Internet Appendix to

How Are Firms Sold? The Role of Common Ownership

Mohammad (Vahid) Irani, Wenhao Yang, and Feng Zhang

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Table A1. Robustness checks of the baseline results

This table reports additional results to assess the robustness of the regression results in Column (4) of Table 2 Panel B. It presents linear probability regression results, where the dependent variable is a dummy variable that takes the value of 1 if the target firm is sold through auction and 0 if it is sold through negotiations with a single acquirer in Panels B-G, and is a dummy variable that takes the value of 1 if the target is sold through private or public auctions and zero otherwise in Panel A. The only exception is column (5) of Panel B, which presents Logit regression results rather than linear probability regression results. The main independent variable is the average number of common institutional blockholders between the acquirer and its competitors (# Common Owners). See Appendix B in the paper for detailed variable definitions. The regressions control for deal/acquirer/target characteristics and industry (Fama–French 48 industry codes) fixed effects; *t*-statistics are in parentheses; the standard errors are clustered at the industry level. Statistical significance at the 10%, 5%, and 1% levels is denoted by *, **, and ***, respectively. For brevity, the coefficients on the control variables are not reported in panels B to G.

In Panel A, the dependent variable is a dummy variable that takes the value of 1 if the target is sold through private or public auctions and zero otherwise. A firm is privately auctioned if more than one firm signed a confidentiality agreement with the target or showed interest in acquiring the target. It is publicly auctioned if the acquisition bid is preceded or followed by bids from other firms for the same target within 365 calendar days.

In columns (1)–(4) of Panel B, we compute the main independent variable—the average number of common owners—between the acquirer and five potential contesting acquirers based on four alternative industry classifications: the 2-digit SIC industries, the 4-digit SIC industries, the Fama-French 48 industries, and the Text-based Network Industry Classifications (TNIC) of Hoberg and Phillips (2010). Column (5) of Panel B reports the Logit regression results.

In Panel C, we count an institutional investor as a common owner if it owns at least 1%, 2%, 3%, or 10% of the shares of the acquirer and the potential contesting acquirer, rather than the 5% ownership cutoff for the baseline results.

In Panel D, we additionally control for different levels of acquirer and target institutional ownership (IO). Column (1) controls for indicators for acquirer and target IO quartiles. Column (2) controls for the squared terms of acquirer and target IO. Column (3) controls for indicators for acquirer and target IO deciles. Column (4) controls for indicators for various acquirer and target IO ranges.

In Panel E, we replace the main common ownership measure with each of five alternative measures that have been used in literature (Harford, Jenter, and Li (2011), Antón and Polk (2014), He and Huang (2017)). The five alternative measures are: (1) CO_{hjl}, (2) CO_{min}, (3) CO_{avg}, (4) CO_{wavg}, and (5) # Common owners (all peers). For the first four measures, we first identify five competitors in the same three-digit SIC industry with closest market capitalizations to the acquirer as of the quarter before the deal announcement. Then for each acqurier–competitor pair, we compute (1) $\sum_i \min(\alpha^i, \beta^i)$; (2) $\sum_i \frac{\alpha^i \beta^i}{\alpha^i + \beta^i}$; (3) $\sum_i \frac{\alpha^i + \beta^i}{2}$; and (4) $\sum_i \frac{m_\alpha}{m_\alpha + m_\beta} \alpha^i + \frac{m_\beta}{m_\alpha + m_\beta} \beta^i$ across their common institutional blockholders that own at least 5% of the shares of both the acquirer and the competitor, where α^i is the ownership of institutional investor i in the acquirer, β^i is the ownership of institutional investor i in the competitor, and m_α and m_β as market capitalization of the acquirer and the contester. Lastly, we compute the average of these four measures across the five competitors to get the acquirer level measure. The fifth measure (# Common owners (all peers)) is based on Antón and Polk (2014). For each acquirer, we identify all competitors in the same three-digit SIC industry as the acquirer as of the quarter before the deal announcement. For each acquirer–competitor pair, we count the number of common institutional investors that own at least 5% of the shares of both the acquirer and the competitor, and then take the average across its competitors.

In Panel F, we additional control for an indicator for within-industry deal and its interaction with the number of common owners.

In Panel G, we divide common institutional investors into different categories and recompute the number of common owners for each category. Columns (1)-(2) report regression results for the number of active and passive common owners, respectively. We identify ETFs and passive index funds from the CRSP Mutual Fund Database using the index fund flag and the keywords in fund name (including “index”, “S&P”, “DOW”, “Wilshire” and “Russell”). We then manually match these passive funds to the 13F institutions based on fund family names to compute each 13F

institution's passive ownership in a firm. The 13F institution's active ownership in the firm equals its total ownership minus its passive ownership in the firm. Columns (3)-(5) present regression results for the number of dedicated, transient, and quasi-indexing common owners based on the classifications of Bushee (1998).

