

ONLINE APPENDIX TABLES TO CREMERS, LITOV, AND SEPE (2014)

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

Table A.1 shows Pearson pairwise correlations for key dependent and independent variables in the analysis. The p-value for the correlation coefficient is shown below, in parentheses.

	<i>Q</i>	<i>Staggered Board</i>	<i>Staggered Board-Charter</i>	<i>Staggered Board-Bylaws</i>	<i>Ln (Assets)</i>	<i>Delaware Incorporation</i>	<i>ROA</i>	<i>CAPX/Assets</i>	<i>R&D/Sales</i>
<i>Staggered Board</i>	0.023	1.000							
p-value	(0.00)								
<i>Staggered Board-Charter</i>	0.037	0.864	1.000						
p-value	(0.00)	(0.00)							
<i>Staggered Board-Bylaws</i>	-0.032	0.274	-0.241	1.000					
p-value	(0.00)	(0.00)	(0.00)						
<i>Ln (Assets)</i>	-0.063	-0.032	-0.009	-0.034	1.000				
p-value	(0.00)	(0.00)	(0.12)	(0.00)					
<i>Delaware Incorporation</i>	0.090	0.006	0.029	-0.067	0.042	1.000			
p-value	(0.00)	(0.26)	(0.00)	(0.00)	(0.00)				
<i>ROA</i>	0.411	-0.022	-0.027	0.034	-0.042	-0.033	1.000		
p-value	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)			
<i>CAPX/Assets</i>	0.003	-0.047	-0.051	0.032	-0.040	-0.026	0.347	1.000	
p-value	(0.66)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)		
<i>R&D/Sales</i>	0.329	-0.025	-0.007	-0.052	-0.114	0.135	-0.148	-0.137	1.000
p-value	(0.00)	(0.00)	(0.21)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	
<i>Industry M&A</i>	0.009	0.045	0.050	-0.007	0.020	0.020	-0.058	-0.046	0.029
p-value	(0.11)	(0.00)	(0.00)	(0.21)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)

APPENDIX TABLE A.2: FIRM VALUE AND STAGGERED BOARDS

Table A.2 shows a replication of Bebchuk and Cohen (2005) with two different sets of control variables, where the dependent variable is $Q_{[t]}$. Columns (1) and (3) include the following control variables: *Staggered Board*_[t-1], *G-Index*_[t-1], $\ln(\text{Assets})_{[t-1]}$, $\ln(\text{Firm Age})_{[t-1]}$, *Delaware Incorporation*_[t-1], *ROA*_[t-1], *CAPX/Assets*_[t-1], *R&D/Sales*_[t-1], and *Industry M&A Volume*_[t-1]. Columns (2) and (4) include the following control variables: *Staggered Board*_[t-1], *G-Index*_[t-1], $\ln(\text{Assets})_{[t-1]}$, $\ln(\text{Firm Age})_{[t-1]}$, *Delaware Incorporation*_[t-1], *Insider Ownership*_[t-1], *Insider Ownership*²_[t-1], *ROA*_[t-1], *CAPX/Assets*_[t-1], *R&D/Sales*_[t-1] and *Industry M&A Volume*_[t-1]. The analysis includes 1978-2011 data. Estimation is using pooled panel *Tobin's Q*_[t] regressions where year and industry fixed effects are included in Columns (1) and (2). Columns (3) and (4) include instead year and firm fixed effects. All control variables are defined in Table 1. Statistical significance of the coefficients is indicated at the 1%, 5%, and 10% levels by ***, **, and *, respectively, in two tailed tests, based on robust standard errors clustered by firm.

APPENDIX TABLE A.2: FIRM VALUE AND STAGGERED BOARDS (CONTINUED)

	(1)	(2)	(3)	(4)
	$Q_{[i]}$	$Q_{[i]}$	$Q_{[i]}$	$Q_{[i]}$
<i>Staggered Board</i> _[i-1]	-0.059*** (2.66)	-0.042* (1.68)	0.080** (2.42)	0.113** (2.47)
<i>G-Index</i> _[i-1]	-0.008* (1.93)	-0.007 (1.43)	-0.015** (2.40)	-0.015* (1.86)
<i>Ln (Assets)</i> _[i-1]	-0.009 (0.92)	-0.006 (0.57)	-0.159*** (7.49)	-0.226*** (8.56)
<i>Ln (Firm Age)</i> _[i-1]	-0.020 (1.48)	-0.024 (0.97)	-0.053 (1.29)	-0.001 (0.01)
<i>Delaware Incorporation</i> _[i-1]	-0.012 (0.50)	-0.021 (0.78)		
<i>Insider Ownership</i> _[i-1]		0.182 (0.78)		0.167 (0.68)
<i>Insider Ownership</i> ² _[i-1]		-0.235 (0.75)		-0.345 (1.11)
<i>ROA</i> _[i-1]	5.306*** (24.56)	5.744*** (23.86)	3.542*** (19.3)	3.531*** (17.42)
<i>CAPX/Assets</i> _[i-1]	-0.628** (2.09)	-0.724* (1.91)	0.160 (0.74)	0.184 (0.65)
<i>R&D/ Sales</i> _[i-1]	4.331*** (8.09)	4.218*** (7.30)	1.782** (2.57)	0.553 (0.68)
<i>Industry M&A Volume</i> _[i-1]	-0.221** (2.40)	-0.214** (2.03)	-0.289*** (3.40)	-0.266*** (2.68)
N	19,743	14,376	19,743	14,376
Adjusted R-Squared	0.57	0.58	0.71	0.72
Year Fixed Effect	Yes	Yes	Yes	Yes
Industry Fixed Effect	<u>Yes</u>	<u>Yes</u>	No	No
Firm Fixed Effect	No	No	<u>Yes</u>	<u>Yes</u>

APPENDIX TABLE A.3. FIRM VALUE AND STAGGERED BOARDS – FIRST DIFFERENCE REGRESSIONS.

