

ONLINE APPENDIX TABLES OF  
**STAGGERED BOARDS AND LONG-TERM FIRM VALUE, REVISITED**

**November 2016**

K. J. Martijn Cremers\*  
Lubomir P. Litov\*\*  
Simone M. Sepe\*\*\*

---

The paper itself is available at <https://papers.ssrn.com/sol3/papers.cfm?abstract-id=2364165>.

\* University of Notre Dame, Mendoza College of Business. Email address: [mcremers@nd.edu](mailto:mcremers@nd.edu). [Corresponding author, phone: 574-631-4476](#).

\*\* The University of Oklahoma, Price College of Business and the College of Law and Wharton Financial Institutions Center, University of Pennsylvania. Email address: [litov@ou.edu](mailto:litov@ou.edu).

\*\*\* University of Chicago Law School and Institute for Advanced Study in Toulouse – Fondation Jean-Jacques Laffont – Toulouse School of Economics. Email address: [ssepe@uchicago.edu](mailto:ssepe@uchicago.edu).

**APPENDIX TABLE A.1: CORRELATIONS OF KEY DEPENDENT AND INDEPENDENT VARIABLES**

Table A.1 shows Pearson pairwise correlations with *p*-values between parentheses. Variable descriptions are given in Table 1.

	<i>Q</i>	<i>Staggered Board</i>	<i>Staggered Board-Charter</i>	<i>Staggered Board-Bylaws</i>	<i>Ln (Assets)</i>	<i>Delaware Incorp.</i>	<i>ROA</i>	<i>CAPX /Assets</i>	<i>R&amp;D / Sales</i>
<i>Staggered Board</i>	0.015 (0.00)	1.000							
<i>Staggered Board-Charter</i>	0.037 (0.00)	0.864 (0.00)	1.000						
<i>Staggered Board-Bylaws</i>	-0.032 (0.00)	0.274 (0.00)	-0.241 (0.00)	1.000					
<i>Ln (Assets)</i>	-0.063 (0.00)	-0.060 (0.00)	-0.009 (0.12)	-0.034 (0.00)	1.000				
<i>Delaware Incorporation</i>	0.090 (0.00)	0.006 (0.30)	0.029 (0.00)	-0.067 (0.00)	0.040 (0.00)	1.000			
<i>ROA</i>	0.424 (0.00)	-0.023 (0.00)	-0.027 (0.00)	0.034 (0.00)	-0.046 (0.00)	-0.034 (0.00)	1.000		
<i>CAPX/Assets</i>	-0.013 (0.01)	-0.041 (0.00)	-0.051 (0.00)	0.032 (0.00)	-0.041 (0.00)	-0.031 (0.00)	0.337 (0.00)	1.000	
<i>R&amp;D/ Sales</i>	0.323 (0.00)	-0.026 (0.00)	-0.007 (0.21)	-0.052 (0.00)	-0.114 (0.00)	0.139 (0.00)	-0.144 (0.00)	-0.151 (0.00)	1.000
<i>Industry M&amp;A</i>	-0.010 (0.07)	0.053 (0.00)	0.050 (0.00)	-0.007 (0.21)	-0.001 (0.91)	0.012 (0.03)	-0.055 (0.00)	-0.034 (0.00)	0.029 (0.00)

**APPENDIX TABLE A.2, PANEL A: DESCRIPTIVE STATISTICS FOR MAIN DEPENDENT AND INDEPENDENT VARIABLES FOR FIRMS WITHOUT A STAGGERED BOARD**

Table A.2, Panel A presents sample descriptive statistics for the main dependent and independent variables, as well as the interacted variables for firm-year observations for the sample of firms without a staggered board. All continuous variables are winsorized at 2.5% in both tails.

<b>Dependent Variables:</b>	<b>Mean</b>	<b>Median</b>	<b>St. Dev.</b>	<b>Min</b>	<b>Max</b>	<b>Obs.</b>
<i>Q</i> <sub>[t]</sub>	1.599	1.264	0.917	0.728	4.729	16,398
<b>Independent Variables:</b>	<b>Mean</b>	<b>Median</b>	<b>St. Dev.</b>	<b>Min</b>	<b>Max</b>	<b>Obs.</b>
<i>CAPX/Assets</i> <sub>[t]</sub>	0.061	0.049	0.047	0.000	0.198	16,398
<i>Delaware Incorporation</i> <sub>[t]</sub>	0.555	1.000	0.497	0.000	1.000	16,398
<i>G-Index (minus staggered board)</i> <sub>[t]</sub>	6.368	6.000	2.959	1.000	17.000	11,538
<i>Insider Ownership</i> <sub>[t]</sub>	0.071	0.031	0.110	0.000	1.000	8,742
<i>Ln (Age)</i> <sub>[t]</sub>	2.904	2.996	0.979	0.000	4.454	12,265
<i>Ln (Assets)</i> <sub>[t]</sub>	7.450	7.350	1.694	4.584	11.171	16,398
<i>Industry M&amp;A Volume</i> <sub>[t]</sub>	0.022	0.006	0.045	0.000	0.355	16,398
<i>R&amp;D/Sales</i> <sub>[t]</sub>	0.030	0.000	0.057	0.000	0.231	16,398
<i>ROA</i> <sub>[t]</sub>	0.141	0.136	0.080	-0.041	0.324	16,398
<i>Staggered Board</i> <sub>[t]</sub>	0.000	0.000	0.000	0.000	0.000	16,398
<b>Interacted Variables:</b>	<b>Mean</b>	<b>Median</b>	<b>St. Dev.</b>	<b>Min</b>	<b>Max</b>	<b>Obs.</b>
<i>Institutional Holding Duration</i> <sub>[t]</sub>	6.833	6.800	1.009	4.378	9.509	12,281
<i>Percent Transient Institutions</i> <sub>[t]</sub>	0.219	0.195	0.134	0.008	0.644	12,857
<i>Ln(Intangible / Total Assets)</i> <sub>[t]</sub>	-0.492	-0.323	0.496	-3.517	0.000	16,252
<i>Ranked Patent Citation Count</i> <sub>[t]</sub>	0.397	0.343	0.234	0.105	1.051	8,155
<i>Firm Sales</i> <sub>[t]</sub>	7.364	7.269	1.642	-2.937	13.089	16,390
<i>Research Quotient</i> <sub>[t]</sub>	0.120	0.116	0.053	-0.015	0.275	7,170
<i>Contract Specificity</i> <sub>[t]</sub>	0.912	0.961	0.126	0.352	0.998	4,791
<i>Labor Productivity</i> <sub>[t]</sub>	1.531	1.126	0.629	0.825	2.904	11,918
<i>Large Customer 10%</i> <sub>[t]</sub>	0.334	0.000	0.472	0.000	1.000	12,604
<i>Strategic Alliance</i> <sub>[t]</sub>	0.228	0.000	0.419	0.000	1.000	11,950

**APPENDIX TABLE A.2, PANEL B: DESCRIPTIVE STATISTICS FOR MAIN DEPENDENT AND INDEPENDENT VARIABLES FOR FIRMS WITH A STAGGERED BOARD**

Table A.2, Panel B presents sample descriptive statistics for the main dependent and independent variables, as well as the interacted variables for firm-year observations for firms with a staggered board. All continuous variables are winsorized at 2.5% in both tails.

<b>Dependent Variables:</b>	<b>Mean</b>	<b>Median</b>	<b>St. Dev.</b>	<b>Min</b>	<b>Max</b>	<b>Obs.</b>
<i>Q</i> <sub>[t]</sub>	1.626	1.341	0.862	0.728	4.729	18,078
<b>Independent Variables:</b>	<b>Mean</b>	<b>Median</b>	<b>St. Dev.</b>	<b>Min</b>	<b>Max</b>	<b>Obs.</b>
<i>CAPX/Assets</i> <sub>[t]</sub>	0.057	0.045	0.045	0.000	0.198	18,078
<i>Delaware Incorporation</i> <sub>[t]</sub>	0.561	1.000	0.496	0.000	1.000	18,078
<i>G-Index (minus staggered board)</i> <sub>[t]</sub>	8.933	9.000	2.904	1.000	18.000	11,987
<i>Insider Ownership</i> <sub>[t]</sub>	0.069	0.034	0.098	0.000	1.000	12,474
<i>Ln (Age)</i> <sub>[t]</sub>	2.838	2.996	0.982	0.000	4.454	15,489
<i>Ln (Assets)</i> <sub>[t]</sub>	7.261	7.146	1.458	4.584	11.171	18,078
<i>Industry M&amp;A Volume</i> <sub>[t]</sub>	0.027	0.010	0.050	0.000	0.355	18,078
<i>R&amp;D/Sales</i> <sub>[t]</sub>	0.028	0.000	0.055	0.000	0.231	18,078
<i>ROA</i> <sub>[t]</sub>	0.137	0.134	0.077	-0.041	0.324	18,078
<i>Staggered Board</i> <sub>[t]</sub>	1.000	1.000	0.000	1.000	1.000	18,078
<b>Interacted Variables:</b>	<b>Mean</b>	<b>Median</b>	<b>St. Dev.</b>	<b>Min</b>	<b>Max</b>	<b>Obs.</b>
<i>Institutional Holding Duration</i> <sub>[t]</sub>	6.815	6.794	0.916	4.378	9.509	15,650
<i>Percent Transient Institutions</i> <sub>[t]</sub>	0.224	0.199	0.137	0.008	0.644	15,985
<i>Ln(Intangible / Total Assets)</i> <sub>[t]</sub>	-0.482	-0.324	0.472	-3.876	0.000	17,977
<i>Ranked Patent Citation Count</i> <sub>[t]</sub>	0.389	0.343	0.227	0.105	1.053	9,623
<i>Firm Sales</i> <sub>[t]</sub>	7.185	7.137	1.410	-1.386	12.326	18,070
<i>Research Quotient</i> <sub>[t]</sub>	0.113	0.109	0.045	-0.015	0.275	7,677
<i>Contract Specificity</i> <sub>[t]</sub>	0.913	0.968	0.135	0.352	0.998	5,687
<i>Labor Productivity</i> <sub>[t]</sub>	1.427	1.076	0.600	0.825	2.904	15,797
<i>Large Customer 10%</i> <sub>[t]</sub>	0.333	0.000	0.471	0.000	1.000	16,503
<i>Strategic Alliance</i> <sub>[t]</sub>	0.204	0.000	0.403	0.000	1.000	15,832

**APPENDIX TABLE A.3: FIRM VALUE AND STAGGERED BOARDS – BETWEEN-FIRMS ESTIMATORS**

Table A.3 presents the ‘between-firms’ estimator (i.e., exploiting cross-sectional variation only and ignoring time series variation within firms) of the *Staggered Board* coefficient in annual pooled panel  $Q$  regressions on *Staggered Board* with year dummies and the following control variables: *Staggered Board*<sub>[t-1]</sub>,  $\ln(\text{Assets})$ <sub>[t-1]</sub>, *Delaware Incorporation*<sub>[t-1]</sub>,  $ROA$ <sub>[t-1]</sub>,  $CAPX/Assets$ <sub>[t-1]</sub>,  $R\&D/Sales$ <sub>[t-1]</sub>, and *Industry M&A Volume*<sub>[t-1]</sub>. The analysis includes the following sub-periods: 1978-2015, 1978-1995, and 1996-2015. All variables are defined in Table 1. T-statistics (in their absolute value) are based on robust standard errors clustered by firm and presented in parentheses below the coefficients. Statistical significance of the coefficients is indicated at the 1%, 5%, and 10% levels by \*\*\*, \*\*, and \*, respectively. The table also reports the panel standard deviation decomposition for  $Q$  in its cross-sectional (between firms) and time series (within firms) dimensions.