Panel A. Public and private auction

	(1)	(2)
Dependent variable	Public auction	Private auction
# Common Owners	0.154***	0.118**
	(2.736)	(2.359)
Deal Characteristics		
Acquirer toehold	-0.167***	0.047
	(-2.976)	(0.779)
Same SIC3 industry	-0.039	-0.007
	(-1.596)	(-0.473)
Target defense dummy	-0.023	-0.015
	(-0.497)	(-1.634)
# acquirer-target common owners	0.011	-0.043***
	(0.294)	(-2.707)
Acquirer Characteristics		
Institutional ownership	0.217**	-0.104**
	(2.587)	(-2.512)
Market-to-Book	0.006	0.007
	(0.389)	(0.700)
Ln (Size)	0.022*	-0.002
	(1.930)	(-0.448)
ROA	-0.116	0.080
	(-0.551)	(0.932)
Market leverage	-0.024	0.062
	(-0.213)	(1.004)
Cash holdings	-0.116	0.110**
	(-0.808)	(2.308)
Target Characteristics		
Institutional ownership	0.120**	0.010
	(2.051)	(0.347)
Market-to-Book	-0.033*	0.000
	(-1.856)	(0.022)
Ln (Size)	-0.020	-0.005
	(-0.743)	(-0.700)
ROA	0.017	-0.039
	(0.094)	(-0.568)
Market leverage	0.076	0.019
	(0.706)	(0.370)
Cash holdings	-0.236***	-0.022
	(-3.442)	(-0.397)
Constant	0.215	0.069
	(1.258)	(1.050)
Observations	980	980
Adjusted R-squared	0.084	0.048

Panel B. Alternative industry classifications and alternative model specification

	(1)	(2)	(3)	(4)	(5)
	Industry classifications to identify contesters				Logit
	SIC2	SIC4	FF48	TNIC	regression
# Common owners	0.352***	0.152***	0.351***	0.103***	1.000***
	(3.869)	(3.375)	(4.296)	(2.762)	(3.885)
Controls variables	Y	Y	Y	Y	Y
Observations	980	980	980	789	980
Adjusted/Pseudo R-squared	0.073	0.060	0.075	0.068	0.0610

Panel C. Alternative cutoff levels of common ownership

	(1)	(2)	(3)	(4)
	Common ownership cutoff			
	1%	2%	3%	10%
# Common owners	0.057***	0.094***	0.134***	0.960***
	(4.134)	(3.595)	(4.321)	(3.210)
Controls variables	Y	Y	Y	Y
Observations	980	980	980	980
Adjusted R-squared	0.078	0.081	0.078	0.067

Panel D. Controlling for acquirer and target institutional ownership

	(1)	(2)		(3)		(4)
Dependent variable	Auction		Dependent variable	Auction	Dependent variable	Auction
# Common owners	0.209***	0.208***	# Common owners	0.214***	# Common owners	0.233***
	(4.011)	(4.041)		(3.851)		(4.489)
Acq. IO Quartiles			**Acquirer IO Deciles**		**Acq. IO Ranges**	
1	-0.117**		1	-0.092	[0, 5%]	0.109
	(-2.112)			(-1.040)		(1.000)
2	-0.098*		2	-0.132	(5%, 10%]	-0.169
	(-1.697)			(-1.328)		(-1.376)
3	-0.109**		3	-0.041	(10%, 20%]	-0.072
	(-2.178)			(-0.598)		(-0.871)
Target IO Quartiles			4	-0.069	(20%, 30%]	-0.036
1	-0.102**			(-0.684)		(-0.816)
	(-2.038)		5	-0.099	(30%, 40%]	-0.116*
2	-0.041			(-0.954)		(-1.816)
	(-0.877)		6	-0.075	(40%, 50%]	0.091*
3	-0.109**			(-0.697)		(1.787)
	(-2.394)		7	-0.078	**Target IO Ranges**	
Acquirer IO		-0.224		(-0.805)	[0, 5%]	-0.191
		(-0.572)	8	-0.117		(-1.434)
Acquirer IO squared		0.352		(-1.280)	(5%, 10%]	0.001
		(1.025)	9	0.108		(0.026)
Target IO		0.316		(1.531)	(10%, 20%]	-0.063
		(1.462)	**Target IO Deciles**			(-1.423)
Target IO squared		-0.238	1	-0.151***	(20%, 30%]	0.065
		(-1.126)		(-2.707)		(1.277)
			2	-0.061	(30%, 40%]	0.053
				(-1.251)		(1.019)
			3	0.061	(40%, 50%]	-0.011
				(1.049)		(-0.258)
			4	0.008		
				(0.103)		
			5	-0.060		
				(-0.886)		
			6	-0.042		
				(-0.656)		
			7	-0.143**		
				(-2.251)		
			8	-0.001		
				(-0.017)		
			9	0.032		
				(0.496)		
Controls variables	Y	Y	Controls variables	Y	Controls variables	Y
Observations	980	980	Observations	980	Observations	980
Adjusted R-squared	0.078	0.075	Adjusted R-squared	0.088	Adjusted R-squared	0.081

Panel E. Alternative measures of common ownership

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	Auction					
# Common Owners	0.215***					
	(4.204)					
CO_{hjl}		6.005***				
		(4.604)				
CO_{avg}			2.879***			
			(4.558)			
CO_{min}				3.512***		
				(4.859)		
CO_{wavg}					2.686***	
					(4.440)	
# Common Owners, All Peers						14.553***
						(2.491)
Controls variables	Y	Y	Y	Y	Y	Y
Observations	980	980	980	980	980	980
Adjusted R-squared	0.074	0.076	0.075	0.078	0.074	0.062