Table A.3, Panel A presents pooled panel first difference regressions with the dependent variable being the change in Q from t to t+1 in Column (1) (i.e., $\Delta Q_{[t, t+1]}$), the change in Q from t to t+2 in Column (2) (i.e., $\Delta Q_{[t, t+2]}$), the change in Q from t to t+3 in Column (3) (i.e., $\Delta Q_{[t, t+3]}$), the change in Q from t to t+4 in Column (4) (i.e., $\Delta Q_{[t, t+4]}$), and the change in Q from t to t+5 in Column (5) (i.e., $\Delta Q_{[t, t+5]}$). This excludes the transition year, as the change in staggered board structure equals one if that change occurs between year t-1 and year t. Table A.3, Panel B presents pooled panel first difference regressions with the dependent variable being the change in Q from t-1 to t in Column (1) (i.e., $\Delta Q_{[t-1, t]}$), the change in Q from t-1 to t+1 in Column (2) (i.e., $\Delta Q_{[t-1, t+1]}$), the change in Q from t-1 to t+2 in Column (3) (i.e., $\Delta Q_{[t-1, t+2]}$), the change in Q from t-1 to t+3 in Column (4) (i.e., $\Delta Q_{[t-1, t+3]}$), and the change in Q from t-1 to t+4 in Column (5) (i.e., $\Delta Q_{[t-1, t+4]}$). Table A.3, Panel C presents pooled panel first difference regressions with the dependent variable being the same as that in Panel B where we extend the last observation in the panel per each firm for up to additional five years to account for the possible delisting bias (firms with last available observation in 2007-2010 are extended only till 2011). Dependent variables in all panels are adjusted for the annual average of the corresponding variable in the cross-section. As independent variables, we include the following. In Panel A we include: $\Delta Staggered\ Board_{[t-1, t]}$, $\Delta Ln(Assets)_{[t-1, t]}$, $\Delta ROA_{[t-1, t]}$, $\Delta CAPX/Assets_{[t-1, t]}$, $\Delta R\&D/Sales_{[t-1, t]}$, and $\Delta Industry\ M\&A\ Volume_{[t-1, t]}$. In Panels B and C we include: $\Delta Staggered\ Board_{[t-1]}$, $\Delta G-Index_{[t-1]}$, $\Delta Ln(Assets)_{[t-1]}$, $\Delta Ln(Firm\ Age)_{[t-1]}$, $\Delta Insider\ Ownership_{[t-1]}$, $\Delta Insider\ Ownership^2_{[t-1]}$, $\Delta ROA_{[t-1]}$, $\Delta CAPX/Assets_{[t-1]}$, $\Delta R\&D/Sales_{[t-1]}$, and $\Delta Delaware\ Incorporation_{[t-1, t]}$. The change in the indicator variable, $\Delta Delaware\ Incorporation_{[t-1, t]}$, is not included due to limited variation. Sample period is 1978-2011, but varies per column due to availability of lagged data and is reported for each column. Regressions include but do not show industry fixed effects as per the Fama-French 49 industry definitions. Standard errors are clustered at the firm level.¹ T-statistics (in their absolute value) of the regression coefficients are shown in parentheses below the coefficient estimates. All control variables are defined in Table 1. Our sample for Columns (1) in Panel A includes 223 cases of staggering up and 166 cases of staggering down. Statistical significance of the coefficients is indicated at the 1%, 5%, and 10% levels by ***, **, and *, respectively, in two tailed tests.

¹ Results are robust to an adjustment to the standard errors for autocorrelation as in Newey-West (where the adjustment includes up to sixth lags).

APPENDIX TABLE A.3: PANEL A. FIRM VALUE AND STAGGERED BOARDS— FIRST DIFFERENCE REGRESSIONS.
 FUTURE CHANGES IN Q VS. PAST CHANGES IN CONTROL VARIABLES (EXCLUDING TRANSITION YEAR)

Dep. Variable:	$\Delta Q_{[t, t+1]}$	$\Delta Q_{[t, t+2]}$	$\Delta Q_{[t, t+3]}$	$\Delta Q_{[t, t+4]}$	$\Delta Q_{[t, t+5]}$
Variables	(1)	(2)	(3)	(4)	(5)
$\Delta Staggered\ Board_{[t-1, t]}$	0.020 (1.42)	0.037* (1.71)	0.072*** (2.74)	0.046 (1.58)	0.072** (2.08)
$\Delta Assets_{[t-1, t]}$	-0.240*** (14.64)	-0.434*** (17.30)	-0.482*** (15.46)	-0.505*** (15.02)	-0.536*** (13.80)
$\Delta ROA_{[t-1, t]}$	-0.355*** (5.07)	-0.813*** (9.22)	-1.061*** (10.23)	-1.262*** (11.17)	-1.331*** (10.53)
$\Delta CAPX/Assets_{[t-1, t]}$	-0.787*** (7.19)	-0.806*** (5.59)	-1.002*** (6.39)	-0.932*** (5.98)	-0.948*** (5.24)
$\Delta R\&D/ Sales_{[t-1, t]}$	0.499 (1.56)	0.324 (0.76)	0.286 (0.61)	-0.022 (0.05)	-0.234 (0.39)
$\Delta Industry\ M\&A\ Volume_{[t-1, t]}$	-0.089** (2.10)	-0.118** (2.54)	-0.192*** (3.75)	-0.127** (2.13)	-0.19*** (3.15)
N	28,111	25,975	23,955	22,044	20,268
Adjusted R-Squared	0.02	0.03	0.03	0.03	0.04

APPENDIX TABLE A.3: PANEL B. FUTURE CHANGES IN Q vs. PAST CHANGES IN CONTROL VARIABLES (INCLUDING TRANSITION YEAR) – EXTENDED SET OF CONTROL VARIABLES

