

Internet appendix to

“Target insiders’ preferences when trading before takeover announcements: deal completion probability, premium and deal characteristics”

(not for publication)

This appendix presents supplementary results not included in the main body of the paper.

Appendix I.A Three examples of pre-public selling negotiations

This section provides extractions from the ‘Background of the Deal’ section of filings recovered from the EDGAR filing collection provided by the SEC for three selling/target companies to illustrate the information dissemination and insiders involved during the pre-public negotiations.

Case 1, Cogdell Spencer Inc: The members of the board of directors are involved in this target initiated deal from the decision to sell. The signing of confidentiality agreements is a commitment on the side of bidders and indicates that a sale of the company is becoming a reality:

As part of its ongoing consideration and evaluation of the Company’s long-term prospects and strategies, the Company’s board of directors and senior management have regularly reviewed and assessed the Company’s business strategies and objectives, including strategic opportunities and challenges, all with the goal of enhancing stockholder value.

At its regularly scheduled meeting held on November 2 and 3, 2011, with management and representatives of the Company’s outside legal counsel, Alston&Bird, and Citi present, the board reviewed management’s assessment of the Company’s current challenges, opportunities, and alternative strategies and the status of the Company’s forward-looking business plan. The board discussed with Citi on a preliminary basis the Company’s liquidity position and various scenarios, including an equity capital raise and funding of development projects through joint ventures, and the potential financial impact of continued limited access to capital. Taking into consideration the Company’s

high leverage, liquidity position and limited access to equity capital, the board concluded that a sale of the Company should be considered as a way to maximize value for stockholders. The board then reviewed with management, Alston&Bird and Citi sale process alternatives, including a negotiated sale to a single party, a controlled process involving a select number of potential acquirers, and a fully-disclosed public auction. Following an executive session of the independent directors, the board authorized the commencement of a confidential process to determine the potential interest of a select number of potentially interested parties, including seven strategic buyers (including Ventas) and five financial sponsors that the board, in consultation with management and Citi, deemed most likely to have significant interest in, and ability to consummate, an acquisition of the Company.

Beginning on November 16, 2011, prospective bidders were contacted to invite them to enter into non-disclosure agreements. Eight prospective buyers executed non-disclosure agreements with the Company and received access to the Company's due diligence materials.

On December 9, 2011, in accordance with the Company's instructions, Ventas and one other strategic bidder, which we refer to as the Competing Bidder, submitted written indications of interest.

On December 16, 2011, Ventas submitted its written proposal to acquire the Company for \$4.60 per share, subject to various assumptions regarding liabilities of the Company and the terms of the disposition of the Erdman business. Together with its bid, Ventas submitted its initial revisions to the draft merger agreement. Notwithstanding its initial indication of interest at \$5.25, the Competing Bidder declined to submit a written proposal.

On December 24, 2011, the Company and Ventas executed the merger agreement, and the Company and the Erdman buyer executed the Erdman purchase agreement. Prior to market open on December 27, 2011, the proposed transactions were publicly announced.

Case 2, SuccessFactors Inc: The members of the board of directors are involved immediately

after an approach from a prospective bidder. Specific terms of a potential acquisitions follow only after a confidentiality agreements are signed:

On September 27, 2011, Mr. McDermott, SAP AG's Co-Chief Executive Officer, met with Mr. Dalgaard, the Chief Executive Officer of the Company, at the Company's offices to discuss a possible acquisition of the Company by SAP AG. This meeting was arranged at the request of Mr. McDermott. During this discussion, neither Mr. McDermott nor Mr. Dalgaard proposed or discussed specific terms of a potential acquisition. Following this discussion, Mr. Dalgaard spoke with each of the other members of the Board regarding the meeting that had taken place between SAP AG and Mr. Dalgaard earlier on the same day.

On September 29, 2011, James Hagemann Snabe, SAP AG's Co-Chief Executive Officer, conducted a conference call with Mr. Dalgaard to discuss the potential for an acquisition of the Company by SAP AG. During this conference call, neither Mr. Snabe nor Mr. Dalgaard proposed or discussed specific terms of a potential acquisition.

On September 30, 2011, the Board held a telephonic meeting to discuss the meeting and conference call between a representative of SAP AG and Mr. Dalgaard that had taken place on September 27, 2011 and September 29, 2011, respectively. The Board asked Mr. Dalgaard to continue to keep the Board promptly apprised of further discussions and developments between the Company's management and representatives of SAP AG.

On October 21, 2011, the Company and SAP AG executed the Mutual Non-Disclosure Agreement regarding the protection of information exchanged between the parties with respect to a potential transaction. Later on October 21, 2011, Mr. Dalgaard and Mr. Mackey had a telephone conversation in which Mr. Mackey stated that SAP AG would submit a non-binding indication of interest to the Company on October 24, 2011.

On October 24, 2011, SAP AG submitted a non-binding written indication of interest to the Company, contemplating an all-cash transaction at a price of \$34 per share of Common Stock. Following receipt of SAP AG's non-binding written indication of interest, the Board convened a telephonic meeting on October 24, 2011 and discussed

the terms of the proposal and the need to retain an investment bank to assist the Company in the evaluation of the proposal.

On October 28, 2011, the Board held a meeting. Representatives of Morgan Stanley discussed with the Board an overview of SAP AG's strategy and its prior large acquisitions, as well as potential response strategies available to the Board and preliminary data regarding the valuation of the Company and certain other strategic alternatives. The Board then approved the formal retention of Morgan Stanley as the Company's financial advisor to advise the Board in connection with potential strategic transactions. During the course of the meeting, the Board discussed SAP AG's indication of interest and found the proposed purchase price of \$34 per share of Common Stock to be insufficient, but indicated its willingness to further discuss a potential transaction with SAP AG and to provide SAP AG with limited access to due diligence information to assist SAP AG to formulate a new proposal at a higher price . . .

On November 9, 2011, the Company received a second non-binding written indication of interest from SAP AG, with a proposed purchase price of \$37 per share of Common Stock in cash, and a separate request from SAP AG that the Company enter into exclusive negotiations with SAP AG for a period of 30 days. The Board convened a telephonic meeting that day to discuss the terms of the revised indication of interest. During the Board meeting, the Board determined that the \$37 per share of Common Stock purchase price proposed by SAP AG was insufficient for the Company to consider entering into exclusive negotiations with SAP AG. Following this discussion, the Board authorized Mr. Dalgaard to engage in further negotiations with SAP AG with regard to the price and to inform SAP AG that the Company would be willing to enter into exclusive negotiations if SAP AG increased its price to \$40.00 per share.

On November 11, 2011, the Company received from SAP AG a third written non-binding indication of interest to acquire all of the outstanding shares of Common Stock for a purchase price of \$40.00 per share in cash. Also on November 11, 2011, the Company's counsel negotiated and the Company and SAP AG executed the Exclusivity Agreement, which provided for an exclusivity period extending through November 22, 2011.

On December 2, 2011 the parties and their advisors finalized the Merger Agreement and between December 2 and December 3, 2011, the parties and their advisors finalized the related documentation to the Merger Agreement. The parties agreed to a termination fee of 3.0% of the equity value of the transaction, or \$112.5 million.

On the evening of December 2, 2011, the Board convened a meeting at the offices of Fenwick&West in San Francisco. Representatives of Morgan Stanley reviewed with the Board its analysis of the \$40 per share of Common Stock consideration and delivered to the Board an oral opinion concluding that the consideration of \$40.00 per share in cash was fair from a financial point of view to holders of shares of Common Stock. The Board then engaged in deliberations regarding the proposed acquisition. Upon concluding these deliberations, the Board unanimously adopted resolutions that determined and declared that the transactions contemplated by the Merger Agreement were advisable and fair to, and in the best interests of, the Company and its stockholders, approved and declared advisable the Merger Agreement and recommended that the Company's stockholders accept the Offer, tender their shares of Common Stock to the Purchaser in the Offer, and adopt the Merger Agreement. The Board unanimously authorized the Company to execute and deliver the Merger Agreement.

On December 3, 2011, the Supervisory Board of SAP AG approved the acquisition of the Company as contemplated by the Merger Agreement. The Company and SAP AG then executed the Merger Agreement. On that same date, the Company and SAP AG issued a joint press release announcing the signing of the Merger Agreement and the transactions contemplated thereby.

Case 3, WJ Communications Inc: This example illustrates a lengthy selling process with an initial unsolicited bid that is not pursued. The company instead organizes a formal auction with 46 invited bidders. The board of directors and management are fully informed from the beginning and at the center of the decision process. The odds that the company would eventually be sold increases significantly when the financial advisor contacts potential bidders and 15 of them sign confidentiality agreements, confirming that they are seriously interested in bidding:

TWP, the Company's financial advisor, was contacted in July 2007, on an unsolicited basis, by a third party about the possibility of acquiring the Company. On July 30, 2007, the third party submitted a preliminary non-binding indication of interest, subject to a number of conditions and due diligence, to acquire the Company at a price of \$2.25 per share, in large part, on the Company's public earnings guidance at the time. On August 2, 2007, the Company reported second quarter results and provided guidance for the third quarter of 2007 which was lower than previous analyst estimates.

On August 4, 2007, the board discussed the unsolicited acquisition proposal and authorized Mr. Bruce Diamond, the Company's Chief Executive Officer, to meet with the chief executive officer of the third party that made the unsolicited proposal.