Panel F. Within- vs. cross-industry deals

	(1)	(2)	(3)
Dependent variable	Auction		
Sample	Within-industry M&As	Cross-industry M&As	All M&As
# Common owners	0.199**	0.185**	0.219**
	(2.050)	(2.111)	(2.583)
Within-industry deal dummy			-0.047
			(-1.090)
# Common owners			-0.008
* Within-industry dummy			(-0.058)
Controls variables	Y	Y	Y
Observations	445	535	980
Adjusted R-squared	0.080	0.061	0.073

Panel G. Different types of institutional investors

	(1)	(2)	(3)	(4)	(5)
	Common Ownership by active vs. passive investors		Common ownership by Bushee (1998) classification		
	Active	Passive	Dedicated	Transient	Quasi-indexer
# Common owners	00.276**	0.396***	0.223***	0.498***	0.288**
	(2.433)	(3.007)	(2.761)	(3.759)	(2.199)
Controls variables	Y	Y	Y	Y	Y
Observations	980	980	980	980	980
Adjusted R-squared	0.065	0.060	0.073	0.077	0.074

Table A2. The effects of common owners between the acquirer and the target

This table reports linear probability regression results where the dependent variable is the indicator for whether the target firm is sold through auction (private or public), through public auction, or through private auction. A firm is privately auctioned if more than one firm signed a confidentiality agreement with the target and/or showed interest in acquiring the target in the private sale process. It is publicly auctioned if the acquisition bid is preceded or followed by acquisition bids from other firms for the same target within 365 calendar days. The main independent variable is the number of common owners of the acquirer and the target firm with at least 5% ownership in both firms. We control for the deal, acquirer, and target characteristics and industry (Fama-French 48 industries) fixed effects in all regressions. t-statistics are in parentheses; the standard errors are clustered at the industry level. See Appendix B in the paper for detailed variable definition. Statistical significance at the 10%, 5%, and 1% levels is denoted by *, **, and ***, respectively.

	(4)	(5)	(6)
Dependent variable	Auction	Private auction	Public auction
# Acquirer-target common owners	0.060*	0.055	-0.009
	(1.768)	(1.677)	(-0.927)
Deal Characteristics			
Acquirer toehold	-0.127*	-0.159**	0.054
	(-1.742)	(-2.698)	(0.777)
Same SIC3 industry	-0.047	-0.037	-0.006
	(-1.397)	(-1.437)	(-0.379)
Target defense dummy	-0.048	-0.035	-0.024**
	(-0.977)	(-0.744)	(-2.269)
Acquirer Characteristics			
Institutional ownership	0.240***	0.269***	-0.064*
	(3.135)	(3.334)	(-1.780)
Market-to-Book	0.014	0.006	0.007
	(0.887)	(0.431)	(0.697)
Ln (Size)	0.022**	0.022*	-0.002
	(2.179)	(1.979)	(-0.396)
ROA	0.058	-0.085	0.104
	(0.342)	(-0.415)	(1.188)
Market leverage	0.072	0.001	0.082
	(0.617)	(0.011)	(1.311)
Cash holdings	-0.078	-0.116	0.110**
	(-0.653)	(-0.824)	(2.145)
Target Characteristics			
Institutional ownership	0.122**	0.137**	0.022
	(2.342)	(2.619)	(0.705)
Market-to-Book	-0.033**	-0.036**	-0.002
	(-2.138)	(-2.050)	(-0.179)
Ln (Size)	-0.029	-0.023	-0.008
	(-1.213)	(-0.890)	(-1.046)
ROA	-0.019	0.014	-0.041
	(-0.117)	(0.083)	(-0.550)
Market leverage	0.103	0.088	0.028
	(1.064)	(0.846)	(0.508)
Cash holdings	-0.163*	-0.219***	-0.009
	(-1.913)	(-3.086)	(-0.174)
Constant	0.205	0.200	0.057
	(1.247)	(1.168)	(0.814)
Observations	980	980	980
Adjusted R-squared	0.058	0.076	0.013

Table A3. Relative gain and bid premium: target- versus acquirer-initiated deals

This table presents OLS regression results where the dependent variables are the target's relative gain and bid premium. Relative gain is the difference between the target's and the acquirer's abnormal dollar return over days (-1, +1) around deal announcement, divided by the sum of the acquirer's and target's market value of equity 50 trading days prior to the announcement, following Ahern (2012). Bid premium is based on the target's stock price 42 days prior to deal announcement or the target's stock price on the deal initiation day following Eaton, Liu, and Officer (2021). The main independent variables are the average number of common institutional blockholders between the acquirer and its competitors (# Common Owners) and its interaction term with the target-initiated dummy, which takes the value of one if the deal is initiated by the target firm and zero otherwise. In all regressions, we control for industry (Fama-French 48 industries) fixed effects; t-statistics are in parentheses; the standard errors are clustered at the industry level. See Appendix B in the paper for detailed variable definition. Statistical significance at the 10%, 5%, and 1% levels is denoted by *, **, and ***, respectively. We can identify the identity of the deal initiator and the initiation day in SEC filings for 929 of the 980 sample deals with available deal/acquirer/target characteristics, and the offer price (and hence the bid premium) is missing for 22 of these 980 deals.