<i>Dep. Variable:</i>	$\Delta Q_{[t-1,t]}$	$\Delta Q_{[t-1,t]}$	$\Delta Q_{[t-1,t+1]}$	$\Delta Q_{[t-1,t+1]}$	$\Delta Q_{[t-1,t+2]}$	$\Delta Q_{[t-1,t+2]}$	$\Delta Q_{[t-1,t+3]}$	$\Delta Q_{[t-1,t+3]}$	$\Delta Q_{[t-1,t+4]}$	$\Delta Q_{[t-1,t+4]}$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Δ <i>Staggered Board</i> _[t-1,t]	0.032** (2.17)	0.024 (1.03)	0.052** (2.29)	0.049 (1.56)	0.068** (2.27)	0.104** (2.21)	0.101*** (3.16)	0.147*** (2.94)	0.094** (2.56)	0.114* (1.89)
Δ <i>G-Index</i> _[t-1,t]	-0.002 (0.49)	-0.005 (1.02)	0.000 (0.06)	-0.004 (0.58)	0.002 (0.42)	-0.001 (0.10)	0.010 (1.65)	0.005 (0.56)	0.009 (1.38)	-0.002 (0.23)
Δ <i>Ln (Assets)</i> _[t-1,t]	-0.249*** (10.57)	-0.299*** (10.34)	-0.490*** (15.57)	-0.548*** (15.16)	-0.642*** (16.34)	-0.740*** (16.24)	-0.692*** (15.91)	-0.793*** (15.65)	-0.689*** (14.48)	-0.774*** (13.93)
Δ <i>Ln (Firm Age)</i> _[t-1,t]	0.061 (1.26)	0.075 (0.79)	0.055 (0.66)	0.001 (0.01)	0.119 (1.04)	0.116 (0.57)	0.173 (1.22)	0.184 (0.74)	0.241 (1.45)	0.297 (1.03)
Δ <i>Insider Ownership</i> _[t-1,t]		-0.264 (1.64)		-0.256 (1.41)		-0.058 (0.26)		0.060 (0.25)		0.005 (0.02)
Δ <i>Insider Ownership</i> ² _[t-1,t]		0.150 (0.96)		0.250 (1.29)		-0.005 (0.02)		-0.048 (0.19)		-0.006 (0.02)
Δ <i>ROA</i> _[t-1,t]	2.210*** (18.37)	2.375*** (15.30)	2.094*** (15.46)	2.274*** (12.84)	1.731*** (12.42)	1.767*** (9.91)	1.324*** (9.12)	1.281*** (6.86)	1.390*** (9.37)	1.281*** (6.41)
Δ <i>CAPX/Assets</i> _[t-1,t]	-0.225 (1.58)	-0.294 (1.61)	-0.739*** (4.47)	-1.13*** (5.07)	-0.846*** (4.95)	-1.174*** (5.01)	-1.026*** (5.54)	-1.53*** (5.92)	-1.067*** (5.05)	-1.389*** (4.92)
Δ <i>R&D/ Sales</i> _[t-1,t]	-0.834* (1.81)	-0.892* (1.71)	-0.257 (0.54)	-0.417 (0.72)	-0.557 (0.88)	-1.005 (1.46)	-1.021 (1.51)	-2.092*** (3.01)	-0.807 (1.04)	-1.892** (2.34)
Δ <i>Industry M&A Volume</i> _[t-1,t]	0.181*** (3.49)	0.131** (2.02)	0.115** (2.07)	0.064 (0.91)	0.093* (1.76)	0.063 (0.92)	0.056 (0.93)	-0.083 (1.04)	0.171** (2.50)	0.068 (0.76)
N	18,615	12,607	18,203	12,326	17,340	11,565	16,457	10,795	15,579	10,045
Adjusted R-Squared	0.08	0.08	0.07	0.07	0.06	0.07	0.05	0.06	0.05	0.05

APPENDIX TABLE A.3: PANEL C. FUTURE CHANGES IN Q vs. PAST CHANGES IN CONTROL VARIABLES (INCLUDING TRANSITION YEAR) – EXTENDED SET OF CONTROL VARIABLES AND EXTENDED TIME SERIES (UP TO FIVE YEARS AFTER LEAVING COMPUSTAT DATABASE)

<i>Dep. Variable:</i>	$\Delta Q_{[t-1,t]}$	$\Delta Q_{[t-1,t]}$	$\Delta Q_{[t-1,t+1]}$	$\Delta Q_{[t-1,t+1]}$	$\Delta Q_{[t-1,t+2]}$	$\Delta Q_{[t-1,t+2]}$	$\Delta Q_{[t-1,t+3]}$	$\Delta Q_{[t-1,t+3]}$	$\Delta Q_{[t-1,t+4]}$	$\Delta Q_{[t-1,t+4]}$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Δ Staggered Board _[t-1,t]	0.043*** (2.91)	0.035 (1.57)	0.065*** (2.84)	0.066** (2.11)	0.079** (2.63)	0.121** (2.59)	0.117*** (3.61)	0.177*** (3.52)	0.109*** (2.95)	0.152** (2.50)
Δ G-Index _[t-1,t]	0.003 (0.92)	-0.002 (0.35)	0.000 (0.11)	-0.006 (0.89)	0.002 (0.34)	-0.004 (0.52)	0.007 (1.15)	-0.001 (0.15)	0.011 (1.66)	-0.001 (0.16)
Δ Ln (Assets) _[t-1,t]	-0.246*** (10.86)	-0.295*** (10.69)	-0.489*** (15.37)	-0.555*** (15.65)	-0.644*** (15.99)	-0.752*** (16.82)	-0.691*** (15.50)	-0.804*** (16.12)	-0.692*** (14.09)	-0.792*** (14.36)
Δ Ln (Firm Age) _[t-1,t]	0.096** (2.19)	0.174** (1.97)	0.116 (1.59)	0.153 (1.01)	0.165 (1.63)	0.239 (1.25)	0.272** (2.17)	0.427* (1.81)	0.358** (2.43)	0.597** (2.17)
Δ Insider Ownership _[t-1,t]		-0.276* (1.82)		-0.315* (1.78)		-0.131 (0.59)		0.012 (0.05)		-0.052 (0.21)
Δ Insider Ownership ² _[t-1,t]		0.149 (1.01)		0.307 (1.65)		0.063 (0.28)		-0.003 (0.01)		0.036 (0.14)
Δ ROA _[t-1,t]	2.058*** (18.37)	2.231*** (15.41)	1.948*** (15.24)	2.115*** (12.64)	1.614*** (12.17)	1.64*** (9.67)	1.206*** (8.64)	1.144*** (6.42)	1.299*** (9.18)	1.204*** (6.34)
Δ CAPX/Assets _[t-1,t]	-0.343** (2.50)	-0.45** (2.54)	-0.858*** (5.33)	-1.322*** (6.05)	-0.966*** (5.72)	-1.37*** (5.85)	-1.131*** (6.21)	-1.712*** (6.62)	-1.149*** (5.50)	-1.516*** (5.38)
Δ R&D/ Sales _[t-1,t]	-0.744* (1.84)	-0.845* (1.86)	-0.303 (0.74)	-0.496 (0.99)	-0.591 (1.08)	-0.980 (1.65)	-0.960 (1.63)	-1.977*** (3.28)	-0.853 (1.25)	-1.782** (2.58)
Δ Industry M&A Volume _[t-1,t]	0.173*** (3.43)	0.104 (1.65)	0.080 (1.46)	0.021 (0.31)	0.055 (1.03)	0.020 (0.29)	0.021 (0.35)	-0.116 (1.46)	0.122* (1.80)	0.014 (0.16)
N	20,189	13,537	19,282	12,943	18,246	12,080	17,262	11,231	16,306	10,440
Adjusted R-Squared	0.07	0.08	0.06	0.07	0.06	0.07	0.05	0.06	0.05	0.06