Dep. Variable: $Q_{it}$			
<i>Variables</i>	(1)	(2)	(3)
<b>Period:</b>	1978-2015	1978-1995	1996-2015
<u>Between-estimator</u>			
<i>Staggered Board</i> <sub>[t-1]</sub>	-0.047** (2.02)	-0.043 (1.57)	-0.061** (2.17)
Number of firms	3,076	1,581	2,415
R <sup>2</sup>	0.501	0.549	0.459
<u>Panel Standard Deviation Decomposition for <math>Q_{it}</math></u>			
Overall	0.889	0.666	0.966
Between	0.816	0.709	0.867
Within	0.512	0.343	0.530

**APPENDIX TABLE A.4: FIRM VALUE AND STAGGERED BOARDS: ROBUSTNESS**

Table A.4 first shows a replication of Bebchuk and Cohen (2005), using their sample period of 1995-2002, with additional control variables in the regression for columns (1) and (2):  $G\text{-Index}_{[t-1]}$ ,  $\ln(\text{Firm Age})_{[t-1]}$ ,  $\text{Insider Ownership}_{[t-1]}$ , and  $\text{Insider Ownership}^2_{[t-1]}$ . The regression for column (1) includes year and industry (4-digit SIC code) fixed effects, and for column (2) includes year and firm fixed effects. In the regression for column (3), we also control for the lagged dependent variable,  $Q_{[t-1]}$ , including both standard controls and additional controls, as well as year and 4-digit SIC industry fixed effects and using the period 1995-2002. The regressions for columns (4) and (5) include the set of standard controls and 1978-1985 and 1986-2015, respectively, with year and firm fixed effects. Finally, in the regression for column (6), we consider the full time period, 1978-2015, with 4-digit SIC industry and year fixed effects, and also control for the lagged dependent variable,  $Q_{[t-1]}$ . All control variables are defined in Table 1. T-statistics (in their absolute value) are based on robust standard errors clustered by firm and presented in parentheses below the coefficients. Statistical significance of the coefficients is indicated at the 1%, 5%, and 10% levels by \*\*\*, \*\*, and \*, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
<b>Period:</b>		1995-2002		1978-1985	1986-2015	1978-2015
$Q_{[t-1]}$			0.676*** (32.71)			0.776*** (98.55)
<i>Staggered Board</i> <sub>[t-1]</sub>	-0.042 (1.17)	0.119* (1.82)	-0.016 (0.87)	0.031 (1.12)	0.068** (2.1)	-0.008 (1.39)
<i>G-Index</i> <sub>[t-1]</sub>	-0.005 (0.57)	-0.005 (0.33)	0.000 (0.06)			
$\ln(\text{Assets})_{[t-1]}$	0.052*** (3.24)	-0.396*** (8.10)	0.018** (2.27)	-0.147*** (4.05)	-0.271*** (14.29)	-0.004 (1.57)
$\ln(\text{Firm Age})_{[t-1]}$	-0.050 (1.34)	0.327 (1.59)	-0.005 (0.25)			
<i>Delaware Incorporation</i> <sub>[t-1]</sub>	-0.010 (0.28)	0.562 (1.27)	-0.002 (0.13)	-	-0.219 (1.09)	-0.002 (0.28)
<i>Insider Ownership</i> <sub>[t-1]</sub>	0.318 (0.95)	-0.742 (1.06)	0.171 (1.01)			
<i>Insider Ownership</i> <sup>2</sup> <sub>[t-1]</sub>	-0.179 (0.37)	2.071*** (7.74)	0.011 (0.04)			
<i>ROA</i> <sub>[t-1]</sub>	5.939*** (19.11)	-0.907** (2.19)	1.205*** (5.74)	0.979*** (8.71)	3.362*** (20.76)	0.645*** (10.04)
<i>CAPX/Assets</i> <sub>[t-1]</sub>	-1.048** (2.17)	0.423 (0.35)	-0.75*** (3.04)	0.09 (0.59)	0.106 (0.53)	-0.467*** (5.53)
<i>R&amp;D/Sales</i> <sub>[t-1]</sub>	5.499*** (7.17)	0.129 (0.93)	1.552*** (3.70)	-0.618 (0.43)	0.822 (1.52)	0.714*** (5.73)
<i>Industry M&amp;A Volume</i> <sub>[t-1]</sub>	0.129 (0.85)	-0.005 (0.33)	0.136 (1.11)	-0.203 (1.38)	-0.271*** (3.57)	-0.135** (2.30)
<i>N</i>	5,253	5,253	5,253	6,054	28,422	31,195
Adjusted R-Squared	0.61	0.80	0.77	0.72	0.71	0.79
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes
Firm Effect	No	Yes	No	Yes	Yes	No
Industry Effect	Yes	No	Yes	No	No	Yes

**APPENDIX TABLE A.5: FIRM VALUE AND STAGGERED BOARDS: ROBUSTNESS, INDUSTRY FIXED EFFECTS**

Table A.5 first shows a replication of Bebchuk and Cohen (2005), using their sample period of 1995-2002, with additional control variables:  $G\text{-Index}_{[t-1]}$ ,  $\ln(\text{Firm Age})_{[t-1]}$ ,  $\text{Insider Ownership}_{[t-1]}$ , and  $\text{Insider Ownership}^2_{[t-1]}$  and using different industry fixed effects (2-digit SIC code, 3-digit SIC code and Fama-French 49 industries, 'FF 49'). In columns (4)-(6), we also control for the lagged dependent variable,  $Q_{[t-1]}$ . All control variables are defined in Table 1. T-statistics (in their absolute value) are based on robust standard errors clustered by firm and presented in parentheses below the coefficients. Statistical significance of the coefficients is indicated at the 1%, 5%, and 10% levels by \*\*\*, \*\*, and \*, respectively.

	Period:		1995-2002			
	(1)	(2)	(3)	(4)	(5)	(6)
$Q_{[t-1]}$				0.756*** (44.62)	0.694*** (36.9)	0.752*** (44.7)
$\text{Staggered Board}_{[t-1]}$	-0.027 (1.18)	-0.049** (2.1)	-0.048** (2.17)	-0.013 (0.82)	-0.025 (1.43)	-0.020 (1.30)
$G\text{-Index}_{[t-1]}$	-0.014*** (2.82)	-0.009* (1.90)	-0.014*** (2.97)	-0.003 (0.90)	-0.002 (0.68)	-0.002 (0.70)
$\ln(\text{Assets})_{[t-1]}$	0.041*** (4.27)	0.051*** (5.13)	0.027*** (2.88)	0.008 (1.18)	0.013* (1.73)	0.002 (0.34)
$\ln(\text{Firm Age})_{[t-1]}$	-0.06** (2.53)	-0.034 (1.43)	-0.052** (2.37)	-0.006 (0.35)	0.005 (0.25)	-0.006 (0.40)
$\text{Delaware Incorporation}_{[t-1]}$	-0.01 (0.49)	-0.013 (0.58)	0.014 (0.68)	-0.003 (0.20)	-0.004 (0.22)	0.002 (0.16)
$\text{Insider Ownership}_{[t-1]}$	-0.082 (0.21)	0.222 (0.58)	-0.126 (0.33)	-0.029 (0.11)	0.127 (0.46)	-0.087 (0.35)
$\text{Insider Ownership}^2_{[t-1]}$	0.988 (1.01)	-0.164 (0.17)	0.637 (0.66)	0.609 (0.96)	0.098 (0.15)	0.651 (1.05)
$\text{ROA}_{[t-1]}$	7.039*** (34.4)	6.181*** (29.30)	6.869*** (33.98)	0.977*** (4.94)	1.057*** (5.09)	0.967*** (4.98)
$\text{CAPX/Assets}_{[t-1]}$	-1.393*** (4.35)	-1.281*** (3.82)	-1.221*** (4.04)	-0.513** (2.18)	-0.686*** (2.67)	-0.426* (1.94)
$\text{R\&D/Sales}_{[t-1]}$	6.68*** (18.82)	5.456*** (13.15)	5.621*** (13.29)	1.573*** (5.43)	1.581*** (4.54)	1.298*** (3.95)
$\text{Industry M\&A Volume}_{[t-1]}$	-0.109 (0.62)	0.122 (0.69)	0.178 (0.93)	0.017 (0.14)	0.106 (0.77)	0.171 (1.20)
$N$	5,253	5,253	5,214	5,236	5,236	5,197
Adjusted R-Squared	0.52	0.59	0.52	0.76	0.77	0.76
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry Effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry	2-digit SIC	3-digit SIC	FF 49	2-digit SIC	3-digit SIC	FF 49

**APPENDIX TABLE A.6: FIRM VALUE AND STAGGERED BOARDS: ROBUSTNESS, REDUCED SAMPLES**

Table A.6 presents annual pooled panel  $Q$  regressions on *Staggered Board* with firm fixed effects. All specifications include year dummies and the following control variables: *Staggered Board*<sub>[t-1]</sub>, *Ln (Assets)*<sub>[t-1]</sub>, *Delaware Incorporation*<sub>[t-1]</sub>, *ROA*<sub>[t-1]</sub>, *CAPX/Assets*<sub>[t-1]</sub>, *R&D/ Sales*<sub>[t-1]</sub>, and *Industry M&A Volume*<sub>[t-1]</sub>. The analysis includes the following sub-periods: 1978-2015 except for 1999-2001 in column (1); and 1978-2015 except for 2005-2007 in column (2). Column (3) presents the baseline model with firm fixed effects (year effects omitted due to collinearity) in 1978-2015 with the addition of higher-order fixed effects where we interact 4-digit SIC codes and year fixed effects. All variables are defined in Table 1. T-statistics (in their absolute value) are based on robust standard errors clustered by firm and presented in parentheses below the coefficients. Statistical significance of the coefficients is indicated at the 1%, 5%, and 10% levels by \*\*\*, \*\*, and \*, respectively.

