4 | CONCLUSION

In this study, we examine whether the stock prices of companies within the military defense industry increase during the period immediately following the 9/11 terrorist attacks. We find that the prices for defense firms generally increase in the days surrounding the reopening of financial markets after the attacks, which is consistent with Essaddam and Douch (2013). However, the stock return variation across defense firms is largely explained by how politically connected (i.e., lobbying activities or PAC contributions) the firm was before the attacks. The implications of our results are broad, as they suggest that stock market participants are forward-looking and expected the federal government to respond to the attacks with more military expenditures. Furthermore, firms with political connections were identified as those most likely to secure defense contracts. Therefore, stock markets seem to value political engagement when potential defense contracts are at stake.

ENDNOTES

[1] See, for example, Keim and Zeithaml (1986), Hillman and Hitt (1999), Schuler et al. (2002), McWilliams et al. (2002), Frynas and Mellahi (2003), Keillor et al. (2005), Insead and Chatain (2008).

[2] See Johnson and Mitton (2003), Joh and Chiu (2004), Cull and Xu (2005), Khwaja and Mian (2005), Fraser et al. (2006), Leuz and Oberholzer-Gee (2006), Boubakri, Guedhami, et al. (2012), Boubakri, Cosset, et al. (2012), Hassan et al. (2012), Hochberg et al. (2009), Morck et al. (2000), Adhikari et al. (2006), Richter et al. (2009), Wu, Wu, and Rui (2012), and Wu et al. (2012).

[3] See Fan et al. (2007), Bliss and Gul (2012), and Carretta et al. (2012).

[4] Okhmatovskiy (2010) suggests that a possible reason for the mixed evidence of a direct link between political activity and firm value is due to political constraints and the costs associated with influencing the political process. Similarly, the results in Unsal et al. (2016) suggest that any firm-level benefit associated with political connectedness is dependent upon the political affiliation of firm management.

[5] Studies show that the 9/11 attacks adversely affected the stock prices of airlines, marine operators, and, more broadly, both U.S. and foreign stock markets (see e.g., Carter & Simkins, 2004; Drakos, 2004; Homan, 2009; Charles and Darne, 2006; Brounen & Derwall, 2010; and Kollias et al., 2011).

[6] Essaddam and Douch (2013) provide evidence that U.S. defense firms outperform the market over a twelve-month period following the 9/11 attacks.

[7] The article, "How Military Spending has Changed Since 9/11" is available at: https://www.nationalpriorities.org/campaigns/how-military-spending-has-changed/.

[8] Throughout the analysis, we use lobbying activity and PAC contributions as measures of political connectedness. Admittedly, there are other measures of political connections, such as hiring executives with political connections or having politically-connected board members that we do not examine. Perhaps a fruitful area for future research would be to examine these additional types of connections in the context of our study.

[9] For equations (2) and (3) the models are run in a pre-estimation window that ends 46 days before the event day (approximately two-months) and uses a maximum of 255 trading days in the estimation period (approximately one year of trading data).

[10] It is worth noting that Collins and Dent (1984) highlight in their concluding remarks, errors associated with cross-correlation are more likely in larger sample sizes and analysis using portfolios rather than individual securities. Our analysis consists of only 24 individual defense firms, so cross-correlation may be less of a concern in our empirics.

REFERENCES

Adhikari, A., Derashid, C., & Zhang, H. (2006). Public policy, political connections, and effective tax rates: Longitudinal evidence from Malaysia. *Journal of Accounting and Public Policy*, *25*(5), 574–595.

Aggarwal, R.K., Meschke, F. and Wang, T.Y., 2012. Corporate political donations: investment or agency? published in Business and Politics, 14.

Alizadeh, S., Brandt, M. W., & Diebold, F. X. (2002). Range-based estimation of stochastic volatility models. *The Journal of Finance*, *57*(3), 1047–1091.

Ansolabehere, S., Snyder, J. M., Jr., & Ueda, M. (2004). Did firms profit from soft money? *Election Law Journal*, *3*(2), 193–198.