APPENDIX TABLE A.4: PORTFOLIO ANALYSIS

Table A.4 presents the analysis of monthly portfolio returns for firms that have staggered up (in the 'long' portfolio) and firms that have de-staggered (in the 'short' portfolio). Presented are the value weighted portfolios returns for portfolios "6m12", "12m12" and "12m24" in Panel A and the equally weighted (value weighted) returns for portfolios "18m12", "18m18" and "18m24" in Panel B (Panel C) for the long portfolio minus the short portfolio around board staggering and de-staggering event in our sample of firms during the time period 1978-2011. The long (short) portfolios are composed every month as follows. For portfolios "6m12", "12m12" and "12m24" we follow the procedure described in Table 6. For portfolio "18m12", we include all stocks of firms that have (de-)staggered their boards starting 18 months before the fiscal year-end date 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. For portfolio "18m18", we include all stocks of firms that have (de-)staggered their boards starting 18 months before the fiscal year-end date of the year in which the firm has reported its board being (de-)staggered for the first time, and hold these stocks for 18 months. For portfolio "18m24", we include all stocks of firms that have (de-)staggered their boards starting 18 months before the fiscal year-end date of the year in which the firm has reported its board being (de-)staggered for the first time, and hold these stocks for 24 months. 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 (i) long portfolio, (ii) short portfolio, and (iii) long minus short portfolio. The absolute values of the t-statistics are based on robust standard errors and are presented in parentheses below the coefficients. The annualized alphas to each portfolio are in percentages based on monthly returns. Statistical significance of the coefficients is indicated at the 1%, 5%, and 10% levels by ***, **, and *, respectively. The average number of stocks in the long and short portfolios (averaged across all months) is shown for the four factor model.

**APPENDIX TABLE A.4, PANEL A: PORTFOLIO ANALYSIS –VALUE WEIGHTED
RETURNS**

	Four-Factor Model			Three-Factor Model			Market Factor Model		
<u>Portfolio “6m12”</u>									
	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>
<i>Alpha (Monthly)</i>	-0.004 (0.01)	-0.132 (0.43)	0.253 (0.53)	-0.047 (0.13)	-0.171 (0.56)	0.278 (0.58)	-0.006 (0.02)	-0.123 (0.4)	0.251 (0.51)
<i>Alpha (Annual)</i>	0.05%	1.57%	3.08%	0.56%	-2.03%	3.39%	-0.07%	-1.47%	3.05%
Average # Firms	13	15.2	-	13	15.2	-	13	15.2	-
N	321	224	211	321	224	211	321	224	211
Adj. R-Squared	0.453	0.546	0.038	0.454	0.543	0.041	0.443	0.533	0.001
	Four-Factor Model			Three-Factor Model			Market Factor Model		
<u>Portfolio “12m12”</u>									
	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>
<i>Alpha (Monthly)</i>	0.231 (0.58)	-0.349 (1.28)	1.363** (2.35)	0.125 (0.34)	-0.398 (1.54)	1.263** (2.34)	0.232 (0.68)	-0.416 (1.58)	1.34** (2.57)
<i>Alpha (Annual)</i>	2.81%	4.11%	17.64%	1.51%	-4.67%	16.25%	2.82%	-4.88%	17.32%
Average # Firms	12.8	16.1	-	12.8	16.1	-	12.8	16.1	-
N	319	237	216	319	237	216	319	237	216
Adj. R-Squared	0.388	0.602	0.035	0.386	0.603	0.036	0.38	0.592	0.001
	Four-Factor Model			Three-Factor Model			Market Factor Model		
<u>Portfolio “12m24”</u>									
	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>
<i>Alpha (Monthly)</i>	-0.008 (0.04)	-0.167 (0.69)	0.154 (0.50)	-0.06 (0.28)	-0.129 (0.53)	0.054 (0.17)	0.024 (0.12)	-0.165 (0.67)	0.149 (0.47)
<i>Alpha (Annual)</i>	0.10%	1.99%	1.86%	0.72%	-1.54%	0.65%	0.29%	-1.96%	1.80%
Average # Firms	23.7	22.5	-	23.7	22.5	-	23.7	22.5	-
N	388	350	349	388	350	349	388	350	349
Adj. R-Squared	0.584	0.557	0.047	0.583	0.558	0.042	0.577	0.535	0.001