Dep. Variable: $Q_{[t]}$			
<i>Variables</i>	(1)	(2)	(3)
	<b>Fixed Effects:</b> Firm + Year Fixed Effects		
<i>Staggered Board</i> <sub>[t-1]</sub>	0.049*	0.049*	0.053**
<i>(firm cluster)</i>	(1.95)	(1.92)	(2.16)
<i>Ln (Assets)</i> <sub>[t-1]</sub>	-0.222***	-0.208***	-0.246***
	(13.03)	(11.92)	(12.73)
<i>Delaware Incorporation</i> <sub>[t-1]</sub>	-0.217	-0.25	-0.243
	(1.08)	(1.31)	(0.95)
<i>ROA</i> <sub>[t-1]</sub>	3.196***	3.201***	3.022***
	(20.94)	(20.53)	(18.48)
<i>CAPX/Assets</i> <sub>[t-1]</sub>	0.031	0.002	-0.151
	(0.18)	(0.01)	(0.82)
<i>R&amp;D/ Sales</i> <sub>[t-1]</sub>	1.277**	1.743***	0.706
	(2.39)	(2.98)	(1.31)
<i>Industry M&amp;A Volume</i> <sub>[t-1]</sub>	-0.238***	-0.235***	-
	(3.03)	(3.19)	
# of firms in regression	3,063	3,027	2,703
$N$	31,566	30,777	30,569
Adj. $R^2$	0.712	0.717	0.760



#### APPENDIX TABLE A.7: PORTFOLIO ANALYSIS - ROBUSTNESS

Table A.7 presents the abnormal returns of portfolios of firms that have staggered up (in the long portfolio) and firms that have destaggered (in the short portfolio). Panel A presents results for the value-weighted *6m12*, *12m12*, and *12m24* portfolios, while Panel B shows results for the equally-weighted returns for portfolios *18m12*, *18m18*, and *18m24*. The long (short) portfolios are composed every month as follows. For portfolios *6m12*, *12m12*, and *12m24*, we follow the procedure described in Table 5. For portfolio *18m12*, we include all stocks of firms that have (de-)staggered their boards starting 18 months before the fiscal year-end of the year in which the firm has reported its board being (de-)staggered for the first time, and hold these stocks for 12 months. Portfolio *18m18* and *18m24* are analogously formed, except that we hold the stocks for 18 and 24 months, respectively. We use three models: the four-factor Carhart (1997) model (i.e., momentum, HML, SMB, and market return), the three-factor Fama-French model (i.e., HML, SMB, and market return), and the market model (i.e., CAPM). For each model, we present the returns to the long portfolio, short portfolio, and long minus short portfolio. T-statistics (in their absolute value) are based on robust standard errors clustered by firm and presented in parentheses below the coefficients. Statistical significance of the coefficients is indicated at the 1%, 5%, and 10% levels by \*\*\*, \*\*, and \*, respectively.

**APPENDIX TABLE A.7, PANEL A: PORTFOLIO ANALYSIS: PORTFOLIOS (6M12, 12M12, AND 12M24),  
VALUE-WEIGHTED RETURNS**

	Four-Factor Model			Three-Factor Model			Market Factor Model		
<b>Portfolio 6m12</b>									
	Long	Short	Long - Short	Long	Short	Long - Short	Long	Short	Long - Short
<i>Alpha (Monthly)</i>	0.001 (0.00)	-0.028 (0.10)	0.293 (0.66)	-0.021 (0.06)	-0.072 (0.27)	0.324 (0.73)	-0.006 (0.02)	-0.03 (0.11)	0.291 (0.63)
Average # Firms	11.9	19.1	-	11.9	19.1	-	11.9	19.1	-
<i>N</i>	355	250	231	355	250	231	355	250	231
Adj. R-Squared	0.437	0.583	0.041	0.439	0.58	0.043	0.426	0.571	0.004
<b>Portfolio "12m12"</b>									
	Long	Short	Long - Short	Long	Short	Long - Short	Long	Short	Long - Short
<i>Alpha (Monthly)</i>	0.277 (0.74)	-0.326 (1.34)	1.364** (2.57)	0.196 (0.55)	-0.364 (1.57)	1.268** (2.54)	0.26 (0.79)	-0.355 (1.50)	1.25** (2.56)
Average # Firms	12.0	19.0	-	12.0	19.0	-	12.0	19.0	-
<i>N</i>	353	256	235	353	256	235	353	256	235
Adj. R-Squared	0.381	0.621	0.055	0.38	0.622	0.056	0.371	0.61	0.002
<b>Portfolio 12m24</b>									
	Long	Short	Long - Short	Long	Short	Long - Short	Long	Short	Long - Short
<i>Alpha (Monthly)</i>	0.002 (0.01)	-0.16 (0.75)	0.139 (0.50)	-0.026 (0.14)	-0.122 (0.56)	0.054 (0.19)	0.028 (0.15)	-0.143 (0.66)	0.102 (0.35)
Average # Firms	21.5	28.6	-	21.5	28.6	-	21.5	28.6	-
<i>N</i>	438	397	391	438	397	391	438	397	391
Adj. R-Squared	0.572	0.568	0.054	0.573	0.568	0.05	0.569	0.55	0.001

**APPENDIX TABLE A.7, PANEL B: PORTFOLIO ANALYSIS: ADDITIONAL PORTFOLIOS (18M12, 18M18, AND 18M24), EQUALLY-WEIGHTED RETURNS**

	Four-Factor Model			Three-Factor Model			Market Factor Model		
<b>Portfolio 18m12</b>									
	Long	Short	Long - Short	Long	Short	Long - Short	Long	Short	Long - Short
<i>Alpha (Monthly)</i>	0.504 (1.41)	0.141 (0.5)	0.32 (0.59)	0.297 (0.87)	0.022 (0.08)	0.312 (0.62)	0.47 (1.47)	0.159 (0.56)	0.338 (0.70)
Average # Firms	12.3	18.9	-	12.3	18.9	-	12.3	18.9	-
<i>N</i>	350	250	234	350	250	234	350	250	234
Adj. R-Squared	0.45	0.567	-0.016	0.436	0.557	-0.011	0.408	0.521	-0.004
<b>Portfolio 18m18</b>									
	Long	Short	Long - Short	Long	Short	Long - Short	Long	Short	Long - Short
<i>Alpha (Monthly)</i>	0.435 (1.47)	0.093 (0.45)	0.404 (0.99)	0.29 (1.03)	-0.049 (0.24)	0.449 (1.18)	0.465* (1.77)	0.082 (0.38)	0.442 (1.25)
Average # Firms	17.1	24.1	-	17.1	24.1	-	17.1	24.1	-
<i>N</i>	399	333	321	399	333	321	399	333	321
Adj. R-Squared	0.54	0.639	-0.01	0.528	0.628	-0.008	0.476	0.582	-0.003
<b>Portfolio 18m24</b>									
	Long	Short	Long - Short	Long	Short	Long - Short	Long	Short	Long - Short
<i>Alpha (Monthly)</i>	0.295 (1.57)	0.246 (1.26)	0.142 (0.49)	0.192 (1.05)	0.12 (0.63)	0.176 (0.64)	0.447** (2.17)	0.277 (1.39)	0.244 (0.90)
Average # Firms	21.9	29.1	-	21.9	29.1	-	21.9	29.1	-
<i>N</i>	432	390	384	432	390	384	432	390	384
Adj. R-Squared	0.639	0.633	0.004	0.633	0.618	0.005	0.542	0.575	-0.002

**APPENDIX TABLE A.8: STAGGERED BOARD, THE TAKEOVER CHANNEL, AND ENTRENCHMENT**

Table A.8 presents the results of pooled panel  $Q$  regressions with firm and year fixed effects (as in Table 3) that include the following interactions: with the demeaned *Industry M&A Volume*<sub>[t-1]</sub> in column (1), with demeaned *Annual M&A Volume*<sub>[t-1]</sub> in column (2), with *Governance Index*<sub>[t-1]</sub> in column (5), and with *Poison Pill*<sub>[t-1]</sub> in column (6). Column (3) excludes all firms that were ex-post taken over, and column (4) modifies  $Q$  with a measure that is defined by using market value of equity based on the closing price before the last year in which the firm is taken over. We do not include *Annual M&A Volume*<sub>[t-1]</sub> in column (2) as the regression includes year fixed effects. We include the following control variables:  $\ln(\text{Assets})$ <sub>[t-1]</sub>, *Delaware Incorporation*<sub>[t-1]</sub>, *ROA*<sub>[t-1]</sub>, *CAPX/Assets*<sub>[t-1]</sub>, *R&D/Sales*<sub>[t-1]</sub>, and demeaned *Industry M&A Volume*<sub>[t-1]</sub>, which we do not show for brevity (unless a variable is being interacted with *Staggered Board*<sub>[t-1]</sub>). The sample period is 1978-2015. Individual interactions vary in their availability, as noted by the observation count for each estimated column. Robust standard errors are clustered at the firm level. T-statistics (in their absolute value) are based on robust standard errors and presented in parentheses below the coefficients. Statistical significance of the coefficients is indicated at the 1%, 5%, and 10% levels by \*\*\*, \*\*, and \*, respectively.

Dep. Variable: $Q_{[t]}$						
Variables	(1)	(2)	(3)	(4)	(5)	(6)
<i>Staggered Board</i> <sub>[t-1]</sub>	0.051** (2.05)	0.050** (2.01)	0.071*** (2.40)	0.051** (2.03)	0.076** (2.55)	0.064** (2.55)
<i>Industry M&amp;A Volume</i> <sub>[t-1]</sub>	-0.012 (0.09)					
* <i>Staggered Board</i> <sub>[t-1]</sub>						
<i>Industry M&amp;A Volume</i> <sub>[t-1]</sub>	-0.242** (2.30)					
<i>Annual M&amp;A Volume</i> <sub>[t-1]</sub>		-0.218 (0.55)				
* <i>Staggered Board</i> <sub>[t-1]</sub>						
<i>G-Index</i> <sub>[t-1]</sub>					-0.016** (2.50)	
<i>Poison Pill</i> <sub>[t-1]</sub>						-0.028 (1.04)
<i>G-Index</i> <sub>[t-1]</sub>					0.005 (0.90)	
* <i>Staggered Board</i> <sub>[t-1]</sub>						
<i>Poison Pill</i> <sub>[t-1]</sub>						-0.011 (0.36)
* <i>Staggered Board</i> <sub>[t-1]</sub>						
Table 3 Controls Included	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Firm, Year	Firm, Year	Firm, Year	Firm, Year	Firm, Year	Firm, Year
$N$	34,476	34,476	22,460	34,484	23,525	33,967
Adjusted R-Squared	0.713	0.713	0.719	0.703	0.711	0.714



**APPENDIX TABLE A.10: FIRM VALUE AND STAGGERED BOARDS:  
REVERSE CAUSALITY TESTS WITH RANDOM PROBIT MODELS**

Appendix Table A.10 presents regression result for the adoption (columns (1)-(3)) and removal (columns (4)-(6)) of a staggered board as a function of the valuation of the firm (as captured by  $Q_{[t-1]}$ ) plus other characteristics. The 1978-2015 sample for columns (4)-(6) ((1)-(3)) includes all firms that do (not) have a staggered board up until (and including) the year in which they remove (adopt) the staggered board if there is any such change, and are dropped from the sample afterwards. We use the random probit model and report the marginal effects using robust standard errors clustered at firm level. The regressions for all columns in both panels include the following control variables:  $Q_{[t-1]}$ ,  $Ln(Assets)_{[t-1]}$ ,  $Delaware Incorporation_{[t-1]}$ ,  $ROA_{[t-1]}$ ,  $CAPX/Assets_{[t-1]}$ ,  $R\&D/Sales_{[t-1]}$ , and  $Industry M\&A Volume_{[t-1]}$ . Statistical significance of the coefficients is indicated at the 1%, 5%, and 10% levels by \*\*\*, \*\*, and \*, respectively. T-statistics (in their absolute value) are shown in parentheses below the coefficient estimates based on robust standard errors clustered by firm. All variables are defined in Table 1.