On August 20, 2007, the third party revised its preliminary non-binding indication of interest to reflect a range of \$2.00 to \$2.25 per share to acquire the Company. On August 23, 2007, management internally revised its forecast further to provide for lower expectations for revenue going forward.

On August 27, 2007, the board discussed the revised indication of interest from the third party and the lowered internal guidance that had not been made available to such party. Following a lengthy discussion, the board determined to not pursue the non-binding proposal on these terms and conditions, but expressed a desire to maintain an active dialogue with such third party going forward.

As a result of the Company board's assessment of the semiconductor industry, market and business environment generally, as well as the Company's recent financial performance, the Company determined to formally engage TWP as its financial advisor, to assist in the exploration of strategic options that may be available to, and in the best interest of, the Company and its stockholders, including a sale of the Company. On October 10, 2007, the Company entered into an engagement letter with TWP.

On October 10, 2007, after market close, the Company announced lower than expected results for the third quarter due to various operational challenges and indicated that based on customer indications overall demand in the fourth quarter of 2007 would again be lower. The price of the Company's stock closed at \$0.91 per share on October 11, 2007

down from \$1.20 the day before. At that time, the Company also publicly announced that it had retained TWP to assist in the evaluation of strategic alternatives in order to maximize shareholder value.

Following the October 30, 2007 meeting, the Company commenced a broad third party auction solicitation process regarding a potential sale of the Company. TWP, on behalf of the Company, contacted 45 prospective buyers (including TriQuint and the party that submitted the unsolicited proposal in July 2007) that the Company and TWP had identified as potential interested parties or that made inbound inquiries. . . Ten prospective strategic buyers (including TriQuint and the party that submitted the unsolicited proposal in July) and four prospective financial buyers ultimately entered into nondisclosure agreements and received a longer descriptive confidential information memorandum from the Company containing non-public information regarding the Company. Seven of these fourteen prospective buyers, each a strategic party, expressed an interest to move to the next stage of the process.

On or about December 18, 2007, five prospective buyers submitted non-binding initial indications of interest, and one party submitted an oral indication. Shortly after the December 20, 2007 board meeting, three parties were contacted by TWP and advised that the Company had selected them to move on to the next phase of the auction process. The executive committee determined not to pursue the other prospective buyers or continue the process with them due to their initial indications of interest being at valuation levels below what the executive committee considered acceptable.

In late January 2008, TWP was contacted by a new prospective buyer regarding the process. The new prospective buyer expressed an interest in entering the process and signed a nondisclosure agreement.

On February 5, 2008, one of the three prospective buyers submitted a downward revised indication of interest rather than a formal bid package in the amount of approximately \$50 million. On February 19, 2008, TriQuint submitted its formal bid package in the amount of \$70 million, which equated to approximately \$0.96 per share. . . One prospective buyer (which was also the party that had submitted an unsolicited proposal in July),

declined to submit a formal proposal or move forward with the process. On February 19, 2008, the new prospective buyer submitted an initial indication of interest at a value of \$55 million, which equated to a value of approximately \$0.76 per share. . . The new prospective buyer subsequently revised its indication of interest to a range of \$53 million to \$66 million which equated to a value range of approximately \$0.73 to \$0.91 per share. TWP met with TriQuint and indicated a board meeting had been scheduled to review the bid process and informed TriQuint that its bid was low and TriQuint should consider submitting a bid with a higher valuation. Thereafter, on the morning of February 22, 2008, TriQuint revised its formal bid upward to an equity value of \$72 million, which TWP calculated to equate to approximately \$0.98 per share.

On February 22, 2008, the board determined that the prospective buyer that had submitted a revised indication of interest rather than a formal proposal was too low and therefore not acceptable and that the Company would not proceed further with the prospective buyer. The board also determined not to proceed at this time with the indication of interest received from the new prospective buyer.

On February 25, 2008, representatives from TWP contacted TriQuint and requested that TriQuint provide the maximum price at which TriQuint would be prepared to consummate a transaction, as well as a response to a list of significant issues on the transaction contemplated by the merger agreement that TWP would send on February 26, 2008. On February 28, 2008, TriQuint notified TWP that it revised its formal bid to \$1.00 per share and indicated that it was its best and final offer.

On February 29, 2008, representatives from TWP communicated with TriQuint that the Company was ready to enter into final negotiations with TriQuint in order to execute a definitive agreement based on its revised value.

On the evening of March 9, 2008, the Company's board of directors met at a special meeting to consider the Merger Agreement. Following a thorough discussion of the transaction the board voted unanimously in favor of entering into and adopting the Merger Agreement and unanimously recommended the approval and adoption of the Merger Agreement by the Company's stockholders. On the evening of March 9, 2008,

the Company and TriQuint entered into the Merger Agreement. On the morning of March 10, 2008, the Company and TriQuint each issued a press release announcing that the Merger Agreement had been entered into by the Company and TriQuint prior to market open.

Table I.1: Summary statistics for insider purchases and sales before the deal public announcement

The table shows mean insider purchases and sales in target (matched) firms during the pre-announcement and control period in columns 1 & 2 (3 &4), respectively. Panels A, B and C report means for insider purchases and sales after signing confidentiality agreements (up to the public announcement), before signing confidentiality agreements (starting at the initiation date) and during the whole pre-announcement period, respectively. Insiders are top executives and outside directors. We measure purchases and sales as fraction of shares outstanding in basis points, scaled on a monthly basis and winsorized at the 5th and 95th percentiles. The data covers 1,802 target and 1,802 matched firms. All variables are defined in Appendix A. We test for differences in means using the *t*-test allowing for unequal variances. ^a, ^b and ^c indicate significance at the one-, five- and ten-percent levels.

	Target firms		Matched firms		Mean difference			
	Pre-ann. (1)	Control (2)	Pre-ann. (3)	Control (4)	(1) vs (2)	(1) vs (3)	(3) vs (4)	(1)-(2) vs (3)-(4)
<i>Panel A: After signing confidentiality agreement</i>								
<i>Purchases</i>								
All deals	0.072 ^a	0.270	0.186	0.215	-0.199 ^a	-0.114 ^a	-0.029	-0.170 ^a
High comp. probability	0.087 ^a	0.276	0.183	0.226	-0.189 ^a	-0.096 ^a	-0.042	-0.147 ^a
Low comp. probability	0.056 ^a	0.266	0.172	0.174	-0.210 ^a	-0.116 ^a	-0.002	-0.208 ^a
High premium	0.069 ^a	0.275	0.194	0.199	-0.206 ^a	-0.124 ^a	-0.005	-0.201 ^a
Low premium	0.069 ^a	0.257	0.162	0.180	-0.188 ^a	-0.093 ^a	-0.018	-0.170 ^a
Premium quintile 5	0.113 ^a	0.330	0.191	0.266	-0.218 ^a	-0.079 ^c	-0.075	-0.143 ^b
Premium quintiles 3 & 4	0.037 ^a	0.205	0.160	0.151	-0.168 ^a	-0.124 ^a	0.009	-0.178 ^a
Premium quintiles 1 & 2	0.080 ^a	0.296	0.188	0.189	-0.216 ^a	-0.109 ^a	-0.001	-0.215 ^a
Bidder initiated	0.067 ^a	0.232	0.172	0.178	-0.165 ^a	-0.105 ^a	-0.006	-0.160 ^a
Target initiated	0.078 ^a	0.325	0.206	0.268	-0.247 ^a	-0.128 ^a	-0.062 ^b	-0.185 ^a
Cash	0.086 ^a	0.276	0.196	0.229	-0.190 ^a	-0.110 ^a	-0.034	-0.157 ^a
Stock	0.051 ^a	0.262	0.172	0.194	-0.211 ^a	-0.121 ^a	-0.021	-0.189 ^a
Informal sale	0.062 ^a	0.232	0.165	0.203	-0.170 ^a	-0.103 ^a	-0.038 ^c	-0.132 ^a
Auction	0.093 ^a	0.357	0.233	0.241	-0.264 ^a	-0.139 ^a	-0.008	-0.255 ^a
Strategic buyer	0.070 ^a	0.274	0.182	0.210	-0.204 ^a	-0.112 ^a	-0.028	-0.175 ^a
Financial buyer	0.078 ^a	0.256	0.204	0.234	-0.177 ^a	-0.125 ^a	-0.030	-0.147 ^a
<i>Sales</i>								
All deals	1.083 ^a	2.068	2.184	2.513	-0.985 ^a	-1.101 ^a	-0.328 ^b	-0.657 ^a
High comp. probability	1.334 ^a	2.392	2.379	2.628	-1.057 ^a	-1.044 ^a	-0.250	-0.808 ^a
Low comp. probability	0.974 ^a	2.020	1.938	2.443	-1.046 ^a	-0.964 ^a	-0.505 ^b	-0.541 ^b
High premium	1.411 ^a	2.351	2.158	2.611	-0.940 ^a	-0.747 ^a	-0.453 ^c	-0.487 ^c
Low premium	0.779 ^a	2.042	1.967	2.598	-1.264 ^a	-1.189 ^a	-0.630 ^b	-0.633 ^b
Premium quintile 5	1.482 ^a	2.200	2.477	3.260	-0.719 ^b	-0.995 ^a	-0.783 ^c	0.064
Premium quintiles 3 & 4	1.236 ^a	2.479	2.093	2.325	-1.243 ^a	-0.857 ^a	-0.232	-1.011 ^a
Premium quintiles 1 & 2	0.761 ^a	1.914	1.827	2.557	-1.153 ^a	-1.065 ^a	-0.730 ^a	-0.423
Bidder initiated	1.123 ^a	2.037	2.072	2.320	-0.914 ^a	-0.950 ^a	-0.248	-0.666 ^a
Target initiated	1.027 ^a	2.114	2.346	2.790	-1.087 ^a	-1.318 ^a	-0.444 ^c	-0.643 ^b
Cash	1.298 ^a	2.547	2.489	2.739	-1.249 ^a	-1.191 ^a	-0.250	-0.999 ^a
Stock	0.769 ^a	1.367	1.738	2.181	-0.598 ^a	-0.969 ^a	-0.443 ^c	-0.155
Informal sale	1.123 ^a	2.071	2.016	2.218	-0.948 ^a	-0.893 ^a	-0.202	-0.746 ^a
Auction	0.995 ^a	2.062	2.561	3.171	-1.068 ^a	-1.566 ^a	-0.610 ^c	-0.458
Strategic buyer	1.098 ^a	2.112	2.119	2.454	-1.014 ^a	-1.021 ^a	-0.336 ^c	-0.678 ^a
Financial buyer	1.020 ^a	1.879	2.468	2.765	-0.859 ^a	-1.448 ^a	-0.297	-0.562
<i>Panel B: Before signing confidentiality agreement</i>								
<i>Purchases</i>								
All deals	0.125 ^a	0.193	0.185	0.185	-0.069 ^a	-0.060 ^a	0.000	-0.069 ^a
High comp. probability	0.129 ^a	0.193	0.165	0.201	-0.064 ^a	-0.036 ^a	-0.036	-0.028
Low comp. probability	0.119 ^a	0.187	0.189	0.168	-0.068 ^a	-0.069 ^a	0.021	-0.088 ^a
High premium	0.148 ^a	0.197	0.172	0.204	-0.049 ^c	-0.024	-0.031	-0.017
Low premium	0.099 ^a	0.178	0.170	0.156	-0.079 ^a	-0.071 ^a	0.014	-0.093 ^a
Premium quintile 5	0.193 ^a	0.211	0.223	0.211	-0.018	-0.030	0.011	-0.029
Premium quintiles 3 & 4	0.103 ^a	0.179	0.140	0.181	-0.077 ^a	-0.037	-0.042	-0.035
Premium quintiles 1 & 2	0.110 ^a	0.184	0.176	0.163	-0.074 ^a	-0.067 ^b	0.014	-0.088 ^b