APPENDIX TABLE A.4, PANEL B: PORTFOLIO ANALYSIS –ADDITIONAL PORTFOLIOS
 (“18M12”, “18M18”, AND “18M24”), EQUALLY WEIGHTED RETURNS

	Four-Factor Model			Three-Factor Model			Market Factor Model		
<u>Portfolio “18m12”</u>	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>
<i>Alpha (Monthly)</i>	0.574 (1.52)	0.066 (0.21)	0.414 (0.72)	0.275 (0.75)	-0.086 (0.28)	0.357 (0.65)	0.496 (1.45)	0.096 (0.31)	0.399 (0.77)
<i>Alpha (Annual)</i>	7.11%	0.79%	5.08%	3.35%	-1.03%	4.37%	6.12%	1.16%	4.89%
Average # Firms	13.04	15.70	-	13.04	15.70	-	13.04	15.70	-
N	318	231	216	318	231	216	318	231	216
Adj. R-Squared	0.455	0.561	-0.015	0.429	0.545	-0.011	0.397	0.507	-0.003

	Four-Factor Model			Three-Factor Model			Market Factor Model		
<u>Portfolio “18m18”</u>	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>
<i>Alpha (Monthly)</i>	0.576* (1.85)	0.047 (0.20)	0.642 (1.52)	0.394 (1.34)	-0.116 (0.51)	0.66* (1.66)	0.603** (2.18)	0.052 (0.22)	0.655* (1.78)
<i>Alpha (Annual)</i>	7.14%	0.57%	7.98%	4.83%	-1.38%	8.21%	7.48%	0.63%	8.15%
Average # Firms	18.21	20.46	-	18.21	20.46	-	18.21	20.46	-
N	366	307	297	366	307	297	366	307	297
Adj. R-Squared	0.53	0.634	-0.012	0.512	0.621	-0.009	0.465	0.572	-0.002

	Four-Factor Model			Three-Factor Model			Market Factor Model		
<u>Portfolio “18m24”</u>	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>
<i>Alpha (Monthly)</i>	0.395** (2.00)	0.247 (1.13)	0.258 (0.85)	0.258 (1.35)	0.109 (0.52)	0.272 (0.94)	0.546** (2.55)	0.292 (1.30)	0.34 (1.19)
<i>Alpha (Annual)</i>	4.84%	3.00%	3.14%	3.14%	1.32%	3.31%	6.75%	3.56%	4.16%
Average # Firms	23.87	23.56	-	23.87	23.56	-	23.87	23.56	-
N	389	349	349	389	349	349	389	349	349
Adj. R-Squared	0.665	0.621	-0.003	0.652	0.604	0.00	0.565	0.562	-0.003

APPENDIX TABLE A.4, PANEL C: PORTFOLIO ANALYSIS – ADDITIONAL PORTFOLIOS
 (“18M12”, “18M18”, AND “18M24”), VALUE WEIGHTED RETURNS

	Four-Factor Model			Three-Factor Model			Market Factor Model		
<u>Portfolio “18m12”</u>	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>
<i>Alpha (Monthly)</i>	0.25 (0.6)	-0.364 (1.14)	0.711 (1.14)	0.104 (0.27)	-0.443 (1.45)	0.654 (1.13)	0.192 (0.53)	-0.491 (1.61)	0.802 (1.41)
<i>Alpha (Annual)</i>	3.04%	4.28%	8.87%	1.26%	-5.19%	8.14%	2.33%	-5.74%	10.06%
Average # Firms	13.05	15.70	-	13.05	15.70	-	13.05	15.70	-
N	318	231	216	318	231	216	318	231	216
Adj. R-Squared	0.383	0.535	0.002	0.379	0.532	0.006	0.378	0.529	-0.003

	Four-Factor Model			Three-Factor Model			Market Factor Model		
<u>Portfolio “18m18”</u>	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>
<i>Alpha (Monthly)</i>	0.231 (0.70)	-0.107 (0.42)	0.561 (1.18)	0.078 (0.26)	-0.181 (0.76)	0.453 (1.06)	0.186 (0.65)	-0.184 (0.77)	0.531 (1.27)
<i>Alpha (Annual)</i>	2.81%	-1.3%	6.94%	0.94%	-2.15%	5.57%	2.25%	-2.19%	6.56%
Average # Firms	18.21	20.46	-	18.21	20.46	-	18.21	20.46	-
N	366	307	297	366	307	297	366	307	297
Adj. R-Squared	0.466	0.599	0.01	0.456	0.597	0.007	0.45	0.592	-0.003

	Four-Factor Model			Three-Factor Model			Market Factor Model		
<u>Portfolio “18m24”</u>	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>	<i>Long</i>	<i>Short</i>	<i>Long - Short</i>
<i>Alpha (Monthly)</i>	0.114 (0.46)	0.102 (0.42)	0.098 (0.28)	0.046 (0.2)	0.057 (0.24)	0.086 (0.25)	0.143 (0.62)	0.02 (0.08)	0.184 (0.54)
<i>Alpha (Annual)</i>	1.38%	1.23%	1.18%	0.55%	0.69%	1.04%	1.73%	0.24%	2.23%
Average # Firms	23.87	23.56	-	23.87	23.56	-	23.87	23.56	-
N	389	349	349	389	349	349	389	349	349
Adj. R-Squared	0.521	0.546	0.01	0.519	0.546	0.013	0.512	0.534	-0.003

**APPENDIX TABLE A.5: FIRM VALUE AND STAGGERED BOARDS: REVERSE CAUSALITY TESTS
USING EXTENDED SET OF CONTROLS**

Table A.5 presents reverse causality regressions to explain 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_{it}) plus other characteristics. The sample for Panel B (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. Each panel shows three sets of models. Columns (1) and (2) use a random effects Probit model, with robust standard errors clustered by firm and reporting marginal effects. Columns (3) and (4) use the Cox proportional hazard model (Greene, 2000) and report the hazard ratio using robust standard errors clustered at the firm level (after standardizing the continuous variables to have zero mean and unit variance). Dual-class stocks are removed from the sample. Statistical significance of the coefficients is indicated at the 1%, 5%, and 10% levels by ***, **, and *, respectively, in two tailed tests. T-statistics (in their absolute value) are shown in parentheses below the coefficient estimates. All control variables are defined in Table 1. The sample in the table refers to the time period 1978-2011.