Bliss, M. A., & Gul, F. A. (2012). Political connection and cost of debt: Some Malaysian evidence. *Journal of Banking & Finance*, *36*(5), 1520–1527.

Boubakri, N., Cosset, J. C., & Saffar, W. (2008). Political connections of newly privatized firms. *Journal of Corporate Finance*, *14*(5), 654–673.

Brounen, D., & Derwall, J. (2010). The impact of terrorist attacks on international stock markets. *European Financial Management*, *16*(4), 585–598.

Cao, Z., Fernando, G. D., Tripathy, A., & Upadhyay, A. (2018). The economics of corporate lobbying. *Journal of Corporate Finance*, *49*, 54–80.

Carhart, M. M. (1997). On persistence in mutual fund performance. *The Journal of Finance*, *52*(1), 57–82.

Carretta, A., Farina, V., Gon, A., & Parisi, A. (2012). Politicians 'on board': Do political connections affect banking activities in Italy? *European Management Review*, *9*(2), 75–83.

Carter, D. A., & Simkins, B. J. (2004). The market's reaction to unexpected, catastrophic events: The case of airline stock returns and the September 11th attacks. *The Quarterly Review of Economics and Finance*, *44*(4), 539–558.

Collins, D. W., & Dent, W. T. (1984). A comparison of alternative testing methodologies used in capital market research. *Journal Of Accounting Research*, *22*, 48–84.

Corrado, C. J. (1989). A nonparametric test for abnormal security-price performance in event studies. *Journal of Financial Economics*, *23*(2), 385–395.

Cull, R., & Xu, L. C. (2005). Institutions, ownership, and finance: The determinants of profit reinvestment among Chinese firms. *Journal of Financial Economics*, *77*(1), 117–146.

Drakos, K. (2004). Terrorism-induced structural shifts in financial risk: Airline stocks in the aftermath of the September 11th terror attacks. *European Journal of Political Economy*, *20*(2), 435–446.

Essaddam, N., & Douch, M. (2013). Short and long-term effects of September 11 on stock returns: Evidence from US defense firms. *Journal of Applied Finance and Banking*, *3*(3), 239.

Faccio, M. (2006). Politically connected firms. *American Economic Review*, *96*(1), 369–386.

Fama, E. F., & French, K. R. (1996). Multifactor explanations of asset pricing anomalies. *The Journal of Finance*, *51*(1), 55–84.

Fan, J. P., Wong, T. J., & Zhang, T. (2007). Politically connected CEOs, corporate governance, and post-IPO performance of China's newly partially privatized firms. *Journal of Financial Economics*, *84*(2), 330–357.

Fisman, R. (2001). Estimating the value of political connections. *American Economic Review*, *91*(4), 1095–1102.

Fraser, D. R., Zhang, H., & Derashid, C. (2006). Capital structure and political patronage: The case of Malaysia. *Journal of Banking & Finance*, *30*(4), 1291–1308.

Frynas, J. G., & Mellahi, K. (2003). Political risks as firm-specific (dis) advantages: Evidence on transnational oil firms in Nigeria. *Thunderbird International Business Review*, *45*(5), 541–565.

Hadani, M., & Schuler, D. A. (2013). In search of El Dorado: The elusive financial returns on corporate political investments. *Strategic Management Journal*, *34*(2), 165–181.

Hassan, T., Kabir Hassan, M., Mohamad, S., & Chaw Min, C. (2012). Political patronage and firm performance: Further evidence from Malaysia. *Thunderbird International Business Review*, *54*(3), 373–393.

Hersch, P., Netter, J. M., & Pope, C. (2008). Do campaign contributions and lobbying expenditures by firms create "political" capital? *Atlantic Economic Journal*, *36*(4), 395–405.

Hillman, A. J., & Hitt, M. A. (1999). Corporate political strategy formulation: A model of approach, participation, and strategy decisions. *Academy of Management Review*, *24*, 825–842.