	(1)	(2)	(3)
Dependent variable	Relative gain	Bid premium	Bid premium, Initiation day
# Common owners	-0.005	-0.038	-0.015
	(-0.470)	(-0.942)	(-0.302)
Target-initiated	-0.011**	-0.136***	-0.134***
	(-2.477)	(-5.215)	(-3.822)
# Common owners	-0.005	0.086*	0.047
* Target-initiated	(-0.427)	(1.744)	(0.543)
Deal Characteristics			
Acquirer toehold	-0.018**	0.010	0.043
	(-2.140)	(0.132)	(0.445)
Same SIC3 industry	-0.000	0.011	0.051
	(-0.096)	(0.445)	(1.491)
Target defense dummy	0.009	0.059*	0.038
	(1.280)	(1.844)	(0.917)
# acq.-target com. owners	-0.003	0.016	0.013
	(-0.410)	(0.665)	(0.403)
Acquirer Characteristics			
Institutional ownership	-0.002	0.021	0.137**
	(-0.146)	(0.465)	(2.269)
Market-to-Book	-0.002	0.015	0.031
	(-0.829)	(0.801)	(1.094)
Ln (Size)	-0.017***	0.015	0.039**
	(-10.770)	(1.099)	(2.365)
ROA	-0.061	0.079	0.174
	(-1.519)	(0.316)	(0.677)
Market leverage	0.013	-0.079	0.109
	(0.559)	(-0.720)	(0.773)
Cash holdings	-0.001	0.011	0.297
	(-0.028)	(0.100)	(1.212)
Target Characteristics			
Institutional ownership	-0.015	-0.082	-0.104
	(-1.137)	(-1.452)	(-1.552)
Market-to-Book	0.002	-0.042***	-0.090***
	(0.711)	(-2.972)	(-4.500)
Ln (Size)	0.012***	-0.151***	-0.299***
	(3.124)	(-8.999)	(-7.599)
ROA	-0.009	-0.147*	-0.439**
	(-0.675)	(-1.804)	(-2.439)
Market leverage	-0.018	0.606***	0.696***
	(-1.138)	(11.291)	(7.076)
Cash holdings	0.017	0.085	0.054
	(0.993)	(0.828)	(0.542)
Constant	0.122***	1.040***	1.616***
	(5.746)	(7.920)	(7.017)
Observations	929	929	908
Adjusted R-squared	0.150	0.181	0.180

Table A4. Acquirer-target combined announcement CARs: target- versus acquirer-initiated deals

This table reports OLS regressions where the dependent variable is acquirer-target combined cumulative abnormal returns (CARs) around deal announcement over various windows: days (-42, +1), (-42, +42), (-63,+1), (-63,+63), and (initiation, +1), where day 0 is the deal announcement day. Daily abnormal returns are computed using the market model with beta estimated over days (-379, -127) before deal announcement. The main independent variables are the average number of common institutional blockholders between the acquirer and its competitors (# Common Owners) and its interaction term with the target-initiated dummy, which takes the value of one if the deal is initiated by the target firm and zero otherwise. We control for industry (Fama-French 48 industries) fixed effects in all regressions; t-statistics are in parentheses; the standard errors are clustered at the industry level. See Appendix B in the paper for detailed variable definition. Statistical significance at the 10%, 5%, and 1% levels is denoted by *, **, and ***, respectively. Columns (1) and (6)-(10) have fewer than 980 observations because we can identify the identity of the deal initiator and the initiation day in SEC filings for only 929 of the 980 sample deals with available deal/acquirer/target characteristics.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Combined CARs					Combined CARs				
Dependent variable	(Initiation, +1)	(-42, +1)	(-42, +42)	(-63, +1)	(-63, +63)	(Initiation, +1)	(-42, +1)	(-42, +42)	(-63, +1)	(-63, +63)
# Common owners	0.029	0.026**	0.042***	0.032*	0.060**	0.058***	0.017	0.046**	0.030	0.070**
	(1.486)	(2.251)	(2.753)	(2.016)	(2.538)	(3.080)	(1.158)	(2.243)	(1.390)	(2.148)
Target-initiated						0.017	-0.002	0.017	0.017*	0.039**
						(1.035)	(-0.201)	(1.294)	(1.859)	(2.175)
# Common Owners						-0.054	0.014	-0.010	-0.003	-0.025
* Target-initiated						(-1.631)	(0.650)	(-0.486)	(-0.102)	(-0.859)
Deal Characteristics										
Acquirer toehold	-0.005	0.041	0.042	0.039	0.062	-0.005	0.037	0.039	0.036	0.061
	(-0.066)	(0.994)	(0.666)	(0.666)	(0.707)	(-0.067)	(0.890)	(0.625)	(0.603)	(0.701)
Same SIC3 industry	0.013	0.001	0.017	0.003	0.012	0.013	0.003	0.020	0.006	0.018
	(0.624)	(0.087)	(1.285)	(0.226)	(0.767)	(0.624)	(0.296)	(1.329)	(0.412)	(0.962)
Target defense dummy	0.007	0.006	0.005	0.007	0.002	0.006	0.012	0.012	0.018	0.016
	(0.276)	(0.492)	(0.218)	(0.350)	(0.065)	(0.252)	(1.098)	(0.595)	(1.011)	(0.619)
# acquirer-target COs	0.016	0.011	-0.003	-0.003	-0.030	0.016	0.009	-0.006	-0.006	-0.035*
	(0.787)	(0.812)	(-0.206)	(-0.166)	(-1.378)	(0.822)	(0.716)	(-0.421)	(-0.391)	(-1.818)
Acquirer Characteristics										
Institutional ownership	-0.061	-0.043*	-0.077**	-0.064**	-0.125***	-0.064	-0.032	-0.060**	-0.045	-0.099***
	(-1.293)	(-1.793)	(-2.611)	(-2.250)	(-3.670)	(-1.345)	(-1.448)	(-2.193)	(-1.667)	(-3.272)
Market-to-Book	-0.019	-0.006	-0.015*	-0.021**	-0.029***	-0.018	-0.010	-0.021**	-0.027***	-0.039***
	(-1.397)	(-0.890)	(-1.906)	(-2.122)	(-2.989)	(-1.355)	(-1.308)	(-2.504)	(-2.786)	(-3.207)
Ln (Size)	-0.015*	-0.013**	-0.006	-0.013*	-0.004	-0.016**	-0.013**	-0.007	-0.013**	-0.006
	(-2.017)	(-2.566)	(-0.856)	(-1.867)	(-0.447)	(-2.139)	(-2.667)	(-1.154)	(-2.065)	(-0.786)
ROA	0.020	0.071	0.154	0.089	0.192	0.027	0.049	0.138	0.068	0.151