APPENDIX TABLE A.5: FIRM VALUE AND STAGGERED BOARDS: REVERSE CAUSALITY TESTS
(CONTINUED)

PANEL A. PREDICT STAGGERING UP

Dep. Variable is: Pr(Stagger in t)	<i>Random Effects Probit Model</i>		<i>Random Effects Cox Model</i>	
	(1)	(2)	(3)	(4)
<i>Variables</i>				
$Q_{[t-1]}$	-0.007*** (3.35)	-0.001** (2.18)	0.430*** (6.27)	0.501*** (3.10)
$G\text{-Index}_{[t-1]}$	0.003*** (6.65)	0.0004* (1.68)	1.881*** (6.79)	1.791*** (3.47)
$\ln(\text{Assets})_{[t-1]}$	-0.001 (1.47)	-0.00003 (0.17)	1.159* (1.85)	1.105 (0.64)
$\ln(\text{Firm Age})_{[t-1]}$	-0.002** (1.97)	-0.0002 (0.38)	1.053 (0.62)	1.321 (1.15)
<i>Delaware Incorporation</i> _[t-1]	-0.002 (0.83)	-0.0006 (0.85)	0.969 (0.42)	0.960 (0.30)
<i>Insider Ownership</i> _[t-1]		-0.00007 (0.00)		0.937 (0.24)
<i>Insider Ownership</i> ² _[t-1]		0.0004 (0.05)		1.184 (0.84)
$ROA_{[t-1]}$	0.039** (2.16)	0.006 (1.10)	1.617*** (4.64)	1.647** (2.34)
$CAPX/Assets_{[t-1]}$	0.077*** (3.13)	0.003 (0.57)	1.224*** (2.86)	1.079 (0.53)
$R\&D/Sales_{[t-1]}$	-0.038 (1.33)	-0.002 (0.36)	0.946 (0.50)	1.085 (0.42)
<i>Industry M&A Volume</i> _[t-1]	0.029* (1.76)	0.006 (1.30)	0.996 (0.05)	1.137 (1.26)
N	9,335	6,067	8,772	5,542
Number of firms	750	593	677	494
Pseudo R-2	-	-	0.055	0.060
Adjusted R-2	-	-	-	-
Wald Chi-2 (p-value)	56.0 (0.00)	22.16 (0.023)	-	-

APPENDIX TABLE A.5: FIRM VALUE AND STAGGERED BOARDS: REVERSE CAUSALITY TESTS
(CONTINUED)

PANEL B. PREDICT DE-STAGGERING

Dep. Variable is: Pr (De-Stagger in t)	<i>Random Effects Probit Model</i>		<i>Random Effects Probit Model</i>	
	(1)	(2)	(3)	(4)
<i>Q</i> _[t-1]	-0.001 (1.06)	-0.0002 (0.12)	1.086 (0.45)	1.038 (0.17)
<i>G-Index</i> _[t-1]	0.0002 (0.60)	-0.0008 (1.50)	1.023 (0.15)	1.006 (0.03)
<i>Ln (Assets)</i> _[t-1]	-0.005*** (7.31)	-0.006*** (6.67)	1.753*** (3.93)	1.763*** (3.83)
<i>Ln (Firm Age)</i> _[t-1]	-0.007*** (4.23)	-0.008*** (3.13)	1.282 (1.01)	1.104 (0.38)
<i>Delaware Incorporation</i> _[t-1]	-0.001 (0.55)	-0.0005 (0.20)	1.015 (0.14)	0.968 (0.31)
<i>Insider Ownership</i> _[t-1]		0.039 (1.39)		0.572 (1.42)
<i>Insider Ownership</i> ² _[t-1]		-0.070** (2.12)		1.679* (1.90)
<i>ROA</i> _[t-1]	0.031* (1.81)	0.018 (0.79)	0.961 (0.23)	0.998 (0.01)
<i>CAPX/Assets</i> _[t-1]	0.021 (0.87)	0.036 (1.14)	1.002 (0.03)	0.964 (0.37)
<i>R&D/ Sales</i> _[t-1]	-0.024 (1.17)	-0.042 (1.64)	1.062 (0.47)	1.095 (0.73)
<i>Industry M&A Volume</i> _[t-1]	0.012 (0.62)	0.019 (0.73)	1.061 (0.49)	1.027 (0.19)
N	10,745	8,537	7,605	5,924
Number of firms	733	668	532	488
Pseudo R-2	-	-	0.022	0.029
Adjusted R-2	-	-	-	-
Wald Chi-2 (p-value)	117.6 (0.00)	106.5 (0.00)	-	-

APPENDIX TABLE A.6: FIRM VALUE AND STAGGERED BOARDS: CONTROLLING FOR LAGGED Q (I.E., $Q_{[t-1]}$) REPLICATION OF TABLE 3

Table A.6 shows a replication of Bebchuk and Cohen (2005) with two different sets of control variables and across different time periods. Columns (1)-(3), (5) and (6) include the following control variables: $Q_{[t-1]}$, *Staggered Board*_[t-1], $\ln(\text{Assets})_{[t-1]}$, *Delaware Incorporation*_[t-1], $ROA_{[t-1]}$, $CAPX/Assets_{[t-1]}$, and $R\&D/Sales_{[t-1]}$, and $M\&A\ Volume_{[t-1]}$ Column (4) adds these control variables: $G\text{-Index}_{[t-1]}$, $\ln(\text{Firm Age})_{[t-1]}$, $Insider\ Ownership_{[t-1]}$, and $Insider\ Ownership^2_{[t-1]}$. The analysis includes the following sub-periods: 1978-1989, 1990-2000, 2001-2011, 1995-2002, 1978-1985, and 1986-2011. Estimation is using pooled panel *Tobin's Q*_[t] regressions where year and industry fixed effects are always included. All control variables are defined in Table 1. Statistical significance of the coefficients is indicated at the 1%, 5%, and 10% levels by ***, **, and *, respectively, based on robust standard errors clustered by firm.

