

Appendix to “Complex ownership structures and corporate valuations” by Luc Laeven and Ross Levine

The following tables differ from those included in the paper in that they include a small number of firms for which cash-flow-2 exceeds cash-flow-1.

Table 1
Summary Statistics of Tobin's Q

Country	Number of firms	Mean	Median	Minimum	Maximum	Standard deviation
Austria	39	1.18	1.04	0.72	2.44	0.35
Belgium	40	1.23	1.10	0.80	2.98	0.43
Finland	72	2.00	1.20	0.68	13.29	2.31
France	194	1.57	1.15	0.59	11.89	1.28
Germany	169	1.48	1.17	0.68	16.99	1.48
Ireland	47	2.06	1.23	0.46	18.39	2.83
Italy	79	1.45	1.17	0.66	4.97	0.84
Norway	62	1.64	1.13	0.56	12.21	1.84
Portugal	34	1.33	1.09	0.44	7.32	1.11
Spain	82	1.30	1.09	0.53	6.40	0.80
Sweden	80	1.74	1.28	0.62	9.11	1.44
Switzerland	104	1.90	1.24	0.56	11.82	2.01
United Kingdom	714	2.02	1.26	0.49	37.62	2.92
Total	1716	1.77	1.19	0.44	37.62	2.24

This table presents summary statistics by country of firms' Tobin's Q, which is calculated as the ratio of the book value of assets minus the book value of common equity and deferred taxes plus the market value of common equity to the book value of assets. The Tobin's Q of each firm in the sample is calculated using firm-level data obtained from Bureau Van Dijk's Worldscope database. The sample of firms includes all firms for which we have ownership data.

Table 2
Importance of Firms with Multiple Blockholders

Panel A: All firms

Group of firms	Number of firms (% of total)		Total market capitalization in billions of US dollars (% of total)	
Firms with no controlling owner	263	(15.3)	1540	(35.3)
Firms with one controlling owner	830	(48.4)	1984	(45.4)
Firms with multiple large shareholders	623	(36.3)	842	(19.3)
Total	1716	(100)	4366	(100)

Panel B: Firms with controlling shareholder only

Group of firms	Number of firms (% of total)		Total market capitalization in billions of US dollars (% of total)	
Firms with one controlling owner	830	(57.1)	1984	(70.2)
Firms with multiple large shareholders	623	(42.9)	842	(29.8)
Total	1453	(100)	2826	(100)

Panel C: Number of firms by country and ownership type

Country	Firms with no controlling owner		Firms with one controlling owner		Firms with multiple large shareholders		Total
Austria	1	(2.6)	29	(74.4)	9	(23.1)	39
Belgium	2	(5.0)	26	(65.0)	12	(30.0)	40
Finland	12	(16.7)	26	(36.1)	34	(47.2)	72
France	8	(4.1)	113	(58.2)	73	(37.6)	194
Germany	9	(5.3)	96	(56.8)	64	(37.9)	169
Ireland	9	(19.1)	22	(46.8)	16	(34.0)	47
Italy	1	(1.3)	50	(63.3)	28	(35.4)	79
Norway	7	(11.3)	22	(35.5)	33	(53.2)	62
Portugal	1	(2.9)	23	(67.6)	10	(29.4)	34
Spain	8	(9.8)	36	(43.9)	38	(46.3)	82
Sweden	7	(8.8)	37	(46.3)	36	(45.0)	80
Switzerland	14	(13.5)	55	(52.9)	35	(33.7)	104
United Kingdom	184	(25.8)	295	(41.3)	235	(32.9)	714
Total	263	(15.3)	830	(48.4)	623	(36.3)	1716

This table reports the total number and total market capitalization of firms in the sample with (i) no controlling owner, (ii) one controlling owner, and (iii) multiple large shareholders. Control is defined as 10% of the voting rights or more. Panel A reports summary statistics by ownership structure for all firms in the sample, panel B reports summary statistics by ownership structure for firms with controlling shareholders only, and panel C reports the number of firms (with percentage of country-totals between brackets) for each ownership structure by country.