Dep. Variable:	Random Probit Models			Random Probit Models		
	Pr (Stagger in period t)			Pr (De-stagger in period t)		
	1978-2015	1978-1995	1996-2015	1978-2015	1978-1995	1996-2015
<b>Variables</b>	(1)	(2)	(3)	(4)	(5)	(6)
$Q_{[t-1]}$	-0.004*** (2.85)	0.002 (0.53)	-6.44E-06 (0.12)	-0.001 (0.46)	6.3E-07 (0.45)	-0.005** (2.42)
$Ln(Assets)_{[t-1]}$	-0.001 (0.92)	0.002 (1.53)	-9.51E-06 (0.3)	0.008*** (13.45)	1.64E-07 (0.33)	0.011*** (12.29)
$Delaware Incorporation_{[t-1]}$	-0.001 (0.73)	0.003 (0.61)	-9.02E-05 (0.69)	0.003 (1.68)	9.04E-07 (0.41)	0.004 (1.35)
$ROA_{[t-1]}$	0.006 (0.45)	-0.017 (0.47)	-0.001 (1.16)	-0.011 (0.75)	-2.31E-06 (0.28)	0.016 (0.69)
$CAPX/Assets_{[t-1]}$	0.047** (2.46)	0.059 (1.2)	-0.001 (0.72)	-0.016 (0.73)	5.91E-06 (0.36)	0.015 (0.48)
$R\&D/Sales_{[t-1]}$	-0.05** (2.35)	-0.003 (0.05)	-0.002 (1.42)	0.028 (1.56)	-2.8E-07 (0.02)	0.04 (1.53)
$Industry M\&A Volume_{[t-1]}$	0.067*** (4.52)	0.173*** (3.73)	0.002 (1.44)	-0.077*** (3.42)	0.000011 (0.48)	-0.165*** (4.43)
<i>N</i>	15,661	7,376	8,406	18,739	5,938	12,801

**APPENDIX TABLE A.11, PANEL A: FIRST STAGE LEVEL REGRESSIONS RESULTS FOR SYSTEM GMM ESTIMATION**

Table A.11, Panel A shows the first stage level regression results for *Staggered Board*<sub>[i]</sub>. The included instruments are:  $\Delta Q_{[t-3]}$ ,  $\Delta Staggered\ Board_{[t-3]}$ ,  $\Delta ROA_{[t-3]}$ ,  $\Delta CAPX/Assets_{[t-3]}$ ,  $\Delta R\&D/Sales_{[t-3]}$ , year fixed effects, *Delaware Incorporation*<sub>[t-1]</sub>,  $\ln(Assets)_{[t-1]}$ , *Industry M&A Volume*<sub>[t-1]</sub>,  $Industry\ M\&A\ Volume^2_{[t-1]}$ ,  $S_{SB}/S_{ALL[t-1]}$ ,  $S_{CON}/S_{ALL[t-1]}$ ,  $S_{STAGGER}/S_{ALL[t-1]}$ ,  $S_{DESTAGGER}/S_{ALL[t-1]}$ ,  $(S_{SB}/S_{ALL})^2_{[t-1]}$ ,  $(S_{CON}/S_{ALL})^2_{[t-1]}$ ,  $(S_{STAGGER}/S_{ALL})^2_{[t-1]}$ , and  $(S_{DESTAGGER}/S_{ALL})^2_{[t-1]}$ . Statistical significance of the coefficients is indicated at the 1%, 5%, and 10% levels by \*\*\*, \*\*, and \*, respectively.

Model in Table 9:	(1)	(2)	(3)	(4)
$\Delta Q_{[t-3]}$	-0.006 (1.17)	-0.006 (1.13)	-0.003 (0.51)	-0.003 (0.47)
$\Delta Staggered\ Board_{[t-3]}$	0.159*** (12.62)	0.163*** (13.01)	0.251*** (17.47)	0.254*** (17.9)
$\Delta ROA_{[t-3]}$	0.019 (0.39)	0.02 (0.40)	0.006 (0.10)	0.006 (0.10)
$\Delta CAPX/Assets_{[t-3]}$	-0.048 (0.64)	-0.048 (0.64)	-0.051 (0.53)	-0.049 (0.51)
$\Delta R\&D/Sales_{[t-3]}$	0.011 (0.06)	0.011 (0.06)	-0.112 (0.49)	-0.113 (0.50)
<i>Delaware Incorporation</i> <sub>[t-1]</sub>	-0.024*** (6.06)	-0.024*** (6.08)	-0.027*** (5.36)	-0.027*** (5.39)
$\ln(Assets)_{[t-1]}$	-0.018*** (13.4)	-0.018*** (13.09)	-0.023*** (13.32)	-0.023*** (13.13)
<i>Industry M&amp;A Volume</i> <sub>[t-1]</sub>	-0.294*** (2.86)	-0.294*** (2.86)	-0.174 (1.33)	-0.174 (1.34)
<i>Industry M&amp;A Volume</i> <sup>2</sup> <sub>[t-1]</sub>	1.154*** (3.11)	1.15*** (3.10)	0.627 (1.35)	0.624 (1.34)
$S_{SB}/S_{ALL[t-1]}$	1.072*** (235.1)	1.07*** (233.16)		
$S_{CON}/S_{ALL[t-1]}$	-0.028*** (5.66)	-0.028*** (5.57)		
$S_{STAGGER}/S_{ALL[t-1]}$		-0.024 (0.71)		
$S_{DESTAGGER}/S_{ALL[t-1]}$		-0.336*** (13.10)		
$(S_{SB}/S_{ALL})^2_{[t-1]}$			0.918*** (152.68)	0.918*** (151.82)
$(S_{CON}/S_{ALL})^2_{[t-1]}$			-0.028*** (4.20)	-0.027*** (4.08)
$(S_{STAGGER}/S_{ALL})^2_{[t-1]}$				-0.075** (2.25)
$(S_{DESTAGGER}/S_{ALL})^2_{[t-1]}$				-0.471*** (9.04)

R <sup>2</sup>	0.643	0.644	0.431	0.432
----------------	-------	-------	-------	-------

**APPENDIX TABLE A.11, PANEL B: FIRST STAGE DIFFERENCED REGRESSIONS FOR SYSTEM GMM ESTIMATION**

Table A.11, Panel B shows the first stage level regression for  $\Delta Staggered Board_{[t]}$ . The included instruments are:  $Q_{[t-4]}$ ,  $Staggered Board_{[t-4]}$ ,  $ROA_{[t-4]}$ ,  $CAPX/Assets_{[t-4]}$ ,  $R\&D/Sales_{[t-4]}$  as well as  $\Delta Ln(Assets)_{[t-1]}$ ,  $\Delta Industry M\&A Volume_{[t-1]}$ ,  $\Delta Industry M\&A Volume^2_{[t-1]}$ ,  $\Delta(S_{SB}/S_{ALL})_{[t-1]}$ ,  $\Delta(S_{CON}/S_{ALL})_{[t-1]}$ ,  $\Delta(S_{STAGGER}/S_{ALL})_{[t-1]}$ ,  $\Delta(S_{DESTAGGER}/S_{ALL})_{[t-1]}$ ,  $(S_{SB}/S_{ALL})^2_{[t-1]}$ ,  $(S_{CON}/S_{ALL})^2_{[t-1]}$ ,  $(S_{STAGGER}/S_{ALL})^2_{[t-1]}$ , and  $(S_{DESTAGGER}/S_{ALL})^2_{[t-1]}$ .  $\Delta Delaware Incorporation_{[t-1]}$  is excluded due to collinearity with the intercept. Statistical significance of the coefficients is indicated at the 1%, 5%, and 10% levels by \*\*\*, \*\*, and \*, respectively.

Model in Table 8:	(1)	(2)	(3)	(4)
$Q_{[t-4]}$	0.000 (0.10)	0.000 (0.12)	-0.002* (1.72)	-0.002* (1.74)
$Staggered Board_{[t-4]}$	-0.02*** (14.86)	-0.02*** (14.86)	-0.029*** (18.14)	-0.029*** (18.16)
$ROA_{[t-4]}$	0.015 (1.13)	0.015 (1.15)	0.036** (2.38)	0.036** (2.40)
$CAPX/Assets_{[t-4]}$	0.027 (1.42)	0.027 (1.42)	0.049** (2.33)	0.049** (2.34)
$R\&D/Sales_{[t-4]}$	-0.014 (0.86)	-0.014 (0.85)	-0.023 (1.26)	-0.023 (1.25)
$\Delta Ln(Assets)_{[t-1]}$	-0.045 (1.52)	-0.045 (1.52)	-0.073 (1.21)	-0.073 (1.21)
$\Delta Industry M\&A Volume_{[t-1]}$	-0.009** (2.09)	-0.009** (2.10)	-0.005 (0.98)	-0.005 (0.99)
$\Delta Industry M\&A Volume^2_{[t-1]}$	0.000 (0.0)	-0.001 (0.02)	0.009 (0.27)	0.008 (0.25)
$\Delta(S_{SB}/S_{ALL})_{[t-1]}$	0.005 (0.06)	0.007 (0.08)	-0.012 (0.12)	-0.01 (0.10)
$\Delta(S_{CON}/S_{ALL})_{[t-1]}$	0.816*** (37.38)	0.816*** (37.36)		
$\Delta(S_{STAGGER}/S_{ALL})_{[t-1]}$	-0.002 (0.43)	-0.002 (0.44)		
$\Delta(S_{DESTAGGER}/S_{ALL})_{[t-1]}$		-0.019** (2.01)		
$\Delta(S_{SB}/S_{ALL})^2_{[t-1]}$		0.03** (2.00)		
$\Delta(S_{CON}/S_{ALL})^2_{[t-1]}$			0.597*** (24.71)	0.596*** (24.71)
$\Delta(S_{STAGGER}/S_{ALL})^2_{[t-1]}$			-0.001 (0.22)	-0.001 (0.20)
$\Delta(S_{DESTAGGER}/S_{ALL})^2_{[t-1]}$				-0.019 (1.60)
R <sup>2</sup>	0.452	0.452	0.244	0.244



