

CEO-BOARD DYNAMICS

Online Appendix (Not For Publication)

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Online Appendix A – Robustness tests for subsamples and firm survival

In this appendix, we describe two robustness tests. First, we split the full sample into subsamples by time period to examine whether the effect of CEO tenure on board structure is robust in various sub-periods. Second, we repeat our estimation using subsamples consisting of firms that survive for more than T years, where T=2, 5, 10, or 15.

Appendix Table 1 presents results for these tests. Columns 1 to 3 of Panels A (board independence) and B (CEO-chair dual title) split the full sample into three non-overlapping time periods (1920-50, 1951-1981, and 1982-2011) and find that the board independence-CEO tenure (chair duality) effect generally decreases (increases) over the century. In Panel C, we estimate Eq. (2) for subsamples consisting of firms that exist in the database more than 15 years (or more than 10 years, etc.). Subsetting in this manner allows us to examine whether our within-firm results hold for firms with a long history and therefore are not driven by sample composition effects (new or short-lived firms entering the full sample). Column 1 shows the baseline estimate from column 4 of Table 4, Panel A as a basis for comparison. Across the columns, the coefficients on CEO tenure are very similar, suggesting that our results are in fact driven by (long) within-firm dynamics.

Online Appendix B – Characteristics of firms that are not included in the main sample

In this appendix, we describe the characteristics of the firms in the “missing 20%” of the sample (i.e., firm-years that are not matched to our CEO and board data). Appendix Table 3 shows the firm-level characteristics of these firms. The small numbers of observations prior to the 1950s indicate that the majority of non-matched firms are from the modern period (e.g., when Compustat data exist). In general, these non-matched firms are smaller and less profitable (measured by ROA) than the firms in the main sample (see Panel B of Table 1) but have similar Tobin’s q and cash holdings. Thus, our results on CEO and board dynamics should be interpreted conditional on the selected sample of relatively large and profitable firms, particularly in a more modern time period.

Online Appendix Table 1: CEO tenure and board independence: Subsample and survival analyses

This table provides robustness tests for the relation between CEO tenure, board independence and board chair dual titles. Panels A and B split the full sample into subsamples consisting of different time periods, and examine board independence and dual chair titles; Panel C uses subsamples that require that firms survive more than a certain number of years; Panel D examines board independence and dual chair titles using a subsample of NYSE firms only, and a sample that includes firms listed on all exchanges (including the NASDAQ). Firms with only one reported director are excluded. All standard errors are adjusted for sample clustering at the firm level. *, **, and *** represent results significant at the 10, 5, and 1% levels, respectively.

Panel A: Subsample periods – board independence

Dep. Var.	Independence ratio		
	(1)	(2)	(3)
Sample:	1920-1950	1951-1981	1982-2011
CEO tenure	-0.163*** (-3.69)	-0.084*** (-2.71)	-0.096*** (-3.38)
Firm-level controls	Y	Y	Y
Firm fixed effects	Y	Y	Y
Year fixed effects	Y	Y	Y
R ²	0.746	0.728	0.664
N	15139	33705	38102

Panel B: Subsample periods – board chair duality

Dep. Var.	1 (Chair duality)		
	(1)	(2)	(3)
Sample:	1920-1950	1951-1981	1982-2011
CEO tenure	1.235*** (5.35)	2.421*** (15.26)	2.718*** (28.88)
Firm-level controls	Y	Y	Y
Firm fixed effects	Y	Y	Y
Year fixed effects	Y	Y	Y
R ²	0.590	0.559	0.546
N	7541	25396	34950

Panel C: Firm survival

Dep. Var.	Independence ratio				
	(1) Full sample	(2) Survive > 2 years	(3) Survive > 5 years	(4) Survive > 10 years	(5) Survive > 15 years
CEO tenure	-0.150*** (-6.87)	-0.150*** (-6.87)	-0.149*** (-6.81)	-0.145*** (-6.57)	-0.139*** (-6.18)
Firm-level controls	Y	Y	Y	Y	Y
Firm fixed effects	Y	Y	Y	Y	Y
Year fixed effects	Y	Y	Y	Y	Y
R ²	0.656	0.653	0.647	0.635	0.626
N	86946	86354	83983	78121	70335

Panel D: NYSE only subsample and all exchanges

Dep. Var.	Independence ratio		1 (Chair duality)	
	(1) NYSE only	(2) All exchanges	(3) NYSE only	(4) All exchanges
CEO tenure	-0.118*** (-5.05)	-0.137*** (-6.67)	2.351*** (25.41)	2.447*** (34.37)
Firm-level controls	Y	Y	Y	Y
Firm fixed effects	Y	Y	Y	Y
Year fixed effects	Y	Y	Y	Y
R ²	0.653	0.652	0.530	0.557
N	66579	143739	51696	116957

Online Appendix Table 2: CEO tenure, board independence and cumulative number of CEO turnovers

This table presents the relation between the CEO's tenure and board independence controlling for the cumulative number of CEO turnovers within firms. Firms with only one reported director are excluded from the sample. All standard errors are adjusted for sample clustering at the firm level. *, **, and *** represent results significant at the 10, 5, and 1% levels, respectively.

Dep. Var.	Independence ratio	
	(1)	(2)
Sample	Full	Full
CEO tenure	-0.129*** (-4.63)	-0.268*** (-8.88)
N. cumulative CEO turnovers	0.277 (1.32)	-0.188 (-1.24)
Firm-level controls	Y	Y
Firm fixed effects	Y	
Year fixed effects	Y	Y
R ²	0.656	0.200
N	86946	86946

Online Appendix Table 3: Descriptive statistics on firm-years excluded in the main sample from 1920 to 2011

Table 1, Panel B in the main text presents summary statistics for key variables for the sample firms for which we also have director and officer data and hence include in our analysis. This table presents summary statistics for the firms that we do not include in our analysis because these observations lack director and officer data from 1920 to 2011. All variables definitions are the same as in Table 1, Panel B.

Variable	N (firm-years)	Total assets (\$million in 2000)	ROA	Tangibility	Tobin's q	Cash/assets
Panel A: Full Sample (1920-2011)						
Mean	15,197	1,816.82	0.032	0.321	1.507	0.064
Median	-	195.50	0.045	0.262	1.165	0.032
STD	-	11,898.81	0.118	0.254	1.057	0.091
Panel B: By-decade Mean						
1920s	30	336.17	0.048	0.530	0.835	0.027
1930s	40	371.34	0.001	0.459	0.890	0.064
1940s	31	866.14	0.102	0.323	1.358	0.121
1950s	265	4,746.39	0.068	0.425	1.142	0.089
1960s	2,864	1,418.74	0.072	0.326	1.778	0.073
1970s	3,730	1,546.35	0.048	0.307	1.195	0.042
1980s	3,804	2,026.63	0.028	0.336	1.382	0.045
1990s	2,477	2,112.90	0.008	0.323	1.609	0.068
2000s*	1,956	1,802.92	-0.024	0.286	1.896	0.123