Internet Appendix for

Deal Initiation in Mergers and Acquisitions

Journal of Financial and Quantitative Analysis

December 2018

Ronald W. Masulis

Australian School of Business, University of New South Wales

Serif Aziz Simsir

Sabanci School of Management, Sabanci University

Table A-1. Predicting Target-Initiated Deals: Interaction of Hypotheses

This table presents the results of probit regressions. The dependent variable is TARGET_INITIATED, which takes a value of 1 if the deal is classified as target-initiated, and 0 if bidder-initiated. We draw our sample from the SDC database using the following restrictions: deal value is greater than $5 million, both acquirer and target are public companies located in the United States and they are not finance or utility firms, form of the transaction is either merger or acquisition of majority interest, the deal status is completed, and the deal announcement date falls between Jan. 1, 1997 and Dec. 31, 2012. This sample is then matched with the CRSP and Compustat databases. Deal initiation data come from the SEC filings of the merging firms. Due to space limitations, the construction of the control variables is explained in Appendix C of the paper. z-values are in parentheses, below the reported coefficients. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)
VARIABLES	TARGET_ INITIATED	TARGET_ INITIATED	TARGET_ INITIATED	TARGET_ INITIATED
ALTMANS_Z_SCORE	-0.0017	-0.0003	-0.0019	-0.0022
	(-0.300)	(-0.066)	(-0.351)	(-0.391)
CHANGE_IN_ROA_OVER_PAST_ 3_YEARS	-0.047	-0.112	-0.125*	-0.131*
	(-0.552)	(-1.545)	(-1.771)	(-1.858)
BHAR_OVER_PAST_1_YEAR	-0.123	-0.131	-0.154*	-0.156*
	(-1.497)	(-1.609)	(-1.877)	(-1.905)
SA_INDEX	0.348***	0.281***	0.327***	0.330***
	(3.447)	(2.721)	(3.252)	(3.284)
INDUSTRY_SHOCK_INDEX	0.057	0.063	0.139	0.071
	(0.528)	(0.577)	(1.206)	(0.682)
2001_ECONOMIC_RECESSION	0.188	1.863**	0.266**	0.257**
	(1.528)	(2.387)	(2.278)	(2.203)
CHANGE_IN_ROA_OVER_PAST_3_ YEARS x 2001_ECONOMIC_RECESSION	-0.248*			
	(-1.729)			
SA_INDEX x 2001_ECONOMIC_RECESSION		0.562**		
		(2.084)		
ALTMANS_Z_SCORE x INDUSTRY_SHOCK_INDEX			-0.017**	
			(-2.100)	
BHAR_OVER_PAST_1_YEAR x INDUSTRY_SHOCK_INDEX				-0.269*
				(-1.803)
Constant	0.702*	0.501	0.608	0.632*
	(1.864)	(1.305)	(1.616)	(1.684)
No. of obs.	1,072	1,072	1,072	1,072
LR chi-square statistic	45.62	49.23	48.28	47.91
Prob>LR chi-square	0.000	0.000	0.000	0.000
Industry dummies	Yes	Yes	Yes	Yes
Same controls as in Table 4	Yes	Yes	Yes	Yes

Table A-2. OLS Model without Key Explanatory Variables

This table presents results of the OLS regressions without the financial and competitive weakness, financial constraints and the industry and economic shocks variables. We draw our sample from the SDC database using the following restrictions: deal value is greater than $5 million, both acquirer and target are public companies located in the United States and they are not finance or utility firms, form of the transaction is either merger or acquisition of majority interest, the deal status is completed, and the deal announcement date falls between Jan. 1, 1997 and Dec. 31, 2012. This sample is then matched with the CRSP and Compustat databases. Deal initiation data come from the SEC filings of the merging firms. TARGET_CAR (−2, +2) is the abnormal returns experienced by target firms over the (-2, +2) period. TARGET_CAR (−63, +2) accumulates abnormal returns over the (-63, +2) period. The normal returns are calculated using the market model with an estimation window of (-316, -64). BID_PREMIUM is the offer price divided by the target stock price 63 trading days before the announcement of the merger, minus 1. The DEAL_VALUE_TO_EBITDA variable is the ratio of the deal value to the EBITDA value minus the average of the deal value to the EBITDA value of the group of benchmark deals. TARGET_INITIATED is 1 if the deal is classified as target-initiated, and 0 if bidder-initiated. Due to space limitations, the construction of deal and financial characteristics of the merging firms are explained in Appendix C of the paper. t-values are in parentheses, below the reported coefficients. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Regressions include year and industry dummies (not reported).