**APPENDIX TABLE A.11, PANEL C: FIRST STAGE REGRESSIONS FOR SYSTEM GMM ESTIMATION**

Table A.11, Panel C presents the F-statistics, their  $p$ -values, and  $R^2$ s of OLS first-stage regressions of levels and first-differenced endogenous variables on lagged differences and lagged levels respectively. The dependent (i.e., endogenous) variables are those in Table 8, system GMM estimation:  $Staggered\ Board_{[t]}$ ,  $ROA_{[t]}$ ,  $CAPX/Assets_{[t]}$ , and  $R\&D/Sales_{[t]}$ . The results are based on a sample of 2,581 firms and 25,644 firm years in 1978-2015. To obtain the Cragg-Donald statistic, we carry out two separate two-stage least squares regressions, one each for the levels and differenced equations, respectively. For the OLS regressions of levels of dependent variables in Model (1), the independent variables are:  $\Delta Q_{[t-3]}$ ,  $\Delta Staggered\ Board_{[t-3]}$ ,  $\Delta ROA_{[t-3]}$ ,  $\Delta CAPX/Assets_{[t-3]}$ ,  $\Delta R\&D/Sales_{[t-3]}$ , as well as year fixed effects,  $Delaware\ Incorporation_{[t-1]}$ ,  $Ln(Assets)_{[t-1]}$ ,  $Industry\ M\&A\ Volume_{[t-1]}$ ,  $Industry\ M\&A\ Volume^2_{[t-1]}$ ,  $S_{SB}/S_{ALL}[t-1]$ , and  $S_{CON}/S_{ALL}[t-1]$ . For the OLS regressions of first-differences of dependent variables in Model (1), the independent variables are:  $Q_{[t-4]}$ ,  $Staggered\ Board_{[t-4]}$ ,  $ROA_{[t-4]}$ ,  $CAPX/Assets_{[t-4]}$ ,  $R\&D/Sales_{[t-4]}$  as well as  $\Delta Delaware\ Incorporation_{[t-1]}$ ,  $\Delta Ln(Assets)_{[t-1]}$ ,  $\Delta Industry\ M\&A\ Volume_{[t-1]}$ ,  $\Delta Industry\ M\&A\ Volume^2_{[t-1]}$ ,  $\Delta(S_{SB}/S_{ALL})_{[t-1]}$ , and  $\Delta(S_{CON}/S_{ALL})_{[t-1]}$ . Model (2) adds to the instruments in Model (1) level equation  $S_{STAGGER}/S_{ALL}[t-1]$  and  $S_{DESTAGGER}/S_{ALL}[t-1]$ , and it adds to the instruments in Model (1) differenced equation  $\Delta(S_{STAGGER}/S_{ALL})_{[t-1]}$  and  $\Delta(S_{DESTAGGER}/S_{ALL})_{[t-1]}$ . Model (3) uses the same set of instruments as used in Model (1), except for the substitution of  $S_{SB}/S_{ALL}[t-1]$  and of  $S_{CON}/S_{ALL}[t-1]$  with their squared values. Similarly, Model (4) uses the same set of instruments as Model (2), except for the substitution of  $S_{SB}/S_{ALL}[t-1]$ ,  $S_{CON}/S_{ALL}[t-1]$ ,  $S_{STAGGER}/S_{ALL}[t-1]$  and  $S_{DESTAGGER}/S_{ALL}[t-1]$  with their squared values. Statistical significance of the F-statistics is indicated at the 1%, 5%, and 10% levels by \*\*\*, \*\*, and \*, respectively.

Model in Table 8:	(1)		(2)		(3)		(4)	
	F-stat.	R <sup>2</sup>	F-stat.	R <sup>2</sup>	F-stat.	R <sup>2</sup>	F-stat.	R <sup>2</sup>
Sub-Panel I: Dep. Variable in levels								
<i>Staggered Board</i> <sub>[t]</sub>	5357***	0.62	4179***	0.62	2149***	0.40	1677.3***	0.40
<i>ROA</i> <sub>[t]</sub>	77.21***	0.02	60.49***	0.02	81.10***	0.02	63.5***	0.02
<i>CAPX/Assets</i> <sub>[t]</sub>	60.38***	0.02	47.31***	0.02	61.21***	0.02	48.17***	0.02
<i>R&amp;D/Sales</i> <sub>[t]</sub>	107.1***	0.03	85.70***	0.03	107.60***	0.03	85.0***	0.03
Cragg-Donald Stat.	19.42		15.12		19.56		15.22	
Sub-Panel I: Dep. Variable is in first-differences								
$\Delta Staggered\ Board$ <sub>[t]</sub>	2656***	0.45	2066.9***	0.45	1037.2***	0.24	808.7***	0.24
$\Delta ROA$ <sub>[t]</sub>	29.22***	0.01	22.99***	0.01	29.47***	0.01	23.10***	0.01
$\Delta CAPX/Assets$ <sub>[t]</sub>	35.61***	0.01	28.66***	0.01	35.74***	0.01	28.17***	0.01
$\Delta R\&D/Sales$ <sub>[t]</sub>	3.93***	.001	3.07***	.001	3.8***	.001	2.97***	.001
Cragg-Donald Stat.	2.77		2.18		2.61		2.05	

**APPENDIX TABLE A.11, PANEL D: CORRELATION OF INSTRUMENTS FOR LEVEL EQUATION FOR STAGGERED BOARD INDICATOR**

Table A.11, Panel D presents Pearson correlations for excluded instruments in level equation are shown below. Statistical significance of the correlation coefficients is indicated at the 1%, 5%, and 10% levels by \*\*\*, \*\*, and \*, respectively. The *p*-values are reported in parentheses.

<b>Variables</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
1 <i>Industry</i> <i>M&amp;AVolume</i> <sup>2</sup> <sub>[t-1]</sub>	1*** (0.00)							
2 <i>S<sub>SB</sub>/S<sub>ALL</sub></i> <sub>[t-1]</sub>	0.0111* (0.08)							
3 <i>S<sub>CON</sub>/S<sub>ALL</sub></i> <sub>[t-1]</sub>	0.0183*** (0.00)	0.0864*** (0.00)						
4 <i>S<sub>STAGGER</sub>/S<sub>ALL</sub></i> <sub>[t-1]</sub>	0.0035 (0.57)	0.0846*** (0.00)	0.0455*** (0.00)					
5 <i>S<sub>DESTAGGER</sub>/S<sub>ALL</sub></i> <sub>[t-1]</sub>	-0.0067 (0.28)	-0.0405*** (0.00)	0.0079 (0.2)	-0.0047 (0.45)				
6 ( <i>S<sub>SB</sub>/S<sub>ALL</sub></i> ) <sup>2</sup> <sub>[t-1]</sub>	0.0128** (0.04)	0.9644*** (0.00)	0.1003*** (0.00)	0.0872*** (0.00)	-0.0312*** (0.00)			
7 ( <i>S<sub>CON</sub>/S<sub>ALL</sub></i> ) <sup>2</sup> <sub>[t-1]</sub>	0.0212*** (0.00)	0.089*** (0.00)	0.9764*** (0.00)	0.0517*** (0.00)	0.0079 (0.20)	0.1106*** (0.00)		
8 ( <i>S<sub>STAGGER</sub>/S<sub>ALL</sub></i> ) <sup>2</sup> <sub>[t-1]</sub>	0.001 (0.87)	0.0752*** (0.00)	0.0412*** (0.00)	0.9476*** (0.00)	-0.0034 (0.58)	0.0847*** (0.00)	0.0481*** (0.00)	
9 ( <i>S<sub>DESTAGGER</sub>/S<sub>ALL</sub></i> ) <sup>2</sup> <sub>[t-1]</sub>	-0.006 (0.33)	-0.0272*** (0.00)	0.0096 (0.12)	-0.0035 (0.58)	0.9493*** (0.00)	-0.0207*** (0.00)	0.0115* (0.07)	-0.0025 (0.68)

**APPENDIX TABLE A.11, PANEL E: CORRELATION OF INSTRUMENTS FOR DIFFERENCED EQUATION FOR STAGGERED BOARD INDICATOR**

Table A.11, Panel E presents Pearson correlations for excluded instruments in the differenced equation are shown below. Statistical significance of the correlation coefficients is indicated at the 1%, 5%, and 10% levels by \*\*\*, \*\*, and \*, respectively. The *p*-values are reported in parentheses.

<b>Variables:</b>	1	2	3	4	5	6	7	8
1 $\Delta Industry\ M\&A\ Volume^2_{[t-1]}$	1*** (0.00)							
2 $\Delta(S_{SB}/S_{ALL})_{[t-1]}$	0.0082 (0.19)							
3 $\Delta(S_{CON}/S_{ALL})_{[t-1]}$	0.0094 (0.14)	0.0026 (0.67)						
4 $\Delta(S_{STAGGER}/S_{ALL})_{[t-1]}$	-0.0045 (0.47)	-0.0095 (0.13)	-0.0146** (0.02)					
5 $\Delta(S_{DESTAGGER}/S_{ALL})_{[t-1]}$	-0.0025 (0.69)	0.0323*** (0.00)	-0.0063 (0.31)	-0.0637*** (0.00)				
6 $\Delta(S_{SB}/S_{ALL})^2_{[t-1]}$	0.0107* (0.09)	0.9502*** (0.00)	0.0013 (0.83)	-0.0101 (0.11)	0.0286*** (0.00)			
7 $\Delta(S_{CON}/S_{ALL})^2_{[t-1]}$	0.0118* (0.06)	0.0058 (0.36)	0.9604*** (0.00)	-0.0136** (0.03)	-0.0082 (0.19)	0.0071 (0.26)		
8 $\Delta(S_{STAGGER}/S_{ALL})^2_{[t-1]}$	-0.0036 (0.56)	-0.0115* (0.07)	-0.0142** (0.02)	0.9485*** (0.00)	-0.0598*** (0.00)	-0.0113* (0.07)	-0.0135** (0.03)	
9 $\Delta(S_{DESTAGGER}/S_{ALL})^2_{[t-1]}$	-0.0013 (0.84)	0.0344*** (0.00)	-0.0067 (0.28)	-0.0686*** (0.00)	0.948*** (0.00)	0.0298*** (0.00)	-0.0081 (0.20)	-0.0681*** (0.00)

**APPENDIX TABLE A.12:** REPLICATION OF CUNAT, GINE AND GUADALUPE (2012)

Table A.12 reports our replications and extension of the results in column (3) of Table VIII in Cunat, Gine, and Guadalupe (2012), on the long-run effect on the firm's *Book-to-Market* (in columns (1) and (3)) and *Q* (in columns (2) and (4)) of a close shareholder vote to approve a shareholder-sponsored proposal related to corporate governance. For the details of the sample construction and methodology, see Cunat, Gine, and Guadalupe (2012). In columns (1) and (2), we separate all corporate governance proposals related to G-Index provisions from all other proposals as done in Cunat, Gine, and Guadalupe (2012). In columns (3) and (4), we further separate proposals to repeal a staggered board from other G-Index related proposals. All specifications include firm fixed effects. T-statistics (in their absolute value) are based on robust standard errors clustered by firm and presented in parentheses below the coefficients.