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	Target firms		Matched firms		Mean difference			
	Pre-ann. (1)	Control (2)	Pre-ann. (3)	Control (4)	(1) vs (2)	(1) vs (3)	(3) vs (4)	(1)-(2) vs (3)-(4)
Bidder initiated	0.109 ^a	0.154	0.167	0.172	-0.046 ^b	-0.059 ^a	-0.004	-0.041 ^c
Target initiated	0.148 ^a	0.249	0.210	0.203	-0.101 ^a	-0.063 ^b	0.007	-0.109 ^a
Cash	0.127 ^a	0.201	0.186	0.228	-0.073 ^a	-0.058 ^a	-0.042 ^c	-0.031
Stock	0.121 ^a	0.182	0.184	0.121	-0.062 ^b	-0.063 ^b	0.063 ^a	-0.125 ^a
Informal sale	0.112 ^a	0.173	0.175	0.178	-0.060 ^a	-0.063 ^a	-0.003	-0.058 ^b
Auction	0.152 ^a	0.239	0.206	0.199	-0.087 ^a	-0.054 ^c	0.007	-0.094 ^b
Strategic buyer	0.126 ^a	0.187	0.183	0.175	-0.061 ^a	-0.057 ^a	0.008	-0.069 ^a
Financial buyer	0.119 ^a	0.221	0.195	0.227	-0.102 ^a	-0.076 ^b	-0.032	-0.070
<i>Sales</i>								
All deals	1.485 ^a	1.740	1.986	2.223	-0.255 ^c	-0.502 ^a	-0.237	-0.019
High comp. probability	1.733 ^a	2.097	2.224	2.310	-0.364 ^c	-0.490 ^b	-0.087	-0.277
Low comp. probability	1.420 ^a	1.622	1.865	2.202	-0.202	-0.445 ^b	-0.337	0.135
High premium	1.467 ^a	1.723	2.167	2.297	-0.257	-0.700 ^a	-0.130	-0.126
Low premium	1.655 ^a	1.873	1.863	2.291	-0.219	-0.208	-0.428 ^c	0.210
Premium quintile 5	1.202 ^a	1.608	2.341	2.668	-0.406	-1.139 ^a	-0.326	-0.079
Premium quintiles 3 & 4	1.783 ^a	1.976	2.061	2.114	-0.193	-0.278	-0.054	-0.139
Premium quintiles 1 & 2	1.518 ^a	1.716	1.806	2.287	-0.198	-0.289	-0.480 ^c	0.282
Bidder initiated	1.442 ^a	1.715	1.834	2.021	-0.273	-0.392 ^b	-0.187	-0.086
Target initiated	1.546 ^a	1.776	2.206	2.513	-0.230	-0.659 ^a	-0.308	0.078
Cash	1.786 ^a	2.102	2.284	2.518	-0.316 ^c	-0.498 ^b	-0.234	-0.082
Stock	1.043 ^a	1.210	1.551	1.792	-0.167	-0.507 ^a	-0.241	0.074
Informal sale	1.543 ^a	1.787	1.840	2.036	-0.244	-0.297 ^c	-0.196	-0.048
Auction	1.354 ^a	1.635	2.314	2.642	-0.281	-0.960 ^a	-0.329	0.047
Strategic buyer	1.522 ^a	1.731	1.919	2.205	-0.209	-0.397 ^b	-0.286 ^c	0.077
Financial buyer	1.324 ^a	1.779	2.278	2.301	-0.455	-0.954 ^a	-0.023	-0.432
<i>Panel C: Whole pre-announcement period</i>								
Purchases	0.178 ^a	0.437	0.356	0.364	-0.259 ^a	-0.177 ^a	-0.009	-0.250 ^a
Sales	1.791 ^a	2.652	3.020	3.340	-0.861 ^a	-1.229 ^a	-0.320	-0.541 ^a

Table I.2: Summary statistics for insider trading in target firms before public announcements: six alternative insider trading measures and four alternative insider definitions

The table shows mean insider net purchases for six alternative measures of insider trading and four alternative definitions of insiders in target (matched) firms during the pre-announcement and control period in columns 1 & 2 (3 & 4), respectively. We report means only for insider trading after signing confidentiality agreements (up to the public announcement). The six alternative measures (by top executives and outside directors and scaled on a monthly basis) include the number of transactions (Panel A), number of shares in thousands (Panel B), dollar shares in USD millions (Panel C), scaled number of transactions in hundreds (Panel D), scaled number of shares in thousands (Panel E), and scaled dollar shares in USD thousands (Panel F). The four alternative insider groups include CEO (Panel G), top directors (Panel H), other directors (Panel I), and all directors (Panel J) and we use the fraction of shares outstanding traded in basis points per month. All insider trades are winsorized at the 5th and 95th percentiles. The data covers 1,802 target and 1,802 matched firms. All variables are defined in Appendix A. We test for differences in means using the *t*-test allowing for unequal variances. ^a, ^b and ^c indicate significance at the one-, five- and ten-percent levels.