	(1)	(2)	(3)	(4)
VARIABLES	TARGET_CAR (−2, +2)	TARGET_CAR (−63, +2)	BID_PREMIUM	DEAL_VALUE_TO_EBITDA
TARGET_INITIATED	-0.088**	-0.065***	-0.078***	-0.608**
	(-2.469)	(-4.224)	(-3.233)	(-2.175)
PERCENT_CASH	-0.002	0.063***	0.072*	1.166***
	(-0.040)	(2.677)	(1.949)	(2.606)
TENDER	0.021	0.072***	0.067**	-0.712*
	(0.490)	(3.149)	(2.058)	(-1.872)
ASSET_RELATEDNESS	0.073**	0.018	0.028	0.381
	(2.253)	(1.154)	(1.137)	(1.510)
ACQUIRER_TERMINATION_FEE	1.593	-0.406	0.931	-8.546
	(1.367)	(-0.975)	(1.290)	(-0.950)
TARGET_TERMINATION_FEE	3.451***	0.223	1.468***	5.235
	(5.538)	(1.461)	(4.975)	(1.112)
TOEHOLD	0.650	-0.217	0.342	2.058
	(1.216)	(-1.156)	(1.149)	(0.611)
ln(RELATIVE_SIZE)	-0.057***	-0.028***	-0.064***	-0.033
	(-5.899)	(-5.292)	(-8.206)	(-0.326)
ACQUIRER_TOBINS_Q	-0.013	-0.003	-0.016**	0.411***
	(-1.567)	(-0.826)	(-2.067)	(3.656)
ACQUIRER_ROA	-0.131	-0.045	-0.275**	-6.418***
	(-0.896)	(-0.669)	(-2.535)	(-2.973)
Constant	0.145*	0.054	0.030	-0.227
	(1.757)	(1.631)	(0.557)	(-0.390)
No. of obs.	1,177	1,217	1,217	524
Adj. R^2	0.161	0.154	0.180	0.085
Year & Industry dummies	Yes	Yes	Yes	Yes

Table A-3. Robustness Tests: The Effect of In-Play Target Firms

This table presents the results of the OLS and the self-selection regressions. The dependent variables are BID_PREMIUM (column 1), TARGET_CAR (−2, +2) (column 2), TARGET_CAR (−63, +2) (column 3) and DEAL_VALUE_TO_EBITDA (column 4). Using the hand-collected dataset provided in Mulherin and Simsir (2015), we identify and discard deals having merger-related events prior to the main deal announcement date (such as merger rumors, retention of investment banks by targets, bid solicitations, among others). These early dates differ more than two calendar days from the "Original Date Announced" field in SDC, which are already captured by the premium measures used in the paper. Mulherin and Simsir's dataset covers the 2000-2010 period, hence we report our results for the entire period (Panels A and C), as well as the 2000-2010 period (Panels B and D). We draw our sample from the SDC database using the following restrictions: deal value is greater than $5 million, both acquirer and target are public companies located in the United States and they are not finance or utility firms, form of the transaction is either merger or acquisition of majority interest, the deal status is completed, and the deal announcement date falls between Jan. 1, 1997 and Dec. 31, 2012. This sample is then matched with the CRSP and Compustat databases. Deal initiation data come from the SEC filings of the merging firms. TARGET_CAR (−2, +2) is the abnormal returns to the target firms over the (-2, +2) period. TARGET_CAR (−63, +2) accumulates abnormal returns over the (-63, +2) period. The normal (expected) returns are calculated using the market model with an estimation window of (-316, -64). BID_PREMIUM is offer price divided by target stock price 63 trading days before the announcement of the merger, minus 1. The DEAL_VALUE_ TO_EBITDA variable is the ratio of the deal value to the EBITDA value minus the average of the deal value to the EBITDA value of the group of benchmark deals. TARGET_INITIATED is 1 if the deal is classified as target-initiated, and 0 if bidder-initiated. TARGET_PRIVATE_INFORMATION is the inverse Mill's ratio. Due to space limitations, the construction of control variables is explained in Appendix C. t-values are in parentheses, below the reported coefficients. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)
Panel A. OLS regressions: entire period	BID_PREMIUM	TARGET_CAR (−2, +2)	TARGET_CAR (−63, +2)	DEAL_VALUE_TO_EBITDA
TARGET_INITIATED	-0.127***	-0.0677***	-0.0968***	-0.474
	(-3.286)	(-3.840)	(-3.782)	(-1.521)
No. of obs.	946	976	976	427
Adj. R^2	0.175	0.178	0.288	0.129
Same controls as in Table 5	Yes	Yes	Yes	Yes
Panel B. OLS regressions: 2000-2010 period	BID_PREMIUM	TARGET_CAR (−2, +2)	TARGET_CAR (−63, +2)	DEAL_VALUE_TO_EBITDA
TARGET_INITIATED	-0.124**	-0.0402	-0.0846**	-1.529***
	(-2.171)	(-1.641)	(-2.303)	(-2.724)
No. of obs.	518	537	537	206
Adj. R^2	0.186	0.214	0.293	0.157
Same controls as in Table 5	Yes	Yes	Yes	Yes
Panel C. Heckman regressions: entire period	BID_PREMIUM	TARGET_CAR (−2, +2)	TARGET_CAR (−63, +2)	DEAL_VALUE_TO_EBITDA
TARGET_PRIVATE_ INFORMATION	-0.0786***	-0.0411***	-0.0594***	-0.279
	(-3.537)	(-3.910)	(-3.882)	(-1.62)
No. of obs.	946	976	976	427
Adj. R^2	0.176	0.177	0.288	0.139
Same controls as in Table 7	Yes	Yes	Yes	Yes
Panel D. Heckman regressions: 2000-2010 period	BID_PREMIUM	TARGET_CAR (−2, +2)	TARGET_CAR (−63, +2)	DEAL_VALUE_TO_EBITDA
TARGET_PRIVATE_ INFORMATION	-0.0800**	-0.0239	-0.0524**	-0.922***
	(-2.549)	(-1.642)	(-2.452)	(-3.04)
No. of obs.	518	537	537	206
Adj. R^2	0.187	0.214	0.293	0.180
Same controls as in Table 7	Yes	Yes	Yes	Yes