Table 3
Tobin's Q by Ownership Category

Panel A: Group means, group medians, and nonparametric test of the equality of medians

	# of firms	Average Q	Median Q	Test of difference in medians with ownership category			
				Majority Ownership	Single non-majority blockholder	Multiple blockholders with small dispersion	Multiple blockholders with large dispersion
1. Majority ownership	407	1.78	1.14				
2. Single non-majority blockholder	519	1.61	1.16	0.466			
3. Multiple blockholders with small dispersion in CF rights	277	1.90	1.28	0.010***	0.031**		
4. Multiple blockholders with large dispersion in CF rights	250	1.66	1.15	0.725	0.555	0.010***	
5. Widely held	263	2.03	1.31	0.000***	0.000***	0.547	0.000***
Total	1716	1.77	1.19				

Panel B: Correlations Matrix of Ownership Categories and Other Firm Characteristics

	Sales growth	Log of total assets	Tangibility	Investment ratio	Leverage	Founder
1. Majority ownership	-0.052** (0.017)	-0.012 (0.579)	-0.057*** (0.009)	-0.011 (0.622)	0.000 (0.993)	0.099*** (0.000)
2. Single non-majority blockholder	0.017 (0.451)	-0.019 (0.371)	0.035 (0.108)	0.035 (0.113)	0.013 (0.566)	-0.041 (0.103)
3. Multiple blockholders with small dispersion in CF rights	0.024 (0.264)	-0.077*** (0.000)	-0.031 (0.159)	-0.010 (0.655)	-0.017 (0.439)	-0.011 (0.675)
4. Multiple blockholders with large dispersion in CF rights	-0.005 (0.831)	0.003 (0.897)	-0.001 (0.964)	-0.012 (0.584)	-0.008 (0.697)	0.019 (0.446)
5. Widely held	0.026 (0.227)	0.120*** (0.000)	0.063*** (0.004)	-0.010 (0.665)	0.010 (0.643)	-0.068*** (0.007)

We distinguish firms between 5 distinct ownership categories: 1. Majority ownership; 2. Single non-majority blockholder; 3. Multiple blockholders, each with minority ownership, and small dispersion in CF rights between the two largest blockholders (“CF-1 minus CF-2” less than or equal to 25%); 4. Multiple blockholders, each with minority ownership, and large dispersion in CF rights between the two largest blockholders (“CF-1 minus CF-2” more than 25%); and 5. Widely held (no shareholder owns more than 10% of control rights). Panel A reports the average and median Tobin's Q across ownership groups and the p-values of a nonparametric test of equality of medians between the indicated ownership categories. Panel B shows the correlation between ownership groups and other firm characteristics, with p-values between brackets. Sales growth is the 3-year average lagged sales growth. Tangibility is fixed assets to total assets. Investment ratio is CAPEX to total assets. Leverage is total debt to total assets. Founder indicates whether the founder of the company is on the (management or supervisory) board of the company.

Table 4
Complex Ownership Structures, Family Ownership, and Firm Size

Panel A: Complex Ownership Structures: The Types of the Largest and Second Largest Owners

	Largest shareholder is a family	Largest shareholder is <i>not</i> a family	All firms	Largest shareholder is a family	Largest shareholder is <i>not</i> a family	All firms
	Number of firms			% of total		
Second largest shareholder is:						
Family	307	83	390	70.4	44.6	62.7
State	18	9	27	4.1	4.8	4.3
Widely-held corporation	6	3	9	1.4	1.6	1.4
Widely-held financial	71	59	130	16.2	31.7	20.9
Other type	34	32	66	7.8	17.2	10.6
Total	436	186	622	100	100	100

Panel B: Complex Ownership Structures and Family Ownership

	Largest shareholder is a family	Second largest shareholder is a family	First & second largest shareholders are families	Largest is not a family but the second largest is	Largest is a family but not second largest	First & second largest shareholders not families
Cash-flow-1 minus Cash-flow-2	2.711*	-1.648*	-0.590	-1.931*	4.136*	-2.374
	(0.070)	(0.062)	(0.418)	(0.080)	(0.087)	(0.106)