	(0.118)	(0.967)	(1.467)	(0.678)	(1.170)	(0.159)	(0.652)	(1.223)	(0.462)	(0.813)
Market leverage	0.126*	0.059*	0.082	0.081*	0.101	0.128*	0.052	0.061	0.060	0.065
	(1.797)	(1.871)	(1.473)	(1.841)	(1.489)	(1.816)	(1.570)	(1.137)	(1.380)	(1.033)
Cash holdings	-0.091	-0.034	-0.026	0.049	0.046	-0.093	-0.032	-0.035	0.053	0.039
	(-1.374)	(-0.955)	(-0.464)	(1.346)	(0.725)	(-1.365)	(-0.857)	(-0.597)	(1.419)	(0.536)
Target Characteristics										
Institutional ownership	0.045	0.007	-0.005	0.021	0.025	0.044	-0.001	-0.007	0.022	0.033
	(1.006)	(0.266)	(-0.120)	(0.675)	(0.581)	(1.002)	(-0.043)	(-0.179)	(0.645)	(0.717)
Market-to-Book	0.002	-0.014**	-0.018	-0.018**	-0.020	0.002	-0.013*	-0.015	-0.015	-0.014
	(0.162)	(-2.257)	(-1.639)	(-2.394)	(-1.616)	(0.151)	(-1.839)	(-1.172)	(-1.611)	(-0.867)
Ln (Size)	-0.043**	-0.008	-0.009	-0.023**	-0.024**	-0.042**	-0.010	-0.007	-0.023**	-0.022*
	(-2.557)	(-1.103)	(-0.871)	(-2.698)	(-2.032)	(-2.525)	(-1.266)	(-0.679)	(-2.481)	(-1.742)
ROA	-0.115	-0.024	-0.040	0.016	-0.009	-0.118	-0.009	-0.030	0.027	0.005
	(-1.085)	(-0.542)	(-0.916)	(0.335)	(-0.123)	(-1.108)	(-0.224)	(-0.615)	(0.591)	(0.068)
Market leverage	0.160**	0.038	0.049	0.050	0.096	0.156**	0.026	0.038	0.036	0.079
	(2.094)	(1.026)	(1.096)	(1.205)	(1.507)	(2.045)	(0.825)	(0.947)	(0.967)	(1.400)
Cash holdings	-0.076	-0.041	-0.068	-0.040	-0.058	-0.074	-0.065*	-0.097**	-0.067	-0.094
	(-0.590)	(-1.251)	(-1.414)	(-0.963)	(-1.022)	(-0.576)	(-2.013)	(-2.035)	(-1.661)	(-1.654)
Constant	0.320**	0.198***	0.151*	0.294***	0.221**	0.315**	0.223***	0.160*	0.306***	0.229**
	(2.543)	(3.472)	(1.717)	(3.907)	(2.311)	(2.485)	(3.840)	(1.846)	(3.878)	(2.280)
Observations	929	980	980	980	980	929	929	929	929	929
Adjusted R-squared	0.024	0.055	0.061	0.052	0.041	0.023	0.062	0.070	0.057	0.050