		<i>Book-to-Market</i>	<i>Tobin's Q</i>	<i>Book-to-Market</i>	<i>Tobin's Q</i>
		(1)	(2)	(3)	(4)
Year of meeting, t	G-Index	0.00274 (0.43)	-0.00126 (0.08)	-0.00529 (0.67)	0.0236 (1.18)
One year later, t+1	G-Index	-0.0323 (1.25)	-0.00484 (0.10)	-0.00953 (0.27)	-0.0572 (0.83)
Two years later, t+2	G-Index	-0.0209 (0.72)	0.0440 (0.94)	-0.0195 (0.49)	0.0509 (0.76)
Three years later, t+3	G-Index	-0.0854*** (2.78)	0.117** (2.16)	-0.0602 (1.40)	0.159** (2.20)
Four years later, t+4	G-Index	-0.0620* (1.66)	0.153** (2.00)	-0.0651 (1.29)	0.220** (2.29)
Year of meeting, t	Other	-0.00543 (0.39)	-0.0360 (1.28)	-0.00534 (0.38)	-0.0391 (1.40)
One year later, t+1	Other	-0.0397 (0.49)	0.121 (1.39)	-0.0413 (0.52)	0.136 (1.60)
Two years later, t+2	Other	-0.0533 (0.76)	0.0327 (0.33)	-0.0512 (0.72)	0.0519 (0.51)
Three years later, t+3	Other	-0.0255 (0.46)	0.0428 (0.53)	-0.0249 (0.44)	0.0657 (0.81)
Four years later, t+4	Other	0.0701 (1.08)	-0.00176 (0.02)	0.0697 (1.07)	0.0109 (0.10)
Year of meeting, t	Staggered Board			0.0171 (1.35)	-0.0420 (1.48)
One year later, t+1	Staggered Board			-0.0596 (1.13)	0.103 (0.91)
Two years later, t+2	Staggered Board			-0.0175 (0.28)	0.0876 (0.94)
Three years later, t+3	Staggered Board			-0.117** (2.08)	0.0938 (0.84)
Four years later, t+4	Staggered Board			-0.0341 (0.57)	0.0955 (0.64)
<i>N</i>		10,356	10,356	10,356	10,356
R-squared		0.706	0.824	0.707	0.825

**APPENDIX TABLE A.13, PANEL A: REPLICATION AND EXTENSION OF COHEN AND WANG (2013)**

Table A.13, Panel A shows the construction of the Cohen and Wang (2013) replication sample and the extended replication sample. Each replication sample is prepared as follows. For the main replication sample, we compile a list of all Delaware-incorporated firms with staggered boards that have no dual class stock. Of these, we keep the firms that have available meeting dates from Institutional Shareholder Services (ISS) for 2010. We then separate the included firms into control and treatment groups based on the last year's meeting date month (i.e., control group comprised of firms with last year's meeting date in January, February or March; treatment group comprised of firms with last year's meeting date in September, October, November or December). We further exclude REITs and require non-missing factor model estimates and at least two days raw returns. For the extended sample, we add to the main replication sample all observations with missing ISS meeting dates for 2010, for which the predict meeting dates is January, February, March, September, October, November or December. We predict the meeting date as the DEF14A filing date from SEC website plus 38 calendar days. This predictive approach is based on the average difference between DEF14A filing date and the meeting date of 38 days in the main replication sample. We then hand-check the observations to confirm that relevant meeting dates are in January, February, March, September, October, November or December and retain only those that fit that requirement. We further remove REITs and require non-missing four factor model estimates and at least two event days' raw returns.

<b><u>Main Replication Sample:</u></b>		<u># of firms</u>
1. <a href="http://www.SharkRepellent.net">www.SharkRepellent.net</a> file of firms with staggered board information on 1/2013		7,527
2. Keep DE-incorporated firms		4,131
3. Keep firms with staggered boards		2,106
4. Keep only non-dual class firms		1,549
5. Keep firms with meeting dates available from ISS (for 2010)		674
6. Keep firms with meeting dates in months 1,2,3 or 9,10,11, and 12		128
7. Keep non-REITS (i.e., not SIC = 6798)		128
8. Require non-missing four factor model estimates and <u>at least</u> two event days raw		<b>122</b>
Treatment:	<b>66</b>	With returns for both events: <b>120</b>
Control:	<b>56</b>	With returns for one event: <b>2</b>
		<b>Total Obs.:</b> <b>242</b>

<b><u>Additional Firms in Extended Sample:</u></b>		
9. File from step (4) but with <u>missing</u> meeting dates for 2010 from ISS		875
10. Firms with <u>predicted</u> meeting date in months 1,2,3,9,10,11,12 with missing 2010 ISS meeting dates & non-missing DEF 14A file date from <a href="http://www.sec.gov">www.sec.gov</a> .		47
10.1. Exclude obs. where hand check in (10) is unsuccessful, i.e., no proxy filing date		6
10.2. Hand-checked meeting dates for data from file in (10)		41
11. Remaining firms after removing REITS (SIC=6798)		40
12. Remaining firms with hand-collected verified meeting date where month of meeting date in (1,2,3,9,10,11,12)		33
13. Require non-missing four factor model estimates and <u>at least</u> two event days raw		<b>23</b>
Treatment:	<b>21</b>	With returns for both events: <b>22</b>
Control:	<b>2</b>	With returns for one event: <b>1</b>
		<b>Total Obs.:</b> <b>45</b>

**APPENDIX TABLE A.13, PANEL B: REPLICATION AND EXTENSION OF COHEN AND WANG (2013)**

Table A.13, Panel B shows the results of the replication of Table 1 in Cohen and Wang (2013) in a sample of 122 firms in columns (1) and (2) and in an extended sample of 145 firms in columns (3) and (4). The table reports OLS regression estimates pooling the October 8, 2010 and November 23, 2010 ruling returns of two-day risk-adjusted ruling announcement returns on a treated indicator variable (*Treated*) and an indicator variable for the second event date (*Event #2*). We pool the two events and multiply risk-adjusted returns on the second event date by -1. Risk-adjusted returns are computed in two steps. First, each firm's loadings on the Fama and French (1993) three factors and the Fama and French (1996) up-minus-down (UMD) momentum factor are estimated using the most recently available 120 trading days' data ending on or prior to June 30, 2010. Second, risk-adjusted announcement window returns are obtained by taking the residuals from a cross-sectional regression of raw announcement window returns on the estimated factor sensitivities. All specifications include industry fixed effects. We report results estimated with six-digit Global Industry Classification Standard (GICS) industry fixed effects in the first sub-panel, with Fama-French 49 industries fixed effects in the second panel, and with 4-digit SIC industries fixed effects in the third sub-panel. T-statistics (in their absolute value) are based on robust standard errors clustered by firm and presented in parentheses below the coefficients. Statistical significance of the coefficients is indicated at the 1%, 5%, and 10% levels by \*\*\*, \*\*, and \*, respectively, based on robust standard errors clustered by the industry definition noted above each sub-panel.

*GICS industries*

Variable	(1)	(2)	(3)	(4)
<i>Treated Indicator</i>	0.0036	0.0078*	0.0017	0.0062
<i>t-stat</i>	(1.09)	(1.93)	(0.52)	(1.54)
<i>Event #2 Indicator</i>	0.0003	0.0003	-0.0002	-0.0001
	(0.10)	(0.08)	(0.09)	(0.05)
<i>N</i>	242	242	285	285
Adjusted R-Squared	-0.0031	0.0433	-0.0061	0.0134

*Note: Observations are 285 (not 287) in (3)-(4) as GICS is missing for PERMNO = 62296.*

*Fama-French 49 industries*

Variable	(1)	(2)	(3)	(4)
<i>Treated Indicator</i>	0.0036	0.0035	0.0016	0.0018
<i>t-stat</i>	(1.42)	(1.18)	(0.58)	(0.62)
<i>Event #2 Indicator</i>	0.0003	0.0003	0.000	0.0001
	(0.09)	(0.10)	(0.00)	(0.02)
<i>N</i>	242	242	287	287
Adjusted R-Squared	-0.0031	0.0274	-0.0062	0.0127

*SIC 4-digit industries*

Variable	(1)	(2)	(3)	(4)
<i>Treated Indicator</i>	0.0036	0.0079	0.0016	0.0016
<i>t-stat</i>	(1.05)	(0.61)	(0.47)	(0.14)
<i>Event #2 Indicator</i>	0.0003	0.0003	0.000	0.000
	(0.09)	(0.07)	(0.00)	(0.01)
<i>N</i>	242	242	287	287
Adjusted R-Squared	-0.0031	-0.0439	-0.0062	-0.102

#### APPENDIX TABLE A.14: FURTHER REVERSE CAUSALITY TESTS

Table A.14 first presents regressions results for the adoption, in Panel A, and removal, in Panel B, of a staggered board as a function of the valuation of the firm (as captured by  $Q_{[t-1]}$ ) plus other characteristics. The 1978-2015 sample for Panel B (Panel A) includes all firms that do (not) have a staggered board up until (and including) the year in which they remove (adopt) the staggered board if there is any such change, and are dropped from the sample afterwards. All columns use the Cox proportional hazard model (see Greene, 2000) and reports the marginal likelihood (after standardizing the continuous variables to have zero mean and unit variance). All columns in both panels include but do not show for brevity the following control variables:  $Q_{[t-1]}$ ,  $\ln(\text{Assets})_{[t-1]}$ ,  $\text{Delaware Incorporation}_{[t-1]}$ ,  $\text{ROA}_{[t-1]}$ ,  $\text{CAPX/Assets}_{[t-1]}$ ,  $\text{R\&D/Sales}_{[t-1]}$  and  $\text{Industry M\&A Volume}_{[t-1]}$ . We also include individually in Columns (1)-(9) the following proxies for investment and operational complexity and proxies for stakeholder commitment:  $\text{R\&D/Sales}_{[t-1]}$ ,  $\ln(\text{Intangible Assets/ Total Assets}_{[t-1]})$ ,  $\text{Ranked Patent Citation Count}_{[t-1]}$ ,  $\text{Firm Sales}_{[t-1]}$ ,  $\text{Research Quotient}_{[t-1]}$ ,  $\text{Large Customer}_{[t-1]}$ ,  $\text{Strategic Alliance}_{[t-1]}$ ,  $\text{Labor Productivity}_{[t-1]}$ , and  $\text{Contract Specificity}_{[t-1]}$ . All variables are defined in Table 1. T-statistics (in their absolute value) are based on robust standard errors clustered by firm and presented in parentheses below the coefficients. Statistical significance of the coefficients is indicated at the 1%, 5%, and 10% levels by \*\*\*, \*\*, and \*, respectively.