Table A-4. Robustness Tests: Target CAR's Estimated over (-126, +2)

This table presents results of the OLS and Heckman regressions. The dependent variable is TARGET_CAR (−126, +2). We draw our sample from the SDC database using the following restrictions: deal value is greater than $5 million, both acquirer and target are public companies located in the United States and they are not finance or utility firms, form of the transaction is either merger or acquisition of majority interest, the deal status is completed, and the deal announcement date falls between Jan. 1, 1997 and Dec. 31, 2012. This sample is then matched with the CRSP and Compustat databases. Deal initiation data come from the SEC filings of the merging firms. TARGET_CAR (−126, +2) is the abnormal returns to the target firms accumulated over the (-126, +2) period. The normal (expected) returns are calculated using the market model with an estimation window of (-316, -126). TARGET_INITIATED is 1 if the deal is classified as target-initiated, and 0 if bidder-initiated. TARGET_PRIVATE_INFORMATION is the inverse Mill's ratio. t-values are in parentheses, below the reported coefficients. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	(1) - OLS	(2) - OLS	(3) - Heckman
	TARGET_CAR (−126, +2)	TARGET_CAR (−126, +2)	TARGET_CAR (−126, +2)
TARGET_INITIATED	-0.122***	-0.104***	
	(-3.375)	(-3.064)	
TARGET_PRIVATE_ INFORMATION			-0.0749***
			(-3.578)
No. of obs.	1,037	1,216	1,037
Adj. R^2	0.285	0.200	0.300
Same controls as in Table 5	Yes		
Same controls as in Table A-2		Yes	
Same controls as in Table 7			Yes

Table A-5. Multivariate Analysis of Target Premiums: Abnormal Return Estimations Based on "Date Announced" Field

This table presents the results of the OLS and the self-selection regressions. The dependent variables are BID_PREMIUM (column 1), TARGET_CAR (−2, +2) (column 2), TARGET_CAR (−63, +2) (column 3) and TARGET_CAR (−126, +2) (column 4). All variables are estimated using the event dates provided in SDC's "Date Announced" field. We draw our sample from the SDC database using the following restrictions: deal value is greater than $5 million, both acquirer and target are public companies located in the United States and they are not finance or utility firms, form of the transaction is either merger or acquisition of majority interest, the deal status is completed, and the deal announcement date falls between Jan. 1, 1997 and Dec. 31, 2012. This sample is then matched with the CRSP and Compustat databases. Deal initiation data come from the SEC filings of the merging firms. TARGET_CAR (−2, +2) is the abnormal returns to the target firms over the (-2, +2) period. TARGET_CAR (−63, +2) accumulates abnormal returns over the (-63, +2) period. The normal (expected) returns are calculated using the market model with an estimation window of (-316, -126). To prevent an estimation bias that may arise due to the stock price movements around early dates, we define the estimation window with respect to the "Original Date Announced" field in SDC. BID_PREMIUM is offer price divided by target stock price 63 trading days before the announcement of the merger, minus 1. TARGET_INITIATED is 1 if the deal is classified as target-initiated, and 0 if bidder-initiated. TARGET_PRIVATE_INFORMATION is the inverse Mill's ratio. t-values are in parentheses, below the reported coefficients. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. Regressions include year and industry dummies (coefficients not reported).