Table A5. Testing the information-sharing role of common owners

This table reports linear probability regression results for various samples of M&As. The dependent variable is a dummy variable that takes the value of 1 if the target firm is sold through auction and 0 if it is sold through negotiations with a single acquirer. The four subsamples of M&As are those with target R&D intensity of zero (Low-R&D targets; column (1)), with positive target R&D intensity (High-R&D targets; column (2)), with low-tech target firms (column (4)), and with high-tech target firms (column (5)). Target R&D intensity is the ratio of research and development expense to the book value of total assets. The target firm is regarded as in the high-tech sectors if its two-digit SIC code is 28, 35, 36, 38, 48, or 73. The main independent variable is the average number of common owners between the acquirer and five identified potential competing acquirers from the same industry. We control for the deal, acquirer, and target characteristics (see column (4) of Table 2 Panel B for the list of these control variables) and industry (Fama-French 48 industries) fixed effects in all regressions. The standard errors are clustered at the industry level. See Appendix B for detailed variable definition. Statistical significance at the 10%, 5%, and 1% levels is denoted by *, **, and ***, respectively. The sum of the number of observations in columns (1) and (2) and that of columns (3) and (4) are less than the full sample (976) because Stata automatically removes singletons within each Fama-French 48 industry to avoid multicollinearity. There are more singletons in the subsamples than in the whole sample.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	Auction			Auction		
Sample	Low-R&D targets	High-R&D targets	All M&As	Low-tech targets	High-tech targets	All M&As
# Common owners	0.169***	0.226**	0.212***	0.219***	0.171**	0.224***
	(2.804)	(2.475)	(4.060)	(3.699)	(2.331)	(4.040)
R&D intensity			-0.065			
			(-0.226)			
# Common owners			0.064			
* R&D intensity			(0.180)			
						-0.044
Hi-tech target dummy						(-0.969)
						-0.033
# Common owners						(-0.454)
* Hi-tech target dummy						
Controls variables	Y	Y	Y	Y	Y	Y
Observations	602	378	980	720	260	980
Adjusted/Pseudo R-squared	0.055	0.088	0.072	0.068	0.059	0.073

Table A6. Common ownership among acquirers and acquirer announcement returns

This table reports OLS regression results where the dependent variable is the cumulative abnormal returns (CARs) to the acquirer over days (-t, +k), where day 0 is the deal announcement day. Daily abnormal stock returns are computed using the market model, with beta estimated over days (-379, -127) before deal announcement. The main independent variables are: (1) the average number of common institutional blockholders with at least 5% ownership between the acquirer and its competitors (# Common Owners) and (2) Rival Ownership, which is all the acquirer's shareholders' ownership in all industry rivals of the acquirer in the quarter before the deal announcement constructed by Antón et al. (2022). See Appendix B in the paper for detailed variable definitions. The regressions control for industry (Fama–French 48 industry codes) fixed effects; t-statistics are in parentheses; and the standard errors are clustered at the industry level. Statistical significance at the 10%, 5%, and 1% levels is denoted by *, **, and ***, respectively.

	(1)	(2)	(3)	(4)
	Acquirer CARs over			
Dependent variable	(-42, 1)	(-42, 42)	(-42, 1)	(-42, 42)
# Common owners	0.026*	0.044**	0.046**	0.067**
	(1.946)	(2.291)	(2.565)	(2.306)
Rival ownership			-4.449*	-5.280
			(-1.904)	(-1.375)
Deal Characteristics				
Acquirer toehold	0.032	0.027	0.027	0.022
	(0.669)	(0.359)	(0.569)	(0.289)
Same SIC3 industry	-0.003	0.012	-0.004	0.010
	(-0.260)	(0.832)	(-0.382)	(0.725)
Target defense dummy	0.008	0.001	0.004	-0.004
	(0.647)	(0.026)	(0.372)	(-0.170)
# acquirer-target common owners	0.010	-0.004	0.013	0.000
	(0.635)	(-0.197)	(0.888)	(0.021)
Acquirer Characteristics				
Institutional ownership	-0.046*	-0.078**	-0.017	-0.044
	(-1.761)	(-2.433)	(-0.697)	(-1.155)
Market-to-Book	-0.002	-0.010	-0.002	-0.011
	(-0.282)	(-1.259)	(-0.306)	(-1.289)
Ln (Size)	0.004	0.015*	0.006	0.017**
	(0.761)	(2.016)	(1.071)	(2.306)
ROA	0.045	0.126	0.049	0.131
	(0.509)	(1.106)	(0.562)	(1.154)
Market leverage	0.024	0.063	0.022	0.060
	(0.681)	(1.033)	(0.619)	(1.005)
Cash holdings	-0.047	-0.042	-0.043	-0.038
	(-1.024)	(-0.595)	(-0.945)	(-0.531)
Target Characteristics				
Institutional ownership	0.007	-0.005	0.008	-0.004
	(0.279)	(-0.132)	(0.314)	(-0.109)
Market-to-Book	-0.012*	-0.015	-0.012	-0.015
	(-1.736)	(-1.280)	(-1.675)	(-1.260)
Ln (Size)	-0.015*	-0.020	-0.014	-0.019
	(-1.685)	(-1.630)	(-1.579)	(-1.530)
ROA	0.007	0.009	0.005	0.008
	(0.175)	(0.157)	(0.136)	(0.129)
Market leverage	0.045	0.071	0.044	0.070
	(1.044)	(1.388)	(1.015)	(1.362)
Cash holdings	-0.035	-0.064	-0.028	-0.056
	(-1.039)	(-1.428)	(-0.787)	(-1.201)
Constant	0.065	0.004	0.048	-0.016
	(0.984)	(0.037)	(0.778)	(-0.169)
Observations	980	980	980	980
Adjusted R-squared	0.012	0.042	0.015	0.044