APPENDIX TABLE A.6: FIRM VALUE AND STAGGERED BOARDS: CONTROLLING FOR LAGGED Q (I.E., $Q_{[t-1]}$) REPLICATION OF TABLE 3 (CONTINUED)

	(1)	(2)	(3)	(4)	(5)	(6)
Period:	1978- 1989	1990- 2000	2001- 2011	1995- 2002	1978- 1985	1986- 2011
$Q_{[t-1]}$	0.802*** (39.13)	0.694*** (38.52)	0.756*** (66.69)	0.676*** (32.71)	0.771*** (37.13)	0.756*** (83.57)
<i>Staggered Board</i> $_{[t-1]}$	-0.001 (0.15)	-0.009 (0.69)	-0.010 (1.13)	-0.016 (0.87)	0.002 (0.28)	-0.008 (1.17)
<i>G-Index</i> $_{[t-1]}$				0.000 (0.06)		
$\ln(\text{Assets})_{[t-1]}$	-0.007** (2.36)	0.007 (1.28)	-0.01*** (2.78)	0.018** (2.27)	-0.007** (2.45)	-0.003 (1.04)
$\ln(\text{Firm Age})_{[t-1]}$				-0.005 (0.25)		
<i>Delaware Incorporation</i> $_{[t-1]}$	0.007 (0.99)	-0.009 (0.65)	-0.01 (0.98)	-0.002 (0.13)	0.009 (1.29)	-0.007 (1.01)
<i>Insider Ownership</i> $_{[t-1]}$				0.171 (1.01)		
<i>Insider Ownership</i> $^2_{[t-1]}$				0.011 (0.04)		
$ROA_{[t-1]}$	0.28*** (3.38)	1.153*** (6.94)	0.582*** (5.53)	1.205*** (5.74)	0.34*** (3.98)	0.691*** (8.78)
$CAPX/Assets_{[t-1]}$	-0.424*** (4.54)	-0.442** (2.25)	-0.606*** (3.48)	-0.75*** (3.04)	-0.394*** (3.91)	-0.38*** (3.41)
$R\&D/Sales_{[t-1]}$	1.497*** (4.76)	1.846*** (5.54)	0.577*** (3.63)	1.552*** (3.70)	1.561*** (4.19)	0.714*** (5.07)
<i>Industry M&A Volume</i> $_{[t-1]}$	-0.156* (1.87)	-0.041 (0.30)	-0.156* (1.81)	0.136 (1.11)	-0.09 (0.78)	-0.119* (1.90)
N	7,479	8,596	12,389	5,027	5,083	23,381
Adjusted R-Squared	0.76	0.76	0.77	0.77	0.75	0.77
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes
Firm Effect	No	No	No	No	No	No
Industry Effect	Yes	Yes	Yes	Yes	Yes	Yes
# of firms in regression	1,028	1,290	1,971	943	929	2,517
Clustering	Firm	Firm	Firm	Firm	Firm	Firm

APPENDIX TABLE A.7: FIRM VALUE AND CHARTER- VERSUS BYLAW-BASED STAGGERED BOARDS

Table A.7 shows a replication of Bebchuk and Cohen (2005) with two different sets of control variables, where the dependent variable is $Q_{[i]}$. Panel A includes as the key independent variable *Staggered Board-Charter*_[i-1] and *Staggered Board-Bylaws*_[i-1], and Panel B includes *Staggered Board*_[i-1] and *Staggered Board-Bylaws*_[i-1]. Control variables are *G-Index*_[i-1], $\ln(\text{Assets})_{[i-1]}$, $\ln(\text{Firm Age})_{[i-1]}$, *Delaware Incorporation*_[i-1], *ROA*_[i-1], *CAPX/Assets*_[i-1], *R&D/Sales*_[i-1], and *Industry M&A Volume*_[i-1]. Columns (2) and (4) include the following control variables: *Staggered Board*_[i-1], *G-Index*_[i-1], $\ln(\text{Assets})_{[i-1]}$, $\ln(\text{Firm Age})_{[i-1]}$, *Delaware Incorporation*_[i-1], *Insider Ownership*_[i-1], *Insider Ownership*²_[i-1], *ROA*_[i-1], *CAPX/Assets*_[i-1], *R&D/Sales*_[i-1] and *Industry M&A Volume*_[i-1]. The analysis includes 1978-2011 data. Estimation is using pooled panel *Tobin's Q*_[i] regressions where year and industry fixed effects are included in Columns (1) and (2). Columns (3) and (4) include instead year and firm fixed effects. All control variables are defined in Table 1. Statistical significance of the coefficients is indicated at the 1%, 5%, and 10% levels by ***, **, and *, respectively, in two tailed tests, based on robust standard errors clustered by firm.