	Target firms		Matched firms		Mean difference			
	Pre-ann. (1)	Control (2)	Pre-ann. (3)	Control (4)	(1) vs (2)	(1) vs (3)	(3) vs (4)	(1)-(2) vs (3)-(4)
<i>Panel A: Number of transactions</i>								
All deals	-0.270 ^a	-0.403	-0.405	-0.433	0.133 ^a	0.135 ^a	0.028	0.105 ^a
High comp. probability	-0.353 ^a	-0.477	-0.447	-0.461	0.124 ^b	0.094 ^b	0.014	0.110 ^b
Low comp. probability	-0.227 ^a	-0.385	-0.366	-0.432	0.159 ^a	0.139 ^a	0.066	0.093 ^c
High premium	-0.382 ^a	-0.488	-0.389	-0.427	0.106 ^b	0.006	0.039	0.067
Low premium	-0.193 ^a	-0.366	-0.398	-0.480	0.173 ^a	0.205 ^a	0.082	0.092 ^c
Premium quintile 5	-0.384 ^a	-0.430	-0.413	-0.479	0.046	0.029	0.066	-0.020
Premium quintiles 3 & 4	-0.349 ^a	-0.540	-0.424	-0.450	0.191 ^a	0.075	0.026	0.165 ^b
Premium quintiles 1 & 2	-0.179 ^a	-0.314	-0.354	-0.445	0.135 ^a	0.175 ^a	0.092 ^c	0.044
Bidder initiated	-0.318 ^a	-0.477	-0.400	-0.429	0.158 ^a	0.082 ^b	0.029	0.129 ^a
Target initiated	-0.200 ^a	-0.297	-0.413	-0.439	0.097 ^b	0.213 ^a	0.026	0.071
Cash	-0.316 ^a	-0.481	-0.457	-0.496	0.164 ^a	0.140 ^a	0.039	0.125 ^a
Stock	-0.201 ^a	-0.289	-0.330	-0.341	0.088 ^b	0.128 ^a	0.012	0.076
Informal sale	-0.311 ^a	-0.449	-0.408	-0.406	0.138 ^a	0.097 ^a	-0.002	0.140 ^a
Auction	-0.178 ^a	-0.300	-0.398	-0.493	0.122 ^a	0.221 ^a	0.095	0.027
Strategic buyer	-0.279 ^a	-0.409	-0.396	-0.420	0.130 ^a	0.117 ^a	0.024	0.106 ^a
Financial buyer	-0.230 ^a	-0.379	-0.444	-0.490	0.149 ^b	0.214 ^b	0.046	0.103
<i>Panel B: Number of shares</i>								
All deals	-4.206 ^a	-7.318	-6.512	-7.763	3.113 ^a	2.306 ^a	1.251 ^b	1.862 ^a
High comp. probability	-5.207 ^a	-8.612	-7.120	-8.075	3.406 ^a	1.913 ^b	0.956	2.450 ^b
Low comp. probability	-3.776 ^a	-6.807	-5.980	-8.036	3.031 ^a	2.204 ^a	2.056 ^b	0.975
High premium	-5.572 ^a	-8.289	-6.504	-7.747	2.717 ^a	0.931	1.244	1.473
Low premium	-3.095 ^a	-6.937	-6.179	-8.560	3.842 ^a	3.085 ^a	2.381 ^a	1.462
Premium quintile 5	-6.028 ^a	-7.779	-7.035	-9.210	1.750	1.007	2.175	-0.425
Premium quintiles 3 & 4	-4.865 ^a	-8.872	-6.728	-7.580	4.007 ^a	1.863 ^b	0.852	3.155 ^a
Premium quintiles 1 & 2	-2.961 ^a	-6.278	-5.612	-8.199	3.316 ^a	2.650 ^a	2.587 ^a	0.729
Bidder initiated	-4.605 ^a	-8.101	-6.397	-7.397	3.496 ^a	1.792 ^a	1.000	2.495 ^a
Target initiated	-3.631 ^a	-6.193	-6.677	-8.288	2.562 ^a	3.046 ^a	1.611 ^c	0.950
Cash	-4.654 ^a	-8.290	-7.422	-8.250	3.636 ^a	2.768 ^a	0.827	2.808 ^a
Stock	-3.549 ^a	-5.895	-5.177	-7.049	2.346 ^a	1.628 ^b	1.872 ^b	0.475
Informal sale	-4.701 ^a	-7.959	-6.367	-7.089	3.258 ^a	1.666 ^a	0.722	2.536 ^a
Auction	-3.098 ^a	-5.886	-6.836	-9.268	2.788 ^a	3.737 ^a	2.432 ^b	0.355
Strategic buyer	-4.298 ^a	-7.479	-6.093	-7.496	3.181 ^a	1.795 ^a	1.403 ^b	1.779 ^a
Financial buyer	-3.807 ^a	-6.623	-8.319	-8.914	2.816 ^a	4.511 ^a	0.595	2.221

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	Target firms		Matched firms		Mean difference			
	Pre-ann. (1)	Control (2)	Pre-ann. (3)	Control (4)	(1) vs (2)	(1) vs (3)	(3) vs (4)	(1)-(2) vs (3)-(4)
<i>Panel C: Dollar shares</i>								
All deals	-0.123 ^a	-0.216	-0.237	-0.267	0.093 ^a	0.114 ^a	0.030	0.063 ^a
High comp. probability	-0.150 ^a	-0.258	-0.268	-0.284	0.108 ^a	0.118 ^a	0.016	0.091 ^a
Low comp. probability	-0.115 ^a	-0.209	-0.216	-0.268	0.094 ^a	0.101 ^a	0.052 ^c	0.042
High premium	-0.166 ^a	-0.239	-0.245	-0.271	0.073 ^a	0.079 ^a	0.026	0.047
Low premium	-0.096 ^a	-0.218	-0.230	-0.290	0.123 ^a	0.134 ^a	0.061 ^c	0.062 ^b
Premium quintile 5	-0.181 ^a	-0.219	-0.266	-0.306	0.037	0.085 ^c	0.040	-0.003
Premium quintiles 3 & 4	-0.150 ^a	-0.271	-0.259	-0.271	0.121 ^a	0.108 ^a	0.012	0.109 ^a
Premium quintiles 1 & 2	-0.086 ^a	-0.191	-0.202	-0.277	0.105 ^a	0.116 ^a	0.075 ^b	0.030
Bidder initiated	-0.143 ^a	-0.258	-0.236	-0.263	0.115 ^a	0.093 ^a	0.027	0.088 ^a
Target initiated	-0.094 ^a	-0.156	-0.239	-0.274	0.061 ^a	0.145 ^a	0.034	0.027
Cash	-0.128 ^a	-0.226	-0.259	-0.273	0.098 ^a	0.130 ^a	0.014	0.083 ^a
Stock	-0.115 ^a	-0.201	-0.206	-0.258	0.085 ^a	0.091 ^a	0.052 ^c	0.033
Informal sale	-0.145 ^a	-0.243	-0.231	-0.253	0.097 ^a	0.086 ^a	0.022	0.075 ^a
Auction	-0.073 ^a	-0.156	-0.252	-0.298	0.083 ^a	0.178 ^a	0.046	0.037
Strategic buyer	-0.131 ^a	-0.224	-0.225	-0.259	0.093 ^a	0.093 ^a	0.034	0.059 ^b
Financial buyer	-0.087 ^a	-0.180	-0.292	-0.303	0.092 ^a	0.204 ^a	0.011	0.081 ^c
<i>Panel D: Scaled #transactions</i>								
All deals	-1.116 ^a	-1.745	-1.561	-1.768	0.629 ^a	0.445 ^a	0.206	0.423 ^b
High comp. probability	-1.426 ^a	-2.071	-1.808	-1.889	0.645 ^a	0.382 ^c	0.081	0.564 ^c
Low comp. probability	-0.955 ^a	-1.623	-1.305	-1.793	0.668 ^a	0.350 ^c	0.487 ^b	0.180
High premium	-1.591 ^a	-2.108	-1.551	-1.926	0.517 ^b	-0.040	0.375	0.142
Low premium	-0.680 ^a	-1.479	-1.418	-1.811	0.799 ^a	0.738 ^a	0.393	0.406
Premium quintile 5	-1.562 ^a	-1.781	-1.521	-2.014	0.219	-0.041	0.493	-0.274
Premium quintiles 3 & 4	-1.438 ^a	-2.293	-1.760	-2.015	0.855 ^a	0.322	0.255	0.600 ^c
Premium quintiles 1 & 2	-0.622 ^a	-1.302	-1.192	-1.650	0.680 ^a	0.570 ^a	0.458 ^c	0.222
Bidder initiated	-1.267 ^a	-1.907	-1.598	-1.720	0.640 ^a	0.331 ^c	0.122	0.518 ^b
Target initiated	-0.899 ^a	-1.513	-1.509	-1.836	0.614 ^a	0.610 ^a	0.328	0.286
Cash	-1.324 ^a	-2.269	-1.774	-2.080	0.946 ^a	0.450 ^b	0.305	0.640 ^b
Stock	-0.811 ^a	-0.978	-1.249	-1.310	0.166	0.438 ^b	0.061	0.105
Informal sale	-1.252 ^a	-1.841	-1.593	-1.582	0.589 ^a	0.341 ^b	-0.011	0.600 ^a
Auction	-0.811 ^a	-1.531	-1.490	-2.182	0.720 ^a	0.679 ^a	0.692 ^b	0.028
Strategic buyer	-1.115 ^a	-1.651	-1.524	-1.656	0.536 ^a	0.410 ^a	0.131	0.405 ^c
Financial buyer	-1.121 ^a	-2.154	-1.720	-2.251	1.033 ^a	0.599 ^c	0.531	0.502
<i>Panel E: Scaled #shares</i>								
All deals	-0.180 ^a	-0.344	-0.271	-0.352	0.164 ^a	0.091 ^a	0.081 ^a	0.083 ^a
High comp. probability	-0.221 ^a	-0.395	-0.300	-0.391	0.174 ^a	0.079 ^b	0.091 ^b	0.083 ^c
Low comp. probability	-0.158 ^a	-0.322	-0.232	-0.341	0.165 ^a	0.074 ^b	0.109 ^a	0.056
High premium	-0.243 ^a	-0.403	-0.270	-0.384	0.160 ^a	0.027	0.113 ^a	0.047
Low premium	-0.117 ^a	-0.299	-0.238	-0.355	0.182 ^a	0.121 ^a	0.117 ^a	0.064
Premium quintile 5	-0.271 ^a	-0.403	-0.261	-0.420	0.132 ^c	-0.010	0.159 ^b	-0.027
Premium quintiles 3 & 4	-0.205 ^a	-0.398	-0.293	-0.373	0.193 ^a	0.088 ^b	0.080 ^c	0.113 ^c
Premium quintiles 1 & 2	-0.110 ^a	-0.278	-0.213	-0.342	0.168 ^a	0.103 ^a	0.129 ^a	0.040
Bidder initiated	-0.181 ^a	-0.365	-0.269	-0.321	0.184 ^a	0.088 ^a	0.052	0.132 ^a
Target initiated	-0.178 ^a	-0.313	-0.273	-0.396	0.136 ^a	0.095 ^a	0.123 ^a	0.013
Cash	-0.203 ^a	-0.403	-0.308	-0.390	0.200 ^a	0.105 ^a	0.082 ^b	0.118 ^a
Stock	-0.145 ^a	-0.257	-0.215	-0.295	0.112 ^a	0.070 ^b	0.080 ^b	0.032
Informal sale	-0.196 ^a	-0.359	-0.264	-0.307	0.163 ^a	0.068 ^b	0.043	0.120 ^a
Auction	-0.143 ^a	-0.310	-0.285	-0.452	0.167 ^a	0.142 ^a	0.168 ^a	0.000
Strategic buyer	-0.185 ^a	-0.334	-0.253	-0.330	0.149 ^a	0.069 ^a	0.077 ^a	0.072 ^b
Financial buyer	-0.158 ^a	-0.388	-0.344	-0.447	0.230 ^a	0.186 ^a	0.102	0.128 ^c