Panel C: Complex Ownership Structures and Firm Size

	Majority (All firms)	Cash-flow-1 minus Cash-flow-2 (All firms)	Cash-flow-1 minus Cash-flow-2 (Exclude firms if Majority=1)	Cash-flow-1 minus Cash-flow-2 (Exclude firms if Majority=1 or Widely held=1)
Log(total assets)	-0.021***	-1.539***	-0.879***	-0.421**
	(0.009)	(0.000)	(0.000)	(0.050)

Panel A provides information on the types of the largest and second largest shareholders in firms with multiple shareholders and with no majority shareholder. It reports the number and percentage of firms for each combination of large shareholders. Panel B presents partial correlation coefficients (and p-values in parentheses) between cash-flow dispersion (|Cash-flow-1 minus Cash-flow-2|) and dummy variables that identify particular ownership structures. The partial correlation coefficients are based on regressions that condition only on country and industry fixed effects based on the subset of firms with multiple blockholders and where the largest shareholder does not hold a majority stake. Panel C presents similar partial correlation coefficients between ownership structure and firm size, as measured by the logarithm of total firm assets. Majority is a dummy variable that indicates whether the largest shareholder holds a majority stake in the firm or not. Widely held is a dummy variable that indicates whether the firm has no shareholder with more than 10% of control rights. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 5
Valuation and Complex Ownership Structures

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Basic	Cash-flow-2 exceeds Cash- flow-1	Exclude if Cash-flow-2 exceeds Cash-flow-1	Majority and widely- held	Other firm factors	Exclude majority	Exclude majority and widely-held	Multiple blockholders	Multiple blockholders and other firm factors	UK
Cash-flow-1	0.013** (0.006)	0.015** (0.005)	0.015** (0.005)	0.019** (0.007)	0.017* (0.008)	0.017*** (0.005)	0.024*** (0.006)	0.041** (0.017)	0.037 (0.021)	0.037 (0.021)
Control-1 minus Cash-flow-1	-0.007* (0.004)	-0.009** (0.003)	-0.009** (0.003)	-0.007 (0.004)	-0.007 (0.004)	-0.013* (0.007)	-0.007 (0.006)	0.001 (0.008)	-0.012 (0.014)	-0.012 (0.014)
Cash-flow-1 minus Cash-flow-2	-0.007** (0.002)	-0.009*** (0.003)	-0.009*** (0.003)	-0.012*** (0.003)	-0.012** (0.005)	-0.021** (0.008)	-0.023** (0.008)	-0.044** (0.019)	-0.047** (0.017)	-0.044** (0.015)
Sales growth	0.401 (0.307)	0.408 (0.306)	0.381 (0.308)	0.409 (0.306)	0.481** (0.198)	0.646** (0.232)	0.719*** (0.188)	1.017** (0.421)	1.619*** (0.211)	1.603*** (0.219)
Cash-flow-2 exceeds Cash-flow-1		-0.459** (0.200)		-0.380** (0.168)	-0.457* (0.245)	-0.560** (0.239)	-0.473* (0.258)	-0.537** (0.234)	-0.595* (0.304)	-0.607* (0.309)
Cash-flow-2 exceeds Cash-flow-1 * Cash-flow-1 minus Cash-flow-2		0.081** (0.031)		0.082** (0.032)	0.080** (0.027)	0.098*** (0.032)	0.099** (0.033)	0.129*** (0.034)	0.138*** (0.024)	0.138*** (0.023)
Majority				0.081 (0.151)	0.056 (0.111)					
Widely-held				0.296** (0.112)	0.468** (0.161)					
Log of total assets					-0.142 (0.091)				-0.199 (0.117)	-0.198 (0.116)
Asset tangibility					-1.151*** (0.355)				-1.681* (0.833)	-1.673* (0.833)
Investment ratio					2.123*** (0.384)				-0.949 (1.522)	-1.004 (1.580)
Leverage					-0.907 (0.529)				-1.522 (1.029)	-1.540 (1.013)
Founder					0.910 (0.698)				0.563 (0.732)	0.531 (0.755)
Cash-flow-1 minus Cash-flow-2 * UK										-0.011 (0.010)
Observations	1696	1696	1638	1696	1246	1290	1032	521	381	381
R-squared	0.12	0.12	0.12	0.12	0.16	0.14	0.16	0.18	0.24	0.24