APPENDIX TABLE A.7, PANEL A: FIRM VALUE AND STAGGERED BOARDS (CONTINUED)

	(1)	(2)	(3)	(4)
	$Q_{[i]}$	$Q_{[i]}$	$Q_{[i]}$	$Q_{[i]}$
<i>Staggered Board-Charter</i> _[t-1]	-0.009 (0.38)	0.017 (0.59)	0.080** (2.23)	0.112** (2.28)
<i>Staggered Board-Bylaws</i> _[t-1]	0.013 (0.37)	0.065 (1.45)	0.085** (2.18)	0.13** (2.22)
<i>G-Index</i> _[t-1]	-0.009** (2.04)	-0.008 (1.49)	-0.013** (2.07)	-0.014 (1.62)
<i>Ln (Assets)</i> _[t-1]	0.010 (0.93)	0.011 (0.84)	-0.108*** (5.37)	-0.182*** (7.19)
<i>Ln (Firm Age)</i> _[t-1]	-0.013 (1.00)	-0.001 (0.02)	-0.045 (1.06)	0.038 (0.5)
<i>Delaware Incorporation</i> _[t-1]	0.001 (0.05)	-0.01 (0.33)		
<i>Insider Ownership</i> _[t-1]		-0.068 (0.26)		-0.135 (0.51)
<i>Insider Ownership</i> ² _[t-1]		0.164 (0.46)		0.017 (0.05)
<i>ROA</i> _[t-1]	5.063*** (22.74)	5.616*** (21.45)	3.710*** (18.05)	3.809*** (16.49)
<i>CAPX/Assets</i> _[t-1]	-0.336 (1.37)	-0.281 (0.87)	0.166 (0.76)	0.214 (0.75)
<i>R&D/ Sales</i> _[t-1]	4.288*** (6.76)	4.378*** (6.00)	2.444*** (2.99)	1.068 (1.00)
<i>Industry M&A Volume</i> _[t-1]	-0.179* (1.89)	-0.121 (1.10)	-0.248*** (2.88)	-0.218** (2.13)
N	16,254	11,311	16,254	11,311
Adjusted R-Squared	0.58	0.60	0.69	0.72
Year Effect	Yes	Yes	Yes	Yes
Industry Effect	<u>Yes</u>	<u>Yes</u>	No	No
Firm Effect	No	No	<u>Yes</u>	<u>Yes</u>
Clustering	Firm	Firm	Firm	Firm

APPENDIX TABLE A.7, PANEL B: FIRM VALUE AND STAGGERED BOARDS (CONTINUED)

	(1)	(2)	(3)	(4)
	$Q_{[i]}$	$Q_{[i]}$	$Q_{[i]}$	$Q_{[i]}$
<i>Staggered Board</i> _[t-1]	-0.009 (0.35)	0.020 (0.68)	0.08** (2.26)	0.113** (2.34)
<i>Staggered Board-Bylaw</i> _[t-1]	0.022 (0.63)	0.047 (1.15)	0.006 (0.15)	0.018 (0.35)
<i>G-Index</i> _[t-1]	-0.009** (2.05)	-0.008 (1.51)	-0.013** (2.06)	-0.014 (1.60)
<i>Ln (Assets)</i> _[t-1]	0.010 (0.94)	0.011 (0.86)	-0.108*** (5.38)	-0.181*** (7.20)
<i>Ln (Firm Age)</i> _[t-1]	-0.013 (0.99)	-0.000 (0.01)	-0.046 (1.07)	0.038 (0.50)
<i>Delaware Incorporation</i> _[t-1]	0.001 (0.05)	-0.01 (0.33)		
<i>Insider Ownership</i> _[t-1]		-0.067 (0.26)		-0.132 (0.49)
<i>Insider Ownership</i> ² _[t-1]		0.164 (0.46)		0.013 (0.04)
<i>ROA</i> _[t-1]	5.063*** (22.74)	5.617*** (21.45)	3.712*** (18.07)	3.811*** (16.51)
<i>CAPX/Assets</i> _[t-1]	-0.336 (1.37)	-0.281 (0.87)	0.164 (0.75)	0.214 (0.75)
<i>R&D/ Sales</i> _[t-1]	4.287*** (6.76)	4.377*** (6.00)	2.447*** (2.99)	1.070 (1.00)
<i>Industry M&A Volume</i> _[t-1]	-0.178* (1.89)	-0.121 (1.10)	-0.249*** (2.90)	-0.22** (2.15)
N	16,254	11,311	16,254	11,311
Adjusted R-Squared	0.58	0.60	0.69	0.72
Year Effect	Yes	Yes	Yes	Yes
Industry Effect	<u>Yes</u>	<u>Yes</u>	No	No
Firm Effect	No	No	<u>Yes</u>	<u>Yes</u>
Clustering	Firm	Firm	Firm	Firm

APPENDIX TABLE A.8: STAGGERED BOARDS AND CEO TURNOVER

In Table A.8 we summarize analysis from logistic regressions relating the occurrence of *Forced CEO Turnover* in Columns (1)-(4) and *CEO Turnover* in Columns (5)-(8) to key independent variables. As key independent variables we include: *Staggered Board*_[i], *Excess Returns*_[i-1], and their interaction. We obtain *Forced CEO Turnover*_[i] and *CEO Turnover*_[i] from the data file in Jenter and Kanaan (2010). *Excess Returns*_[i] is defined as the annual returns as of the end of the fiscal year preceding the calendar date of the turnover event, net of the market returns for the corresponding period. Actual returns are from CRSP, while market returns are from Kenneth French's online data library. Prior to calculating the interaction of *Staggered Board*_[i] and *Excess Return*_[i-1], we demean the latter. We also control in Columns (3), (4), (7) and (8) for: *Majority of Independent Directors Indicator*_[i], *CEO-Chairman Duality*_[i], *Insider Ownership*_[i], *Poison Pill*_[i], *Delaware Incorporation*_[i], and *Board Size*_[i] following the list of control variables in Faleye (2007). In Columns (1), (2), (5) and (6) we control for: *Majority of Independent Directors Indicator*_[i], *CEO-Chairman Duality*_[i], *Poison Pill*_[i], *Delaware Incorporation*_[i], and *Board Size*_[i]. All variables are defined in Table 1. We present estimates of marginal effects. Standard errors are clustered at the firm level. T-statistics (in their absolute value) are shown in parentheses below the coefficient estimates. Statistical significance of the coefficients is indicated at the 1%, 5%, and 10% levels by ***, **, and *, respectively, in two tailed tests.