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	Target firms		Matched firms		Mean difference			
	Pre-ann. (1)	Control (2)	Pre-ann. (3)	Control (4)	(1) vs (2)	(1) vs (3)	(3) vs (4)	(1)-(2) vs (3)-(4)
<i>Panel F: Scaled \$shares</i>								
All deals	-4.435 ^a	-8.212	-7.738	-9.947	3.777 ^a	3.302 ^a	2.209 ^a	1.568 ^b
High comp. probability	-5.309 ^a	-9.498	-9.175	-10.979	4.189 ^a	3.866 ^a	1.804	2.385 ^b
Low comp. probability	-4.219 ^a	-8.101	-6.526	-9.653	3.882 ^a	2.307 ^a	3.127 ^a	0.755
High premium	-6.046 ^a	-9.346	-8.269	-10.710	3.300 ^a	2.223 ^b	2.441 ^b	0.859
Low premium	-3.164 ^a	-7.695	-7.148	-10.250	4.531 ^a	3.984 ^a	3.102 ^a	1.429
Premium quintile 5	-6.942 ^a	-8.632	-8.257	-12.082	1.690	1.316	3.825 ^b	-2.135
Premium quintiles 3 & 4	-5.279 ^a	-9.931	-8.900	-10.481	4.652 ^a	3.621 ^a	1.581	3.071 ^b
Premium quintiles 1 & 2	-2.772 ^a	-7.061	-6.250	-9.682	4.290 ^a	3.478 ^a	3.432 ^a	0.858
Bidder initiated	-4.948 ^a	-9.193	-7.749	-9.491	4.245 ^a	2.801 ^a	1.742 ^c	2.502 ^b
Target initiated	-3.698 ^a	-6.802	-7.721	-10.603	3.105 ^a	4.023 ^a	2.882 ^a	0.223
Cash	-4.642 ^a	-9.181	-8.645	-10.617	4.539 ^a	4.003 ^a	1.972 ^b	2.567 ^a
Stock	-4.133 ^a	-6.794	-6.409	-8.965	2.661 ^a	2.275 ^a	2.557 ^b	0.104
Informal sale	-5.049 ^a	-8.834	-7.615	-8.906	3.784 ^a	2.566 ^a	1.291	2.493 ^a
Auction	-3.063 ^a	-6.824	-8.011	-12.273	3.761 ^a	4.948 ^a	4.262 ^a	-0.501
Strategic buyer	-4.740 ^a	-8.253	-7.287	-9.393	3.513 ^a	2.548 ^a	2.105 ^a	1.407 ^c
Financial buyer	-3.121 ^a	-8.040	-9.680	-12.339	4.918 ^a	6.559 ^a	2.658	2.260
<i>Panel G: CEO</i>								
All deals	-0.166 ^a	-0.252	-0.273	-0.324	0.086 ^a	0.107 ^a	0.051 ^c	0.035
High comp. probability	-0.202 ^a	-0.333	-0.347	-0.368	0.131 ^a	0.145 ^a	0.020	0.110 ^c
Low comp. probability	-0.141 ^a	-0.219	-0.209	-0.280	0.078 ^b	0.068 ^c	0.070 ^c	0.007
High premium	-0.210 ^a	-0.283	-0.271	-0.335	0.073 ^c	0.060	0.064	0.009
Low premium	-0.115 ^a	-0.253	-0.283	-0.338	0.138 ^a	0.168 ^a	0.056	0.082
Premium quintile 5	-0.199 ^a	-0.290	-0.263	-0.374	0.091	0.064	0.111	-0.020
Premium quintiles 3 & 4	-0.190 ^a	-0.291	-0.314	-0.327	0.100 ^b	0.124 ^b	0.013	0.087
Premium quintiles 1 & 2	-0.117 ^a	-0.235	-0.247	-0.328	0.118 ^a	0.130 ^a	0.081	0.037
Bidder initiated	-0.171 ^a	-0.251	-0.259	-0.310	0.080 ^b	0.088 ^a	0.051	0.029
Target initiated	-0.159 ^a	-0.253	-0.293	-0.344	0.094 ^b	0.134 ^a	0.050	0.044
Cash	-0.206 ^a	-0.326	-0.325	-0.357	0.119 ^a	0.119 ^a	0.032	0.088 ^c
Stock	-0.107 ^a	-0.145	-0.197	-0.275	0.037	0.089 ^a	0.078 ^c	-0.041
Informal sale	-0.163 ^a	-0.242	-0.248	-0.269	0.078 ^b	0.084 ^a	0.022	0.057
Auction	-0.173 ^a	-0.276	-0.331	-0.446	0.103 ^b	0.158 ^a	0.116 ^c	-0.012
Strategic buyer	-0.159 ^a	-0.257	-0.265	-0.322	0.098 ^a	0.106 ^a	0.057 ^c	0.041
Financial buyer	-0.197 ^a	-0.233	-0.307	-0.332	0.036	0.110 ^c	0.024	0.012
<i>Panel H: Top directors</i>								
All deals	-0.288 ^a	-0.480	-0.508	-0.566	0.192 ^a	0.220 ^a	0.058	0.134 ^b
High comp. probability	-0.347 ^a	-0.573	-0.603	-0.656	0.225 ^a	0.255 ^a	0.053	0.172 ^c
Low comp. probability	-0.253 ^a	-0.456	-0.412	-0.489	0.203 ^a	0.159 ^a	0.077	0.126
High premium	-0.364 ^a	-0.576	-0.515	-0.577	0.212 ^a	0.151 ^b	0.062	0.150 ^c
Low premium	-0.208 ^a	-0.454	-0.479	-0.614	0.246 ^a	0.271 ^a	0.135 ^c	0.111
Premium quintile 5	-0.374 ^a	-0.493	-0.539	-0.666	0.119	0.165	0.127	-0.008
Premium quintiles 3 & 4	-0.308 ^a	-0.606	-0.548	-0.560	0.298 ^a	0.241 ^a	0.012	0.287 ^a
Premium quintiles 1 & 2	-0.220 ^a	-0.436	-0.425	-0.596	0.216 ^a	0.205 ^a	0.171 ^b	0.044
Bidder initiated	-0.307 ^a	-0.468	-0.470	-0.543	0.161 ^a	0.163 ^a	0.073	0.088
Target initiated	-0.260 ^a	-0.497	-0.563	-0.600	0.236 ^a	0.303 ^a	0.037	0.199 ^b
Cash	-0.334 ^a	-0.596	-0.592	-0.620	0.261 ^a	0.257 ^a	0.028	0.233 ^a
Stock	-0.220 ^a	-0.310	-0.385	-0.488	0.090	0.166 ^a	0.102	-0.012
Informal sale	-0.301 ^a	-0.454	-0.468	-0.483	0.152 ^a	0.166 ^a	0.015	0.137 ^b
Auction	-0.257 ^a	-0.538	-0.598	-0.752	0.281 ^a	0.341 ^a	0.153	0.127
Strategic buyer	-0.281 ^a	-0.488	-0.481	-0.551	0.207 ^a	0.200 ^a	0.070	0.138 ^b
Financial buyer	-0.317 ^a	-0.443	-0.624	-0.631	0.125	0.307 ^a	0.007	0.119