**APPENDIX TABLE A.14, PANEL A: FURTHER REVERSE CAUSALITY TESTS**

Dep. Variable:	Pr (Stagger in period t)								
<i>Variables</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
$Q_{[t-1]}$	-0.844*** (7.58)	-0.856*** (7.53)	-0.605*** (5.41)	-0.804*** (7.25)	-0.576*** (4.29)	-0.733*** (6.04)	-0.544*** (3.62)	-0.516*** (3.55)	-0.599*** (3.00)
$R\&D/Sales_{[t-1]}$	-0.082 (1.16)								
$Ln(Intangible Assets/Total Assets_{[t-1]})$		0.084 (1.44)							
$Ranked Patent Citation Count_{[t-1]}$			0.024 (0.32)						
$Firm Sales_{[t-1]}$				0.765*** (6.28)					
$Research Quotient_{[t-1]}$					0.094 (1.18)				
$Large Customer_{[t-1]}$						-0.183** (2.20)			
$Strategic Alliance_{[t-1]}$							0.041 (0.42)		
$Labor Productivity_{[t-1]}$								-0.769*** (6.61)	
$Contract Specificity_{[t-1]}$									0.030 (0.28)
<i>N</i>	15,661	15,542	8,387	15,651	6,969	11,586	10,815	10,781	4,598
# of firms in regression	1,683	1,673	958	1,682	782	1,378	1,222	1,201	416
Pseudo R-Squared	0.038	0.039	0.047	0.046	0.054	0.042	0.031	0.049	0.054



**APPENDIX TABLE A.14, PANEL B: FURTHER REVERSE CAUSALITY TESTS**

<i>Variables</i>	Dep. Variable:			Pr (De-stagger in period t)					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
$Q_{[t-1]}$	-0.111 (1.37)	-0.092 (1.11)	0.157 (1.08)	-0.096 (1.19)	-0.272** (2.12)	-0.096 (1.21)	-0.110 (1.38)	-0.090 (1.10)	-0.121 (0.61)
$R\&D/Sales_{[t-1]}$	0.015 (0.23)								
$Ln(Intangible Assets/Total Assets_{[t-1]})$		-0.115 (1.39)							
$Ranked Patent Citation Count_{[t-1]}$			0.040 (0.27)						
$Firm Sales_{[t-1]}$				0.630*** (5.01)					
$Research Quotient_{[t-1]}$					0.014 (0.09)				
$Large Customer_{[t-1]}$						-0.031 (0.57)			
$Strategic Alliance_{[t-1]}$							0.091 (1.49)		
$Labor Productivity_{[t-1]}$								-0.238*** (3.31)	
$Contract Specificity_{[t-1]}$									-0.027 (0.21)
<i>N</i>	14,587	14,490	7,023	14,577	5,867	13,185	12,804	12,764	4,532
# of firms in regression	1,513	1,496	777	1,513	678	1,447	1,421	1,397	379
Pseudo R-Squared	0.037	0.039	0.046	0.043	0.063	0.036	0.037	0.038	0.042

**TABLE A.14, PANEL C: FURTHER REVERSE CAUSALITY TESTS**

Table A.14, Panel C presents regression results for the adoption (columns (1)-(3)) and removal (columns (4)-(6)) of a staggered board as a function of the valuation of the firm (as captured by  $Q_{[t-1]}$ ) plus other characteristics. The 1978-2015 sample for columns (4)-(6) ((1)-(3)) includes all firms that do (not) have a staggered board up until (and including) the year in which they remove (adopt) the staggered board if there is any such change, and are dropped from the sample afterwards. We use the Cox proportional hazard model (see Greene, 2000) and report the marginal effects using robust standard errors clustered at firm level (after standardizing the continuous variables to have zero mean and unit variance). The model includes the following control variables:  $Q_{[t-1]}$ ,  $\ln(\text{Assets})_{[t-1]}$ ,  $\text{Delaware Incorporation}_{[t-1]}$ ,  $\text{ROA}_{[t-1]}$ ,  $\text{CAPX/Assets}_{[t-1]}$ ,  $\text{R\&D/Sales}_{[t-1]}$ ,  $\text{Industry M\&A Volume}_{[t-1]}$ ,  $\text{Institutional Holding Duration}_{[t-1]}$ , and  $\text{Percent Transient Institutions}_{[t-1]}$ . T-statistics (in their absolute value) are based on robust standard errors clustered by firm and presented in parentheses below the coefficients. Statistical significance of the coefficients is indicated at the 1%, 5%, and 10% levels by \*\*\*, \*\*, and \*, respectively. All variables are defined in Table 1.

Dep. Variable:	Cox Models			Cox Models		
	Pr (Stagger in period t)			Pr (De-stagger in period t)		
<i>Variables</i>	(1)	(2)	(3)	(4)	(5)	(6)
$Q_{[t-1]}$	-0.826*** (7.14)	-0.823*** (7.18)	-0.832*** (7.14)	-0.082 (0.94)	-0.078 (0.92)	-0.079 (0.91)
$\ln(\text{Assets})_{[t-1]}$	0.221*** (3.48)	0.227*** (3.35)	0.258*** (3.88)	0.775*** (9.88)	0.745*** (9.58)	0.776*** (9.88)
<i>Delaware Incorporation</i> <sub>[t-1]</sub>	-0.231* (1.93)	-0.185 (1.54)	-0.206* (1.71)	-0.026 (0.20)	0.022 (0.17)	0.016 (0.12)
$\text{ROA}_{[t-1]}$	0.415*** (4.99)	0.407*** (4.90)	0.446*** (5.19)	0.075 (0.85)	0.071 (0.79)	0.078 (0.87)
$\text{CAPX/Assets}_{[t-1]}$	0.112** (2.23)	0.116** (2.35)	0.100** (1.99)	0.086 (1.66)	0.08 (1.55)	0.08 (1.54)
$\text{R\&D/Sales}_{[t-1]}$	-0.021 (0.27)	-0.075 (0.96)	-0.021 (0.27)	0.021 (0.31)	0.017 (0.24)	0.008 (0.11)
<i>Industry M&amp;A Volume</i> <sub>[t-1]</sub>	0.032 (0.47)	0.022 (0.32)	0.042 (0.62)	0.009 (0.09)	0.014 (0.15)	0.009 (0.10)
<i>Institutional Holding Duration</i> <sub>[t-1]</sub>	-0.191*** (3.35)		-0.294*** (4.49)	0.083 (0.98)		0.203* (1.96)
<i>Percent Transient Institutions</i> <sub>[t-1]</sub>		-0.041 (0.69)	-0.198*** (2.89)		0.098 (1.00)	0.198 (1.67)
# of firms in regression	1,495	1,462	1,460	1,415	1,395	1,394
<i>N</i>	12,048	11,472	11,432	12,616	12,315	12,287
Pseudo R-Squared	0.045	0.043	0.049	0.038	0.037	0.04

**TABLE A.14, PANEL D: FURTHER REVERSE CAUSALITY TESTS**

Table A.14, Panel D presents regression results for *Institutional Holding Duration*<sub>[t]</sub> and *Percent Transient Institutions*<sub>[t]</sub>. The model includes the following control variables: *Staggered Board*<sub>[t-1]</sub>, *Percent Institutional Investors*<sub>[t-1]</sub>, *Ln (Assets)*<sub>[t-1]</sub>, *Delaware Incorporation*<sub>[t-1]</sub>, *ROA*<sub>[t-1]</sub>, *CAPX/Assets*<sub>[t-1]</sub>, *R&D/Sales*<sub>[t-1]</sub>, *Industry M&A Volume*<sub>[t-1]</sub>, *Institutional Holding Duration*<sub>[t-1]</sub>, and *Percent Transient Institutions*<sub>[t-1]</sub>. T-statistics (in their absolute value) are based on robust standard errors clustered by firm and presented in parentheses below the coefficients. Statistical significance of the coefficients is indicated at the 1%, 5%, and 10% levels by \*\*\*, \*\*, and \*, respectively. All variables are defined in Table 1.

	<i>Institutional Holding Duration</i> <sub>[t]</sub>	<i>Percent Transient Institutions</i> <sub>[t]</sub>
	(1)	(2)
<i>Staggered Board</i> <sub>[t-1]</sub>	0.014 (0.43)	0.004 (0.99)
<i>Percent Shares Owned by Institutional Investors</i> <sub>[t-1]</sub>	-0.010*** (11.56)	0.001*** (5.99)
<i>Ln (Assets)</i> <sub>[t-1]</sub>	0.164*** (7.16)	-0.021*** (8.69)
<i>Delaware Incorporation</i> <sub>[t-1]</sub>	0.205 (1.17)	-0.054** (2.37)
<i>ROA</i> <sub>[t-1]</sub>	-0.493*** (4.01)	0.114*** (7.10)
<i>CAPX/Assets</i> <sub>[t-1]</sub>	0.108 (0.49)	-0.029 (1.03)
<i>R&amp;D/Sales</i> <sub>[t-1]</sub>	0.083 (0.81)	0.011 (0.56)
<i>Industry M&amp;A Volume</i> <sub>[t-1]</sub>	0.034 (0.54)	-0.017* (1.83)
N	30,838	31,899
Adj. R-Squared	0.676	0.624

**APPENDIX TABLE A.15, PANEL A: FIRM VALUE AND STAGGERED BOARDS**  
 INTERACTIONS WITH INVESTMENTS AND OPERATIONAL COMPLEXITY FOR FIRMS INCORPORATED IN  
 MASSACHUSETTS

Appendix Table A.15, Panel A, presents the results of a time series analysis including interactions with variables that capture investments and operational complexity. We include the following standard control variables:  $\ln(\text{Assets})_{[t-1]}$ ,  $\text{ROA}_{[t-1]}$ ,  $\text{CAPX}/\text{Assets}_{[t-1]}$ , and  $\text{R\&D}/\text{Sales}_{[t-1]}$ , and  $\text{Industry M\&A Volume}_{[t-1]}$  which we do not show for brevity. The interacted variables include the following:  $\text{R\&D}/\text{Sales}_{[t-1]}$ ,  $\text{Intangible Assets}/\text{Total Assets}_{[t-1]}$ ,  $\text{Ranked Patent Citation Count}_{[t-1]}$ ,  $\text{Firm Size}_{[t-1]}$ , and  $\text{Research Quotient}_{[t-1]}$ . Individual interactions vary in their availability, as noted by the observation count for each estimated column. All continuous variables in the interaction terms are demeaned prior to calculating their interactions with  $\text{Massachusetts After}_{[t]}$ . Estimation is using pooled panel *Tobin's Q*<sub>[t]</sub> regressions. We include year and firm fixed effects. All interaction and control variables are defined in Table 1. T-statistics (in their absolute value) are based on robust standard errors clustered by firm and presented in parentheses below the coefficients. Statistical significance of the coefficients is indicated at the 1%, 5%, and 10% levels by \*\*\*, \*\*, and \*, respectively.