Table A7: Replicating the main results of Antón et al. (2022)

This table replicates the key finding of Antón et al. (2022) in column (3) of their Table 8 using their data sample. The model specification, control variables, and fixed effects follow their column (3) of Table 8. The dependent variable is the cumulative average abnormal returns (CAR) to the acquirer over days (-t, +k), where day 0 is the initial bid announcement date. Daily abnormal stock returns are computed using the market model, with beta estimated over days (-379, -127) before deal announcement. Rival Ownership is all the acquirer's shareholders' ownership in all industry rivals of the acquirer in the quarter before the deal announcement. Target Ownership is all the acquirer's shareholders' ownership in the target firm in the quarter before the deal announcement. See Antón et al. (2022) for definitions of the rest of the variables. We thank Antón et al. (2022) for sharing their data.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Dependent variable	Acquirer CAR (-1, 1)			Acquirer CAR (-5, 5)			Acquirer CAR (-42, 1)			Acquirer CAR (-42, 42)			Acquirer CAR (-63, 63)		
Target Ownership	1.602***		1.253**	1.252*		0.875	0.738		0.590	0.902		0.679	1.893		1.198
	(3.008)		(2.471)	(1.933)		(1.422)	(0.648)		(0.541)	(0.504)		(0.400)	(0.761)		(0.517)
Rival Ownership	-2.144**	-1.310		-2.314**	-1.663		-0.909	-0.525		-1.371	-0.902		-4.269	-3.284	
	(-2.485)	(-1.592)		(-2.016)	(-1.527)		(-0.464)	(-0.279)		(-0.492)	(-0.342)		(-1.180)	(-0.984)	
Competing	-0.009	-0.010	-0.008	-0.020**	-0.020**	-0.018**	-0.012	-0.012	-0.011	-0.031	-0.032	-0.031	-0.022	-0.023	-0.020
	(-1.419)	(-1.501)	(-1.243)	(-2.445)	(-2.488)	(-2.298)	(-0.795)	(-0.814)	(-0.763)	(-1.592)	(-1.606)	(-1.568)	(-0.884)	(-0.909)	(-0.804)
All Stock	-0.010*	-0.009*	-0.009*	-0.003	-0.002	-0.002	0.002	0.003	0.003	0.002	0.003	0.003	0.005	0.006	0.007
	(-1.945)	(-1.766)	(-1.793)	(-0.365)	(-0.268)	(-0.251)	(0.191)	(0.222)	(0.214)	(0.117)	(0.143)	(0.142)	(0.207)	(0.249)	(0.267)
All Cash	0.019***	0.018***	0.019***	0.020***	0.020***	0.020***	-0.001	-0.001	-0.001	0.001	0.001	0.002	-0.008	-0.009	-0.008
	(3.990)	(3.869)	(3.992)	(3.185)	(3.127)	(3.186)	(-0.081)	(-0.100)	(-0.080)	(0.094)	(0.078)	(0.095)	(-0.410)	(-0.439)	(-0.407)
Acquirer Characteristics															
Institutional Ownership	-0.013	-0.012	-0.027***	0.001	0.002	-0.014	-0.046	-0.046	-0.052**	-0.032	-0.031	-0.041	-0.039	-0.038	-0.067
	(-1.146)	(-1.053)	(-2.751)	(0.076)	(0.123)	(-0.987)	(-1.531)	(-1.517)	(-1.973)	(-0.811)	(-0.798)	(-1.146)	(-0.769)	(-0.747)	(-1.446)
Market capitalization	0.002	0.001	0.001	0.002	0.001	0.001	0.009	0.008	0.008	0.011	0.010	0.010	0.009	0.008	0.007
	(0.722)	(0.242)	(0.316)	(0.559)	(0.281)	(0.233)	(1.129)	(1.074)	(1.085)	(1.067)	(1.015)	(1.008)	(0.783)	(0.655)	(0.590)
Market-to-book	-0.002	-0.002	-0.002	-0.006**	-0.006**	-0.006**	-0.004	-0.004	-0.004	-0.011	-0.011	-0.011	-0.014	-0.014	-0.014
	(-0.960)	(-0.916)	(-0.958)	(-2.307)	(-2.273)	(-2.303)	(-0.769)	(-0.763)	(-0.769)	(-1.524)	(-1.518)	(-1.523)	(-1.360)	(-1.350)	(-1.361)
Leverage	0.004	0.002	0.004	0.009	0.007	0.009	0.055	0.054	0.055	0.034	0.033	0.034	-0.023	-0.026	-0.024
	(0.313)	(0.166)	(0.303)	(0.443)	(0.367)	(0.436)	(1.442)	(1.424)	(1.441)	(0.633)	(0.616)	(0.632)	(-0.348)	(-0.384)	(-0.351)
ROA	0.048**	0.047**	0.050**	0.057*	0.056*	0.059**	0.055	0.054	0.056	0.137*	0.136*	0.138*	0.120	0.119	0.123
	(2.154)	(2.122)	(2.245)	(1.923)	(1.905)	(2.002)	(0.919)	(0.914)	(0.935)	(1.873)	(1.869)	(1.890)	(1.209)	(1.202)	(1.250)
Annual stock return	-0.001	-0.000	-0.001	-0.014**	-0.014**	-0.014**	-0.056***	-0.056***	-0.056***	-0.120***	-0.120***	-0.120***	-0.169***	-0.169***	-0.169***
	(-0.120)	(-0.087)	(-0.119)	(-2.275)	(-2.262)	(-2.273)	(-5.353)	(-5.350)	(-5.351)	(-8.196)	(-8.188)	(-8.193)	(-9.024)	(-9.013)	(-9.016)
Target Characteristics															
Institutional Ownership	-0.005	0.009	-0.003	-0.017	-0.006	-0.014	0.007	0.013	0.008	-0.021	-0.013	-0.020	-0.030	-0.013	-0.026
	(-0.447)	(0.849)	(-0.258)	(-1.090)	(-0.387)	(-0.935)	(0.253)	(0.549)	(0.290)	(-0.533)	(-0.365)	(-0.498)	(-0.608)	(-0.307)	(-0.522)
Market capitalization	-0.005*	-0.004	-0.005	-0.005	-0.004	-0.005	-0.020**	-0.019**	-0.020**	-0.020*	-0.019*	-0.020*	-0.015	-0.013	-0.014
	(-1.706)	(-1.259)	(-1.588)	(-1.344)	(-1.087)	(-1.252)	(-2.403)	(-2.367)	(-2.391)	(-1.878)	(-1.834)	(-1.859)	(-1.141)	(-1.026)	(-1.088)
Market-to-book	0.001	0.001	0.001	0.002	0.002	0.002	-0.001	-0.001	-0.001	0.003	0.004	0.004	0.004	0.004	0.004
	(0.404)	(0.451)	(0.420)	(0.855)	(0.888)	(0.868)	(-0.110)	(-0.102)	(-0.107)	(0.491)	(0.500)	(0.494)	(0.368)	(0.381)	(0.375)
Leverage	-0.005	-0.006	-0.006	-0.001	-0.001	-0.002	-0.040	-0.040	-0.041	-0.058	-0.058	-0.058	-0.052	-0.052	-0.053
	(-0.491)	(-0.513)	(-0.544)	(-0.059)	(-0.069)	(-0.097)	(-1.381)	(-1.385)	(-1.391)	(-1.461)	(-1.465)	(-1.468)	(-0.968)	(-0.975)	(-0.989)
ROA	-0.013	-0.015	-0.014	-0.008	-0.009	-0.009	-0.019	-0.020	-0.020	0.014	0.013	0.013	-0.025	-0.027	-0.027
	(-1.043)	(-1.132)	(-1.114)	(-0.407)	(-0.461)	(-0.459)	(-0.521)	(-0.538)	(-0.533)	(0.288)	(0.272)	(0.276)	(-0.420)	(-0.444)	(-0.449)