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	Target firms		Matched firms		Mean difference			
	Pre-ann. (1)	Control (2)	Pre-ann. (3)	Control (4)	(1) vs (2)	(1) vs (3)	(3) vs (4)	(1)-(2) vs (3)-(4)
<i>Panel I: Other directors</i>								
All deals	-0.660 ^a	-1.101	-1.294	-1.443	0.441 ^a	0.634 ^a	0.149	0.291 ^a
High comp. probability	-0.835 ^a	-1.302	-1.398	-1.499	0.467 ^a	0.563 ^a	0.101	0.366 ^b
Low comp. probability	-0.590 ^a	-1.086	-1.177	-1.435	0.496 ^a	0.587 ^a	0.258 ^c	0.238
High premium	-0.849 ^a	-1.243	-1.280	-1.555	0.395 ^a	0.432 ^a	0.275	0.120
Low premium	-0.516 ^a	-1.136	-1.181	-1.476	0.619 ^a	0.665 ^a	0.294 ^c	0.325 ^c
Premium quintile 5	-0.921 ^a	-1.201	-1.580	-1.924	0.281	0.660 ^a	0.343	-0.063
Premium quintiles 3 & 4	-0.751 ^a	-1.333	-1.174	-1.398	0.582 ^a	0.423 ^a	0.223	0.358 ^c
Premium quintiles 1 & 2	-0.495 ^a	-1.041	-1.113	-1.430	0.546 ^a	0.618 ^a	0.316 ^c	0.229
Bidder initiated	-0.667 ^a	-1.148	-1.212	-1.307	0.481 ^a	0.546 ^a	0.095	0.386 ^a
Target initiated	-0.651 ^a	-1.033	-1.411	-1.639	0.383 ^a	0.760 ^a	0.228	0.155
Cash	-0.801 ^a	-1.346	-1.481	-1.607	0.545 ^a	0.680 ^a	0.125	0.420 ^a
Stock	-0.454 ^a	-0.742	-1.019	-1.203	0.288 ^b	0.565 ^a	0.185	0.103
Informal sale	-0.674 ^a	-1.138	-1.202	-1.274	0.464 ^a	0.528 ^a	0.072	0.392 ^a
Auction	-0.629 ^a	-1.018	-1.499	-1.822	0.390 ^a	0.870 ^a	0.323	0.066
Strategic buyer	-0.680 ^a	-1.089	-1.264	-1.405	0.409 ^a	0.584 ^a	0.141	0.268 ^b
Financial buyer	-0.574 ^a	-1.152	-1.423	-1.609	0.577 ^a	0.849 ^a	0.186	0.391
<i>Panel J: All directors</i>								
All deals	-1.113 ^a	-1.868	-2.107	-2.393	0.756 ^a	0.994 ^a	0.286 ^c	0.469 ^b
High comp. probability	-1.400 ^a	-2.214	-2.295	-2.561	0.813 ^a	0.894 ^a	0.266	0.548 ^c
Low comp. probability	-0.980 ^a	-1.797	-1.877	-2.327	0.818 ^a	0.898 ^a	0.450 ^c	0.368
High premium	-1.474 ^a	-2.116	-2.075	-2.550	0.642 ^a	0.602 ^b	0.475 ^c	0.168
Low premium	-0.806 ^a	-1.893	-1.917	-2.500	1.087 ^a	1.111 ^a	0.583 ^b	0.505 ^c
Premium quintile 5	-1.583 ^a	-1.942	-2.418	-3.123	0.359	0.835 ^b	0.705	-0.346
Premium quintiles 3 & 4	-1.263 ^a	-2.301	-2.017	-2.303	1.038 ^a	0.754 ^a	0.286	0.752 ^b
Premium quintiles 1 & 2	-0.797 ^a	-1.741	-1.766	-2.448	0.944 ^a	0.969 ^a	0.682 ^b	0.262
Bidder initiated	-1.152 ^a	-1.895	-1.971	-2.229	0.743 ^a	0.819 ^a	0.257	0.485 ^b
Target initiated	-1.055 ^a	-1.829	-2.302	-2.629	0.774 ^a	1.246 ^a	0.327	0.446
Cash	-1.370 ^a	-2.359	-2.407	-2.611	0.989 ^a	1.037 ^a	0.205	0.785 ^a
Stock	-0.736 ^a	-1.149	-1.668	-2.074	0.413 ^b	0.932 ^a	0.406 ^c	0.007
Informal sale	-1.151 ^a	-1.908	-1.922	-2.122	0.758 ^a	0.772 ^a	0.199	0.558 ^b
Auction	-1.027 ^a	-1.778	-2.519	-3.000	0.751 ^a	1.492 ^a	0.481	0.270
Strategic buyer	-1.118 ^a	-1.885	-2.034	-2.337	0.767 ^a	0.916 ^a	0.303	0.464 ^b
Financial buyer	-1.089 ^a	-1.796	-2.421	-2.635	0.707 ^b	1.332 ^a	0.214	0.493

Table I.3: Testing difference in differences assumptions for six alternative insider trading measures and four alternative insider definitions

This table reports means for insider net purchases for six alternative measures of insider trading (Panel A) and four alternative definitions of insiders (Panel B) in target and matched firms over the control period. The control period lies before the initiation date and matches the pre-announcement event period in length and calendar months. The table reports means across the earlier versus later control period, where the cutoff date corresponds to the confidentiality agreement date in the event period. The six alternative measures of insider trading (by top executives and outside directors and scaled on a monthly basis) include the number of transactions, number of shares in thousands, dollar shares in USD millions, scaled number of transactions in hundreds, scaled number of shares in thousands, and scaled dollar shares in USD thousands. The four alternative definitions of insider include CEO, top directors, other directors, and all directors and we use the fraction of shares outstanding traded in basis points per month. All insider net purchases are winsorized at the 5th and 95th percentiles. The data covers 1,802 target and 1,802 matched firms. All variables are defined in Appendix A. We test for differences in means using the *t*-test allowing for unequal variances. ^a, ^b and ^c in columns 2, 4, 6 and 8 indicate significance of differences in the corresponding partition at the one-, five- and ten-percent levels.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Earlier c. period	Later c. period	Earlier c. period	Later c. period	Earlier c. period	Later c. period	Earlier c. period	Later c. period
<i>Panel A: Six alternative measures of insider trading</i>								
	Number of transactions		Number of shares		Dollar shares			
Target firms	-0.370	-0.403	-6.843	-7.318	-0.218	-0.216		
Matched firms	-0.396	-0.433	-6.873	-7.763	-0.242	-0.267		
Target vs. matched	0.027	0.030	0.029	0.444	0.024	0.051		
	Scaled #transactions		Scaled #shares		Scaled \$shares			
Target firms	-1.557	-1.745	-0.310	-0.344	-8.136	-8.212		
Matched firms	-1.670	-1.768	-0.324	-0.352	-9.038	-9.947		
Target vs. matched	0.114	0.022	0.015	0.008	0.902	1.735		
<i>Panel B: Four alternative definitions of insiders</i>								
	CEO		Top directors		Other directors		All directors	
Target firms	-0.191	-0.252	-0.361	-0.480	-1.031	-1.101	-1.680	-1.868
Matched firms	-0.203	-0.324	-0.449	-0.566	-1.245	-1.443	-2.189	-2.393
Target vs. matched	0.012	0.072 ^c	0.088	0.086	0.214	0.342	0.508	0.525

Table I.4: Correlation matrix

This table reports the correlation matrix of insider purchases, insider sales, net insider purchases, book to market decile, average daily market adjusted abnormal returns over the second quarter before the pre-announcement or control period, average daily market adjusted abnormal returns over the first quarter before the pre-announcement or control period, stock return volatility, change in stock return volatility, R&D over total sales, daily stock trading liquidity, EBITDA over total assets, insider ownership, the length of private selling process, and log value of total assets. Insiders are top executives and outside directors. We measure insider trades as fraction of shares outstanding in basis points, scaled on a monthly basis and winsorized at the 5th and 95th percentiles. The control variables are winsorized at the 1st and 99th percentiles. All variables are defined in Appendix A. The data covers 1,802 target and 1,802 matched firms. ^a, ^b and ^c indicate significance at the one-, five- and ten-percent levels.

	Insider Purchases	Insider Sales	Net purchases	B/M decile	Stock ret. quarter-2	Stock ret. quarter-1	Volatility	Change in volatility	R&D	Liquidity	EBITDA	Insider ownership	Private length
Insider sales	0.160 ^a												
Insider net purchases	0.111 ^a	-0.939 ^a											
Book to market decile	0.027 ^b	-0.015	0.024 ^b										
Stock return quarter-2	-0.025 ^c	0.063 ^a	-0.065 ^a	0.013									
Stock return quarter-1	-0.011	0.053 ^a	-0.057 ^a	0.009	0.022 ^c								
Return volatility	0.075 ^a	0.045 ^a	-0.030 ^b	0.010	0.052 ^a	0.043 ^a							
Change in return volatility	0.011	-0.040 ^a	0.047 ^a	0.009	-0.010	0.036 ^a	-0.329 ^a						
R&D	0.030 ^b	-0.018	0.029 ^b	-0.151 ^a	0.025 ^c	-0.001	0.195 ^a	-0.003	0.104 ^a				
Liquidity	-0.033 ^a	0.063 ^a	-0.074 ^a	-0.242 ^a	0.036 ^a	0.023 ^c	0.131 ^a	0.024 ^c	-0.556 ^a	0.012			
EBITDA	-0.078 ^a	0.015	-0.038 ^a	0.033 ^a	-0.007	0.026 ^b	-0.306 ^a	-0.005	0.004	-0.081 ^a	-0.001		
Insider ownership	0.199 ^a	0.327 ^a	-0.269 ^a	-0.014	0.036 ^a	0.018	0.076 ^a	0.010	0.037 ^a	-0.044 ^a	-0.048 ^a	0.197 ^a	
Private selling process length	0.089 ^a	0.081 ^a	-0.056 ^a	-0.054 ^a	-0.005	0.015	0.135 ^a	0.003	-0.207 ^a	0.152 ^a	0.351 ^a	-0.186 ^a	-0.266 ^a
Total assets	-0.095 ^a	-0.097 ^a	0.070 ^a	0.110 ^a	-0.033 ^a	-0.010	-0.417 ^a	-0.030 ^b					

Table I.5: Insider trading in target firms before public announcements: dropping observations with zero days

This table reports OLS estimation results for insider purchases, sales and net purchases in target and matched firms before the takeover public announcement date as in Table 5 in the main text, but excluding deals with zero days in the given sub-period. Insiders are top executives and outside directors. We measure insider trades as fraction of shares outstanding in basis points, scaled on a monthly basis and winsorized at the 5th and 95th percentiles. Panel A reports results for insider trading after signing confidentiality agreements (up to the public announcement) and excludes 45 deals for which confidentiality agreements were signed on the announcement date. Panel B reports results for insider trading before signing confidentiality agreements (starting at the initiation date) and excludes 159 deals for which confidentiality agreements were signed on the initiation date. Panel C reports results for insider trading during the whole pre-announcement period and excludes 201 deals for which confidentiality agreements were signed on the announcement date or the initiation date. We report Hubert/White robust standard errors in parentheses. All regressions include a set of control variables (dummy variables for target firms and control period, book to market decile, market adjusted daily stock returns, volatility of daily stock returns, change in volatility of daily stock returns, R&D over total sales, liquidity, insider ownership, EBITDA over total assets, pre-announcement period length, log value of total assets, year and industry dummies), which are not reported. All explanatory variables are defined in Appendix A and winsorized at the 1th and 99th percentiles except all dummy variables. ^a, ^b and ^c indicate significance at the one-, five- and ten-percent levels.