Dep. Variable: $Q_{[t]}$					
<i>Variables</i>	(1)	(2)	(3)	(4)	(5)
<i>After</i> <sub>[t]</sub>	-0.092 (0.53)	-0.109 (0.64)	-0.008 (0.05)	-0.102 (0.62)	-0.2 (0.92)
<i>MA Incorporated</i> x <i>Post 1990</i>	0.153* (1.96)	0.179** (2.04)	0.145* (1.85)	0.159** (2.19)	0.208 (1.77)
<i>R&amp;D/Sales</i> <sub>[t-1]</sub>	0.547 (0.25)	2.012 (1.02)	2.228 (1.27)	2.014 (1.02)	1.326 (0.52)
$\ln(\text{Intangible Assets}/\text{Total Assets})_{[t-1]}$		-0.127 (0.56)			
<i>Ranked Patent Citation Count</i> <sub>[t-1]</sub>			-4.331** (2.18)		
<i>Firm Sales</i> <sub>[t-1]</sub>				0.003 (0.02)	
<i>Research Quotient</i> <sub>[t-1]</sub>					0.109 (0.07)
<i>R&amp;D/Sales</i> <sub>[t-1]</sub> *	1.289* (1.89)				
$\ln(\text{Intangible Assets}/\text{Total Assets})_{[t-1]}$ *		0.06 (0.76)			
<i>Ranked Patent Citation Count</i> <sub>[t-1]</sub> *			2.632* (1.74)		
<i>Firm Sales</i> <sub>[t-1]</sub> *				-0.030 (0.71)	
<i>Research Quotient</i> <sub>[t-1]</sub> *					0.597 (0.26)
<i>MA Incorporated</i> x <i>Post 1990</i>					
Standard Controls Included	Yes	Yes	Yes	Yes	Yes
# of firms in regression	121	121	121	121	68
<i>N</i>	452	452	452	452	232
Adjusted R-squared	0.852	0.847	0.852	0.847	0.859

**APPENDIX TABLE A.15, PANEL B: FIRM VALUE AND STAGGERED BOARDS**  
 INTERACTIONS WITH STAKEHOLDER COMMITMENT PROXIES FOR FIRMS INCORPORATED IN  
 MASSACHUSETTS

Appendix Table A.15, Panel B, presents the results of pooled panel  $Q$  regressions with firm and year fixed effects that includes interactions with variables that proxy for stakeholder commitment. We always include the following control variables:  $\ln(\text{Assets})_{[t-1]}$ ,  $\text{Delaware Incorporation}_{[t-1]}$ ,  $\text{ROA}_{[t-1]}$ ,  $\text{CAPX}/\text{Assets}_{[t-1]}$ ,  $\text{R\&D}/\text{Sales}_{[t-1]}$ , and  $\text{Industry M\&A Volume}_{[t-1]}$ , which we do not show for brevity (unless a variable is being interacted with  $\text{Staggered Board}_{[t-1]}$ ). The interacted variables include the following:  $\text{Large Customer}_{[t-1]}$ ,  $\text{Strategic Alliance}_{[t-1]}$ ,  $\text{Labor Productivity}_{[t-1]}$ , and  $\text{Contract Specificity}_{[t-1]}$ . All variables are defined in Table 1. T-statistics (in their absolute value) are based on robust standard errors clustered by firm and presented in parentheses below the coefficients. Statistical significance of the coefficients is indicated at the 1%, 5%, and 10% levels by \*\*\*, \*\*, and \*, respectively.

Dep. Variable: $Q_{[t]}$				
<i>Variables</i>	(1)	(2)	(3)	(4)
<i>After</i> <sub>[t]</sub>	-0.085 (0.51)	-0.086 (0.51)	0.163 (0.71)	-0.084 (0.31)
<i>MA Incorporated</i> x <i>Post 1990</i>	0.182** (2.18)	0.154** (1.97)	0.105 (1.32)	0.051 (0.49)
<i>Large Customer</i> <sub>[t-1]</sub>	-0.171** (2.16)			
<i>Strategic Alliance</i> <sub>[t-1]</sub>		-0.032*** (3.31)		
<i>Labor Productivity</i> <sub>[t-1]</sub>			1.932 (1.10)	
<i>Large Customer</i> <sub>[t-1]</sub> *	-0.062 (0.72)			
<i>MA Incorporated</i> x <i>Post 1990</i>				
<i>Strategic Alliance</i> <sub>[t-1]</sub> *		0.027** (2.43)		
<i>MA Incorporated</i> x <i>Post 1990</i>				
<i>Labor Productivity</i> <sub>[t-1]</sub> *			0.820 (1.13)	
<i>MA Incorporated</i> x <i>Post 1990</i>				
<i>Contract Specificity</i> <sub>[t-1]</sub> *				0.847 (0.93)
<i>MA Incorporated</i> x <i>Post 1990</i>				
Standard Controls Included	Yes	Yes	Yes	Yes
# of firms in regression	121	121	74	41
<i>N</i>	452	452	209	111
Adjusted R-Squared	0.848	0.849	0.918	0.845

**APPENDIX TABLE A.15, PANEL C: SAMPLE DESCRIPTION FOR MASSACHUSETTS INCORPORATED FIRMS**

Appendix Table A.15, Panel C, describes how we construct the basic, unbalanced sample as well as the restricted, balanced sample of treated and control firms.

	<u>Number of firms</u>
1. Firms incorporated in Massachusetts as of 1988 and 1989 and with:	
Unitary board	106
Staggered Board	63
	Total: <b>169</b>
2. Firms with $Q$ data from CRSP/Compustat in 5/31/88 - 5/15/90 and with:	
Unitary board	89
Staggered Board	40
	Total: <b>129</b>
<b>For the basic, unbalanced sample:</b>	
With control firms selected based on match of $Q$ , assets, and unitary board	70
3. in 5/31/88 - 5/15/90	35
With control firms selected based on match of $Q$ , assets, and staggered board in 5/31/88 - 5/15/90	
	Total: <b>105</b>
4. With unitary board and non-missing control variables	62
With staggered board and non-missing control variables	28
	Total: <b>90</b>
5. With unitary board and at least five annual observations in t-2 to t+2	55
With staggered board and at least five annual observations in t-2 to t+2	24
	Total: <b>79</b>
<b>For the restricted, balanced sample:</b>	
With control firms selected based on more restrictive match of $Q$ , assets, and unitary board in 5/31/88 - 5/15/90	55
3. With control firms selected based on more restrictive match of $Q$ , assets, and staggered board in 5/31/88 - 5/15/90	33
	Total: <b>88</b>
4. With unitary board and non-missing control variables	48
With staggered board and non-missing control variables	28
	Total: <b>76</b>
5. With unitary board and at least five annual observations in t-2 to t+2	44
With staggered board and at least five annual observations in t-2 to t+2	24
	Total: <b>68</b>

**APPENDIX TABLE A.15, PANEL D: DESCRIPTIVE STATISTICS FOR MAIN DEPENDENT AND INDEPENDENT VARIABLES - MASSACHUSETTS INCORPORATED FIRMS**

Appendix Table A.15, Panel D, presents sample descriptive statistics for the main dependent and independent variables, as well as the interacted variables, for the restricted balanced sample. Results for the basic, unbalanced sample are very similar. All continuous variables are winsorized at 1% in both tails.

<b>Dependent Variables:</b>	<b>Mean</b>	<b>Median</b>	<b>St. Dev.</b>	<b>Min</b>	<b>Max</b>	<b>Obs.</b>
<i>Q<sub>[t]</sub></i>	1.39	1.15	0.76	0.58	4.71	452
<b>Independent Variables:</b>	<b>Mean</b>	<b>Median</b>	<b>St. Dev.</b>	<b>Min</b>	<b>Max</b>	<b>Obs.</b>
<i>CAPX/ Assets<sub>[t]</sub></i>	0.06	0.05	0.04	0.00	0.20	452
<i>Ln (Assets)<sub>[t]</sub></i>	5.39	5.53	1.52	2.38	9.33	452
<i>Industry M&amp;A Volume<sub>[t]</sub></i>	0.03	0.01	0.05	0.00	0.31	452
<i>R&amp;D/ Sales<sub>[t]</sub></i>	0.04	0.01	0.06	0.00	0.29	452
<i>ROA<sub>[t]</sub></i>	0.13	0.13	0.08	-0.15	0.36	452
<i>Staggered Board<sub>[t]</sub></i>	0.67	1.00	0.47	0.00	1.00	452
<b>Interacted Variables:</b>	<b>Mean</b>	<b>Median</b>	<b>St. Dev.</b>	<b>Min</b>	<b>Max</b>	<b>Obs.</b>
<i>Ln(Intangible Assets/ Total Assets<sub>[t]</sub>)</i>	-0.46	-0.32	0.44	-2.07	-0.03	452
<i>Ranked Patent Citation Count<sub>[t]</sub></i>	0.07	0.06	0.04	0.00	0.14	452
<i>Firm Sales<sub>[t]</sub></i>	5.55	5.77	1.52	2.14	9.54	452
<i>Contract Specificity<sub>[t]</sub></i>	0.95	0.98	0.09	0.59	1.00	111
<i>Labor Productivity<sub>[t]</sub></i>	1.06	1.08	0.10	0.65	1.13	209
<i>Large Customer 10%<sub>[t]</sub></i>	0.11	0.00	0.31	0.00	1.00	452
<i>Strategic Alliance<sub>[t]</sub></i>	0.64	0.00	0.32	0.00	1.00	452
<i>Research Quotient<sub>[t]</sub></i>	0.11	0.12	0.07	-0.08	0.23	232

**APPENDIX TABLE A.15, PANEL E: DESCRIPTIVE STATISTICS FOR MAIN DEPENDENT AND INDEPENDENT VARIABLES - MASSACHUSETTS INCORPORATED FIRMS**

Appendix Table A.15, Panel E, reports mean difference test of firm characteristics for firms incorporated in Massachusetts and control firms in 1988 and 1989, for both the basic, unbalanced sample and the restricted, balanced sample. Control firms are a subsample of the non-Massachusetts incorporated firms in our main database for Table 2 selected as the closest match based on  $Q$ , logarithm of asset size, and board structure (staggered or unitary board) as of 1988 and 1989. See Table 1 for variable definitions. Statistical significance of the difference is indicated at the 1%, 5%, and 10% levels by \*\*\*, \*\*, and \*, respectively.

**Basic, unbalanced sample**

<u>1988</u>			
Variable	Difference	T-stat	P-value
$Q_{[t]}$	0.23	1.79	0.08*
$Ln(Assets)_{[t]}$	0.32	0.89	0.38
$ROA_{[t]}$	0.01	0.80	0.43
$CAPX/Assets_{[t]}$	0.01	2.19	0.03**
$R\&D/Sales_{[t]}$	0.02	3.54	0.00***
<u>1989</u>			
Variable	Difference	T-stat	P-value
$Q_{[t]}$	0.21	1.69	0.09*
$Ln(Assets)_{[t]}$	0.45	1.32	0.19
$ROA_{[t]}$	0.02	1.37	0.17
$CAPX/Assets_{[t]}$	0.01	1.76	0.08*
$R\&D/Sales_{[t]}$	0.02	4.13	0.00***

**Restricted, balanced sample**

<u>1988</u>			
Variable	Difference	T-stat	P-value
$Q_{[t]}$	0.10	0.75	0.46
$Ln(Assets)_{[t]}$	0.36	0.75	0.46
$ROA_{[t]}$	0.00	0.17	0.87
$CAPX/Assets_{[t]}$	0.01	1.88	0.06***
$R\&D/Sales_{[t]}$	0.02	3.22	0.00***
<u>1989</u>			
Variable	Difference	T-stat	P-value
$Q_{[t]}$	0.07	0.57	0.57
$Ln(Assets)_{[t]}$	0.42	0.90	0.37
$ROA_{[t]}$	0.01	0.48	0.63
$CAPX/Assets_{[t]}$	0.01	1.38	0.17
$R\&D/Sales_{[t]}$	0.02	3.33	0.00***