	(1)	(2)	(3)	(4)
Panel A. OLS regressions: Event date is "Date Announced"	BID_PREMIUM	TARGET_CAR (−2, +2)	TARGET_CAR (−63, +2)	TARGET_CAR (−126, +2)
TARGET_INITIATED	-0.131***	-0.0725***	-0.111***	-0.139***
	(-3.617)	(-4.424)	(-4.577)	(-3.448)
No. of obs.	1,005	1,037	1,037	1,005
Adj. R^2	0.177	0.175	0.297	0.324
Same controls as in Table 5	Yes	Yes	Yes	Yes
Year & Industry dummies	Yes	Yes	Yes	Yes
Panel B. Heckman regressions: Event date is "Date Announced"	BID_PREMIUM	TARGET_CAR (−2, +2)	TARGET_CAR (−63, +2)	TARGET_CAR (−126, +2)
TARGET_PRIVATE_ INFORMATION	-0.0813***	-0.0443***	-0.0685***	-0.0854***
	(-3.873)	(-4.436)	(-4.721)	(-3.583)
No. of obs.	1,005	1,037	1,037	1,005
Adj. R^2	0.178	0.175	0.297	0.324
Same controls as in Table 7	Yes	Yes	Yes	Yes
Year & Industry dummies	Yes	Yes	Yes	Yes

Table A-6. Information Asymmetry Factor

This table presents results of a factor analysis used for creating the information asymmetry factor. We draw our sample from the SDC database using the following restrictions: deal value is greater than $5 million, both acquirer and target are public companies located in the United States and they are not finance or utility firms, form of the transaction is either merger or acquisition of majority interest, the deal status is completed, and the deal announcement date falls between Jan. 1, 1997 and Dec. 31, 2012. This sample is then matched with the CRSP and Compustat databases. Deal initiation data come from the SEC filings of the merging firms. Variable definitions are described in Appendix C of the paper. The factor analysis procedure produces four factors that have positive eigenvalues. Among the four factors, the first factor has the largest eigenvalue that is significantly greater than one, suggesting that the first factor should be retained as the information asymmetry factor (Kaiser criterion). The average Kaiser-Meyer-Olkin (KMO) statistics of 0.679 suggest that the overall sampling adequacy of the factor analysis is satisfied. The factor loadings for a target's idiosyncratic volatility, R&D intensity, abnormal accruals, analyst forecast dispersion, analyst forecast error and the distance between merging firm headquarters are positive, while the factor loadings for a target's book value of assets, asset tangibility, number of acquirer advisors and acquirer advisor quality are negative. The signs of the information asymmetry measures are consistent with theoretical predictions. In particular, the information asymmetry factor is expected to have a positive association with a target's idiosyncratic volatility, R&D intensity, abnormal accruals, analyst forecast dispersion, analyst forecast error and the distance between merging firm headquarters and a negative association with the remaining variables. The factors having negative eigenvalues are not reported in the table. KMO stands for the Kaiser-Meyer-Olkin statistics.

	predicted correlation with information asymmetry	Factor 1	Factor 2	Factor 3	Factor 4	KMO
Target idiosyncratic volatility	+	0.199	-0.056	-0.017	-0.066	0.811
Target analyst forecast dispersion	+	0.326	0.362	0.028	0.158	0.592
Target analyst forecast error	+	0.270	0.313	-0.070	-0.142	0.604
Target abnormal accruals	+	0.049	-0.063	0.141	0.135	0.757
Distance between headquarters	+	0.044	-0.058	0.134	-0.174	0.741
Target R&D expenses	+	0.044	-0.043	0.135	0.176	0.637
Target book value of total assets	-	-0.250	0.303	-0.084	-0.024	0.716
Target tangibility	-	-0.093	0.138	-0.243	0.078	0.705
Number of acquirer advisors	-	-0.122	0.201	0.219	0.026	0.737
Acquirer advisor quality	-	-0.096	0.162	0.280	-0.059	0.691
KMO overall						0.679
Eigenvalue		2.122	1.191	0.317	0.103	