	(1)	(2)	(3)
	Purchases	Sales	Net purchases
<i>Panel A: After signing confidentiality agreement</i>			
Target x pre-announcement	-0.186 ^a (0.028)	-0.756 ^a (0.233)	0.598 ^a (0.227)
# observations	5,742	5,742	5,742
F	9.041 ^a	11.26 ^a	11.79 ^a
R ²	8.50%	11.10%	9.40%
<i>Panel B: Before signing confidentiality agreement</i>			
Target x pre-announcement	-0.087 ^a (0.027)	0.094 (0.239)	-0.173 (0.238)
# observations	5,390	5,390	5,390
F	8.766 ^a	12.03 ^a	11.76 ^a
R ²	10.00%	13.00%	12.30%
<i>Panel C: Whole pre-announcement period</i>			
Target x pre-announcement	-0.256 ^a (0.043)	-0.567 ^b (0.285)	0.273 (0.285)
# observations	5,244	5,244	5,244
F	10.61 ^a	16.95 ^a	13.88 ^a
R ²	11.50%	16.50%	15.60%

Table I.6: Insider trading in target firms before public announcements: six alternative insider trading measures

This table reports OLS estimation results for insider net purchases for six alternative measures of insider trades in target and matched firms before the public announcement date. The six alternative measures (by top executives and outside directors and scaled on a monthly basis) include the number of transactions, number of shares in thousands, dollar shares in USD millions, scaled number of transactions in hundreds, scaled number of shares in thousands, and scaled dollar shares in USD thousands (columns 1 to 6). All insider trades are winsorized at the 5th and 95th percentiles. The table covers insider trades after signing confidentiality agreements (up to the public announcement) for six different partitions, including high versus low deal completion probability, high versus low premium by median value, premium quintile 5 versus quintiles 3 & 4 and quintiles 1 & 2, bidder versus target initiated, cash versus stock payment, informal sale versus formal auction, and strategic versus financial buyer. The data covers 1,802 target and 1,802 matched firms. We report only the coefficients of ‘pre-announcement * takeover’ and Hubert/White robust standard errors in parentheses. All regressions include a set of control variables (dummy variables for target firms and control period, book to market decile, market adjusted daily stock returns, volatility of daily stock returns, change in volatility of daily stock returns, R&D over total sales, liquidity, insider ownership, EBITDA over total assets, pre-announcement period length, log value of total assets, year and industry dummies), which are not reported. All explanatory variables are defined in Appendix A and winsorized at the 1th and 99th percentiles except dummy variables. ^a, ^b and ^c indicate significance at the one-, five- and ten-percent levels.

	(1)	(2)	(3)	(4)	(5)	(6)
	Number tran.	Number shares	Dollar shares	Scaled #tran.	Scaled #shares	Scaled \$shares
High completion probability	0.147 ^b (0.073)	2.964 ^b (1.229)	0.100 ^b (0.043)	0.643 ^c (0.374)	0.100 ^c (0.061)	2.658 ^c (1.544)
Low completion probability	0.107 (0.068)	1.346 (1.158)	0.043 (0.040)	0.332 (0.346)	0.073 (0.054)	1.032 (1.394)
High premium	0.092 (0.076)	1.977 (1.279)	0.063 (0.044)	0.170 (0.391)	0.054 (0.063)	1.396 (1.602)
Low premium	0.106 (0.071)	1.544 (1.195)	0.054 (0.042)	0.508 (0.354)	0.066 (0.055)	1.438 (1.446)
Premium quintile 5	-0.009 (0.123)	0.515 (2.093)	0.034 (0.070)	-0.375 (0.630)	-0.009 (0.102)	-1.027 (2.537)
Premium quintiles 3 & 4	0.219 ^a (0.084)	3.899 ^a (1.399)	0.130 ^a (0.049)	0.775 ^c (0.430)	0.141 ^b (0.068)	3.607 ^b (1.769)
Premium quintiles 1 & 2	0.053 (0.076)	0.461 (1.301)	0.007 (0.045)	0.334 (0.389)	0.031 (0.060)	0.565 (1.570)
Bidder initiation	0.172 ^a (0.065)	3.137 ^a (1.091)	0.106 ^a (0.038)	0.728 ^b (0.321)	0.152 ^a (0.052)	3.108 ^b (1.332)
Target initiation	0.084 (0.071)	1.227 (1.184)	0.029 (0.039)	0.293 (0.384)	0.010 (0.059)	0.557 (1.472)
Cash payment	0.135 ^b (0.065)	2.784 ^a (1.084)	0.078 ^b (0.036)	0.690 ^b (0.336)	0.103 ^c (0.053)	2.248 ^c (1.322)
Stock payment	0.113 (0.075)	1.856 (1.199)	0.065 (0.043)	0.439 (0.354)	0.082 (0.057)	1.955 (1.486)
Informal sale	0.159 ^a (0.060)	3.072 ^a (1.000)	0.093 ^a (0.035)	0.645 ^b (0.298)	0.136 ^a (0.047)	3.317 ^a (1.220)
Formal auction	0.083 (0.079)	0.804 (1.336)	0.035 (0.044)	0.289 (0.437)	0.0002 (0.068)	-0.621 (1.677)
Strategic	0.129 ^b (0.054)	2.087 ^b (0.886)	0.064 ^b (0.031)	0.541 ^b (0.272)	0.085 ^b (0.043)	1.908 ^c (1.097)
Financial	0.154 (0.109)	2.885 (1.932)	0.099 (0.063)	0.717 (0.602)	0.141 (0.097)	3.100 (2.341)

Table I.7: Insider trading in target firms before public announcements: four alternative insider definitions

This table reports OLS estimation results for four alternative definitions of insiders in target and matched firms before the public announcement date. The four alternative insider groups include CEOs, top directors, other directors, and all directors (columns 1 to 4) and we use the fraction of shares outstanding traded in basis points per month. All insider trades are winsorized at the 5th and 95th percentiles. The table covers insider trades after signing confidentiality agreements (up to the public announcement) for six different partitions, including high versus low deal completion probability, high versus low premium by median value, premium quintile 5 versus quintiles 3 & 4 and quintiles 1 & 2, bidder versus target initiated, cash versus stock payment, informal sale versus formal auction, and strategic versus financial buyer. The data covers 1,802 target and 1,802 matched firms. We report only the coefficients of ‘pre-announcement * takeover’ and Hubert/White robust standard errors in parentheses. All regressions include a set of control variables (dummy variables for target firms and control period, book to market decile, market adjusted daily stock returns, volatility of daily stock returns, change in volatility of daily stock returns, R&D over total sales, liquidity, insider ownership, EBITDA over total assets, pre-announcement period length, log value of total assets, year and industry dummies), which are not reported. All explanatory variables are defined in Appendix A and winsorized at the 1th and 99th percentiles except dummy variables. ^a, ^b and ^c indicate significance at the one-, five- and ten-percent levels.

	(1)	(2)	(3)	(4)
	CEO	Top directors	Other directors	All directors
High completion probability	0.120 ^c (0.071)	0.195 ^c (0.116)	0.380 ^c (0.223)	0.611 ^c (0.365)
Low completion probability	-0.014 (0.060)	0.127 (0.098)	0.307 (0.211)	0.369 (0.334)
High premium	0.016 (0.071)	0.194 ^c (0.117)	0.138 (0.235)	0.187 (0.383)
Low premium	0.055 (0.066)	0.080 (0.106)	0.376 ^c (0.216)	0.455 (0.345)
Premium quintile 5	-0.021 (0.118)	0.027 (0.194)	-0.017 (0.400)	-0.300 (0.642)
Premium quintiles 3 & 4	0.116 (0.078)	0.341 ^a (0.127)	0.440 ^c (0.250)	0.880 ^b (0.408)
Premium quintiles 1 & 2	0.007 (0.072)	0.001 (0.116)	0.246 (0.236)	0.134 (0.379)
Bidder initiation	0.011 (0.059)	0.157 ^c (0.095)	0.396 ^b (0.193)	0.542 ^c (0.311)
Target initiation	0.092 (0.070)	0.253 ^b (0.114)	0.262 (0.228)	0.550 (0.367)
Cash payment	0.105 ^c (0.063)	0.230 ^b (0.102)	0.445 ^b (0.204)	0.735 ^b (0.330)
Stock payment	0.008 (0.059)	0.085 (0.099)	0.227 (0.205)	0.260 (0.328)
Informal sale	0.057 (0.052)	0.161 ^c (0.085)	0.390 ^b (0.176)	0.568 ^b (0.285)
Formal auction	0.014 (0.088)	0.183 (0.139)	0.231 (0.266)	0.425 (0.426)
Strategic	0.047 (0.050)	0.170 ^b (0.080)	0.293 ^c (0.163)	0.530 ^b (0.263)
Financial	0.024 (0.107)	0.154 (0.180)	0.533 (0.337)	0.586 (0.559)