Hochberg, Y. V., Sapienza, P., & Vissing-Jørgensen, A. (2009). A lobbying approach to evaluating the Sarbanes-Oxley act of 2002. *Journal of Accounting Research*, *47*(2), 519–583.

Homan, A. C. (2009). The impact of 9/11 on the persistence of financial return volatility of marine firms. *Eastern Economic Journal*, *35*(1), 71–83.

Insead, L. C., & Chatain, O. (2008). Competitors' resource-oriented strategies: Acting on competitors' resources through interventions in factor markets and political markets. *Academy of Management Review*, *33*(1), 97–121.

Joh, S. W., & Chiu, M. M. (2004). Loans to distressed firms: Political connections, related lending, business group affiliation and bank governance. *In Econometric Society 2004 Far Eastern Meetings (No. 790). Econometric Society*, 1–39.

Johnson, S., & Mitton, T. (2003). Cronyism and capital controls: Evidence from Malaysia. *Journal of Financial Economics*, *67*(2), 351–382.

Keillor, B. D., Wilkinson, T. J., & Owens, D. (2005). Threats to international operations: Dealing with political risk at the firm level. *Journal of Business Research*, *58*(5), 629–635.

Keim, G. D., & Zeithaml, C. P. (1986). Corporate political strategy and legislative decision making: A review and contingency approach. *Academy of Management Review*, *11*(4), 828–843.

Khwaja, A. I., & Mian, A. (2005). Do lenders favor politically connected firms? Rent provision in an emerging financial market. *The Quarterly Journal of Economics*, *120*(4), 1371–1411.

Kollias, C., Manou, E., Papadamou, S., & Stagiannis, A. (2011). Stock markets and terrorist attacks: Comparative evidence from a large and a small capitalization market. *European Journal of Political Economy*, *27*, S64–S77.

Leuz, C., & Oberholzer-Gee, F. (2006). Political relationships, global financing, and corporate transparency: Evidence from Indonesia. *Journal of Financial Economics*, *81*(2), 411–439.

McWilliams, A., Van Fleet, D. D., & Cory, K. D. (2002). Raising rivals' costs through political strategy: An extension of resource-based theory. *Journal of Management Studies*, *39*, 707–724.

Morck, R., Yeung, B., & Yu, W. (2000). The information content of stock markets: Why do emerging markets have synchronous stock price movements? *Journal of Financial Economics*, *58*(1–2), 215–260.

Okhmatovskiy, I. (2010). Performance implications of ties to the government and SOEs: A political embeddedness perspective. *Journal of Management Studies*, *47*(6), 1020–1047.

Richter, B. K., Samphantharak, K., & Timmons, J. F. (2009). Lobbying and taxes. *American Journal of Political Science*, *53*(4), 893–909.

Roberts, B. E. (1990). A dead senator tells no lies: Seniority and the distribution of federal benefits. *American Journal of Political Science*, *34*, 31. https://doi.org/10.2307/2111510

Sanders, R. W., & Robins, R. P. (1991). Discriminating between wealth and information effects in event studies in accounting and finance research. *Review of Quantitative Finance and Accounting*, *1*(3), 307–329.

Schuler, D. A., Rehbein, K., & Cramer, R. D. (2002). Pursuing strategic advantage through political means: A multivariate approach. *Academy of Management Journal*, *45*, 659–672.

Sefcik, S. E., & Thompson, R. (1986). An approach to statistical inference in cross-sectional models with security abnormal returns as dependent variable. *Journal of Accounting Research*, *24*, 316–334.

Stigler, G. J. (1971). The theory of economic regulation. *The Bell Journal of Economics and Management Science*, *2*, 3. https://doi.org/10.2307/3003160

Unsal, O., Hassan, M. K., & Zirek, D. (2016). Corporate lobbying, CEO political ideology and firm performance. *Journal of Corporate Finance*, *38*, 126–149.

White, H. (1980). A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. *Econometrica: journal of the Econometric Society*, *48*, 817–838.

Wu, W., Wu, C., & Rui, O. M. (2012). Ownership and the value of political connections: Evidence from China. *European Financial Management*, *18*(4), 695–729.

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