This table presents OLS regressions that control for the presence and incentives of the two largest shareholders. The dependent variable is Tobin's Q. The regressions are of the form: $Tobin's\ Q = \alpha X + \beta (Cash-flow-1; Control-1\ minus\ Cash-flow-1; Cash-flow-1\ minus\ Cash-flow-2) + \gamma (Other\ firm\ characteristics) + u$, where u is the error term. All regressions include the cash flow rights of the largest shareholder (Cash-flow-1), the difference between control rights and cash-flow rights of the largest shareholder (Control-1 minus Cash-flow-1), the difference between cash-flow rights of the largest shareholder and cash-flow rights of the second largest shareholder (Cash-flow-1 minus Cash-flow-2), and real sales growth over the preceding three years (Sales growth). Regression (2) controls for whether the controlling owner holds more than 50% of the voting rights (Majority) and whether no shareholder owns more than 10% of control rights (Widely-held). Regression (3) controls for the ratio of fixed assets to total assets (Asset tangibility), the ratio of capital expenditure to assets (Investment ratio), the ratio of total debt to assets (Leverage), and a dummy variable that takes a value of one if the founder of the company is still on the board of the company (Founder). Regression (4) excludes majority-owned firms. Regression (5) excludes majority-owned and widely-held firms. Regression (6) includes only firms with multiple blockholders. Regression (7) adds the firm-level control variables to regression (6). Regression (8) adds an interaction between the Cash-flow-1 minus Cash-flow-2 variable and a dummy variable that takes a value of one if the firm is located in the United Kingdom (UK) to regression (7). All regressions control for country and industry fixed effects with clustering of standard errors at the country level. Standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 6
Valuation and Complex Ownership Structures: Alternative Measures of Dispersion

	(1)	(2)		(3)	(4)	(5)		(6)
	Basic	Dispersion ratio		Multiple blockholders and other firm factors	Basic	Cash-flow ratio		Multiple blockholders and other firm factors
Cash-flow-1	0.007*	0.019**		0.014	0.007*	0.020**		0.015
	(0.004)	(0.008)		(0.011)	(0.003)	(0.008)		(0.012)
Control-1 minus Cash-flow-1	-0.005	0.007		-0.004	-0.004	0.009		-0.002
	(0.007)	(0.009)		(0.014)	(0.007)	(0.009)		(0.015)
Dispersion ratio	-0.334***	-0.882*		-0.867***				
	(0.098)	(0.435)		(0.282)				
Cash-flow ratio					-0.384***	-0.831		-0.884**
					(0.124)	(0.473)		(0.356)
Cash-flow-2 exceeds Cash-flow-1	-0.427	-0.465		-0.702	-0.207	-0.313		-0.469
	(0.394)	(0.427)		(0.401)	(0.372)	(0.459)		(0.487)
Cash-flow-2 exceeds Cash-flow-1 * Dispersion ratio	1.020**	1.409*		1.868***				
	(0.396)	(0.719)		(0.568)				
Cash-flow-2 exceeds Cash-flow-1 * Cash-flow ratio					0.385***	0.829		0.896**
					(0.125)	(0.477)		(0.354)
Sales growth	0.715***	1.008**		1.617***	0.710***	0.991*		1.634***
	(0.187)	(0.445)		(0.243)	(0.189)	(0.460)		(0.266)
Log of total assets				-0.226*				-0.225*
				(0.117)				(0.113)
Asset tangibility				-1.736*				-1.725*
				(0.863)				(0.829)
Investment ratio				-0.946				-0.912
				(1.415)				(1.525)
Leverage				-1.555				-1.572
				(1.009)				(1.060)
Founder				0.514				0.533
				(0.755)				(0.746)
Observations	1032	521		381	1032	521		381
R-squared	0.15	0.17		0.23	0.15	0.17		0.23