Table 1.8: Three-way complementarity: completion probability, premium and deal characteristics

This table reports OLS estimation results for insider net purchases in target and matched firms after signing confidentiality agreements before the public announcement date. The table captures the combined effect across deal completion probability, realized takeover premium and deal characteristics. Insiders are top executives and outside directors. We measure insider trades as fraction of shares outstanding in basis points, scaled on a monthly basis and winsorized at the 5th and 95th percentiles. Panel A covers insider trading after signing confidentiality agreements (up to the public announcement), while Panel B covers insider trading before signing confidentiality agreements (starting at the initiation date). The data covers 1,802 target and 1,802 matched firms. We report Hubert/White robust standard errors in parentheses. All regressions include a set of control variables (dummy variables for target firms and control period, book to market decile, market adjusted daily stock returns, volatility of daily stock returns, change in volatility of daily stock returns, R&D over total sales, liquidity, insider ownership, EBITDA over total assets, pre-announcement period length, log value of total assets, year and industry dummies), which are not reported. All explanatory variables are defined in Appendix A and winsorized at the 1th and 99th percentiles except dummy variables. ^a, ^b and ^c indicate significance at the one-, five- and ten-percent levels.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	High completion probability						Low completion probability					
	Premium quintile 5		Premium quintiles 3 & 4		Premium quintiles 1 & 2		Premium quintile 5		Premium quintiles 3 & 4		Premium quintiles 1 & 2	
	bidder	target	bidder	target	bidder	target	bidder	target	bidder	target	bidder	target
Target x pre-ann.	-0.103 (1.025)	0.167 (1.589)	1.512 ^b (0.662)	0.485 (0.837)	0.492 (0.775)	0.401 (0.788)	-0.160 (1.010)	1.102 (1.331)	0.240 (0.677)	1.233 (1.027)	0.144 (0.641)	0.130 (0.655)
# observations	367	168	754	425	458	411	298	157	587	323	578	514
F	2.544 ^a	1.353	2.640 ^a	1.455 ^b	1.765 ^a	2.173 ^a	1.667 ^a	3.153 ^a	1.503 ^b	1.690 ^a	2.657 ^a	2.524 ^a
R ²	21.60%	26.00%	11.40%	13.70%	22.00%	18.30%	23.70%	52.50%	13.70%	20.00%	18.50%	27.40%
	cash	stock	cash	stock	cash	stock	cash	stock	cash	stock	cash	stock
Target x pre-ann.	-0.054 (1.040)	-0.388 (1.609)	1.080 ^c (0.592)	1.714 (1.125)	0.973 (0.754)	-0.463 (0.815)	-0.559 (1.207)	0.842 (1.023)	1.260 (0.846)	-0.263 (0.709)	0.056 (0.802)	0.139 (0.549)
# observations	422	113	924	255	564	305	234	221	471	439	434	658
F	3.810 ^a	1.788 ^b	2.845 ^a	2.335 ^a	2.370 ^a	1.998 ^a	2.526 ^a	1.829 ^a	2.245 ^a	1.300	2.267 ^a	2.603 ^a
R ²	18.10%	39.00%	7.80%	24.30%	18.70%	18.20%	35.50%	37.90%	17.50%	20.70%	26.90%	20.60%
	inf.sale	auc.	inf.sale	auc.	inf.sale	auc.	inf.sale	auc.	inf.sale	auc.	inf.sale	auc.
Target x pre-ann.	-0.373 (1.013)	0.740 (1.852)	1.311 ^b (0.611)	0.705 (0.972)	0.551 (0.702)	0.155 (0.911)	0.367 (0.910)	-0.695 (1.484)	0.584 (0.627)	0.250 (1.208)	0.510 (0.568)	-0.741 (0.776)
# observations	383	152	832	347	544	325	361	94	679	231	726	366
F	2.171 ^a	1.473 ^c	2.226 ^a	1.439 ^b	2.020 ^a	1.903 ^a	1.867 ^a	5.412 ^a	1.610 ^a	1.973 ^a	2.166 ^a	2.259 ^a
R ²	19.90%	28.30%	11.00%	15.50%	20.60%	23.70%	20.80%	69.60%	12.40%	30.30%	18.30%	29.40%

continued on next page

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	High completion probability						Low completion probability					
	Premium quintile 5		Premium quintiles 3 & 4		Premium quintiles 1 & 2		Premium quintile 5		Premium quintiles 3 & 4		Premium quintiles 1 & 2	
	strat.	fin.	strat.	fin.	strat.	fin.	strat.	fin.	strat.	fin.	strat.	fin.
Target x pre-ann.	-0.338 (0.953)	0.917 (1.906)	1.132 ^b (0.565)	1.247 (1.298)	0.519 (0.607)	0.192 (1.176)	0.208 (0.879)	-1.339 (1.567)	0.577 (0.629)	0.854 (1.330)	0.170 (0.502)	-0.165 (0.915)
# observations	449	86	953	226	659	210	393	62	763	147	913	179
F	2.938 ^a	14.53 ^a	2.604 ^a	1.845 ^a	2.110 ^a	64.04 ^a	2.651 ^a	1.718 ^c	2.188 ^a	0.995	3.357 ^a	1.127
R ²	16.30%	54.80%	10.70%	20.00%	17.90%	32.80%	28.50%	62.30%	13.70%	29.10%	22.10%	33.20%
	bidder	target	bidder	target	bidder	target	bidder	target	bidder	target	bidder	target
Target x pre-ann.	0.283 (0.987)	1.225 (1.571)	0.649 (0.660)	-0.056 (0.838)	-0.376 (0.772)	-0.298 (0.845)	0.224 (0.899)	-2.152 (1.461)	0.303 (0.678)	0.419 (0.921)	-1.047 (0.671)	-1.426 ^b (0.691)
# observations	367	168	754	425	458	411	298	157	587	323	578	514
F	1.908 ^a	1.411 ^c	2.447 ^a	2.529 ^a	1.670 ^a	1.611 ^c	1.165	5.133 ^a	1.622 ^a	3.118 ^a	1.665 ^a	4.262 ^a
R ²	19.40%	23.10%	11.60%	23.20%	18.60%	14.40%	23.00%	47.20%	13.70%	33.10%	12.30%	34.10%
	cash	stock	cash	stock	cash	stock	cash	stock	cash	stock	cash	stock
Target x pre-ann.	1.221 (0.942)	-0.644 (2.001)	0.517 (0.585)	-0.006 (1.099)	-0.800 (0.767)	0.768 (0.865)	-0.882 (1.162)	-0.382 (0.933)	0.685 (0.837)	-0.301 (0.661)	-1.975 ^b (0.858)	-1.003 ^c (0.583)
# observations	422	113	924	255	564	305	234	221	471	439	434	658
F	2.041 ^a	1.202	4.172 ^a	1.517 ^b	2.051 ^a	1.218	5.394 ^a	1.701 ^a	2.298 ^a	3.323 ^a	3.513 ^a	2.488 ^a
R ²	18.30%	35.40%	14.10%	20.50%	13.20%	19.20%	36.00%	30.60%	15.30%	32.10%	31.50%	13.60%
	inf.sale	auc.	inf.sale	auc.	inf.sale	auc.	inf.sale	auc.	inf.sale	auc.	inf.sale	auc.
Target x pre-ann.	0.109 (0.978)	2.624 (1.717)	0.420 (0.616)	0.345 (0.961)	0.355 (0.698)	-1.532 (0.980)	-0.558 (0.878)	-0.542 (1.328)	0.124 (0.624)	0.590 (1.130)	-1.445 ^b (0.610)	-0.945 (0.780)
# observations	383	152	832	347	544	325	361	94	679	231	726	366
F	1.939 ^a	3.139 ^a	2.805 ^a	2.292 ^a	1.933 ^a	1.464 ^b	1.768 ^a	2.949 ^a	2.446 ^a	1.513	2.301 ^a	3.597 ^a
R ²	18.30%	32.20%	12.60%	25.30%	14.40%	22.10%	23.90%	62.70%	18.30%	27.00%	14.30%	42.60%
	strat.	fin.	strat.	fin.	strat.	fin.	strat.	fin.	strat.	fin.	strat.	fin.
Target x pre-ann.	0.552 (0.946)	1.873 (1.941)	0.553 (0.578)	-0.632 (1.079)	-0.303 (0.695)	-0.272 (0.972)	-0.870 (0.828)	0.291 (1.823)	-0.070 (0.611)	1.904 (1.206)	-1.181 ^b (0.517)	-1.880 (1.340)
# observations	449	86	953	226	659	210	393	62	763	147	913	179
F	2.118 ^a	1.293	3.541 ^a	2.185 ^a	2.001 ^a	1.601 ^b	2.462 ^a	6.082 ^a	3.191 ^a	1.359	3.204 ^a	2.070 ^a
R ²	12.20%	42.10%	13.10%	24.50%	12.00%	34.50%	29.00%	47.70%	20.70%	26.10%	19.90%	38.20%

Panel B: Before signing confidentiality agreement