Annual stock return	0.003	0.004	0.003	-0.002	-0.002	-0.002	-0.008	-0.008	-0.008	-0.016	-0.016	-0.016	-0.012	-0.012	-0.012
	(0.804)	(0.882)	(0.776)	(-0.385)	(-0.336)	(-0.409)	(-0.874)	(-0.861)	(-0.880)	(-1.291)	(-1.279)	(-1.299)	(-0.749)	(-0.729)	(-0.766)
Relative Size Decile Dummies	-0.002	-0.002	-0.002	-0.001	-0.002	-0.001	0.005	0.005	0.005	0.003	0.003	0.003	-0.002	-0.002	-0.002
	(-1.264)	(-1.389)	(-1.259)	(-0.611)	(-0.688)	(-0.610)	(1.146)	(1.125)	(1.146)	(0.604)	(0.583)	(0.604)	(-0.303)	(-0.346)	(-0.303)
Constant	0.019	0.020	0.023	0.021	0.021	0.025	0.050	0.050	0.051	0.045	0.046	0.048	0.104	0.105	0.111
	(1.235)	(1.273)	(1.472)	(0.916)	(0.940)	(1.097)	(1.108)	(1.117)	(1.154)	(0.759)	(0.767)	(0.802)	(1.470)	(1.484)	(1.577)
Observations	1,763	1,763	1,763	1,763	1,763	1,763	1,763	1,763	1,763	1,763	1,763	1,763	1,763	1,763	1,763
R-squared	0.137	0.131	0.134	0.114	0.112	0.112	0.110	0.110	0.110	0.180	0.180	0.180	0.198	0.197	0.197
SIC2 and Year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Cluster ACQ	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

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