This table presents OLS regressions that control for the presence and incentives of the two largest shareholders using alternative measures of the dispersion of cash-flow rights. The dependent variable is Tobin's Q. The regressions are of the form: Tobin's Q = $\alpha X + \beta$ (Growth; Other firm characteristics) + γ (Cash-flow-1; Control-1 minus Cash-Flow-1; Dispersion measure) + u, where u is the error term. All regressions include the cash flow rights of the largest shareholder (Cash-flow-1), the difference between the control rights and the cash-flow rights of the largest shareholder (Control-1 minus Cash-Flow-1), and real sales growth over the

preceding three years (Sales growth). As measure of dispersion of cash-flows, we use the absolute value of the difference between cash-flow-1 and cash-flow-2 divided by the sum of cash-flow-1 and cash-flow-2 (Dispersion ratio) in regressions (1) to (3), and the absolute value of 1 minus the ratio of cash-flow-2 to cash-flow-1 (Cash-flow ratio) in regressions (4) to (6). All regressions exclude firms with majority-ownership and widely-held firms. Regression (2) includes only firms with multiple blockholders. Regression (3) adds the following firm-level control variables to regression (2): the ratio of fixed assets to total assets (Asset tangibility), the ratio of capital expenditure to assets (Investment ratio), the ratio of total debt to assets (Leverage), and a dummy variable that takes a value of one if the founder of the company is still on the (management or supervisory) board of the company (Founder). All regressions control for country and industry fixed effects with clustering of standard errors at the country level. Standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 7
Ownership Types and Shareholder Rights

	(1)	(2)	(3)	(4)
Cash-flow-1	0.017** (0.007)	0.021** (0.008)	0.013** (0.004)	0.019** (0.007)
Control-1 minus Cash-flow-1	-0.009** (0.003)	-0.007 (0.004)	-0.011*** (0.004)	-0.008* (0.004)
Cash-flow-1 minus Cash-flow-2	-0.011** (0.004)	-0.014*** (0.004)	-0.021*** (0.007)	-0.028** (0.011)
Cash-flow-2 exceeds Cash-flow-1	-0.461** (0.194)	-0.404** (0.177)	-0.452** (0.185)	-0.340** (0.140)
Cash-flow-2 exceeds Cash-flow-1 * Cash-flow-1 minus Cash-flow-2	0.087** (0.032)	0.088** (0.033)	0.079** (0.031)	0.081** (0.032)
Sales growth	0.405 (0.308)	0.406 (0.308)	0.400 (0.304)	0.400 (0.305)
Majority		0.084 (0.147)		0.107 (0.171)
Widely held		0.307** (0.116)		0.415** (0.138)
Different type	-0.025 (0.153)	0.047 (0.152)		
Cashflow-1 minus Cash-flow-2 * Different type	-0.007* (0.003)	-0.010** (0.004)		
Cashflow-1 minus Cash-flow-2 * Shareholder rights			0.005** (0.002)	0.005** (0.002)
Observations	1696	1696	1696	1696
R-squared	0.12	0.12	0.13	0.13

This table repeats regressions (2) and (3) of Table 5 but adds an additional interaction terms with the |Cash-flow-1 minus Cash-flow-2| variable. The dependent variable is Tobin's Q at the firm-level. Regressions (1) and (2) include a variable that indicates whether the first and second largest shareholders are of different ownership types (where we consider the following ownership categories: family, state, widely-held financial institution, widely-held corporation, and miscellaneous, with widely-held the default category if there is no controlling shareholder). Regressions (3) and (4) include an interaction with the LLSV (1998) index of shareholder rights in the country (Shareholder rights). Majority is a dummy variable that takes a value of 1 if the principal shareholder holds more than 50 percent of the voting rights. Widely-held indicates whether the firm's ownership is widely held. Sales growth is average real growth in sales over the past 3 years. All regressions control for country and industry fixed effects with clustering of standard errors at the country level. Standard errors in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.