Vote Avoidance and Shareholder Voting in Mergers and Acquisitions*

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Abstract

Using a hand-collected sample of U.S. stock deals over the period 1995-2015, we examine whether and how the requirement of acquirer shareholder voting affects deal quality. We find evidence that acquirer management substitutes stock with cash to bypass shareholder voting, and that deals bypassing shareholder voting have lower announcement returns than those that do not. Employing a regression discontinuity design, we show a positive effect of shareholder voting on deal quality that is concentrated among acquirers with higher institutional ownership and acquirers buying targets with greater information asymmetries. We conclude that shareholder voting mitigates agency problems in mergers and acquisitions.

Keywords: vote avoidance; shareholder voting; mergers and acquisitions; acquirer announcement returns; regression discontinuity design; agency problems

JEL Classification: G32; G34; G38

I. Introduction

The separation of ownership and control in modern corporations relies on two pillars—the specialization of management and a set of mechanisms to control agency problems (Fama and Jensen, 1983). Management, given its expertise and insider knowledge of the firm and industry, is granted much discretion in making various corporate decisions. This paper examines whether agency problems are present when acquirer management uses stock to buy target firms, and if they are, whether shareholder voting helps curb such problems.

Our identification strategy relies on listing rules of the NYSE, AMEX, and NASDAQ that require shareholder voting in mergers and acquisitions (M&As) when an acquirer *intends* to issue more than 20% of new shares to finance a deal.[1] This setting allows us to examine whether acquirer management uses methods of payment to avoid shareholder voting (i.e., vote avoidance) and, more importantly, to establish a direct causal effect of shareholder voting in M&As.

We proceed with two complementary approaches. First, we identify a sample of mixed-payment deals in which, had acquirer management not used cash as part of the payment, these deals would have required shareholder voting. We examine how acquirer management bypassing the shareholder vote is related to deal quality as measured by acquirer price reaction. Second, among all-stock deals where acquiring management has no discretion (i.e., cannot use cash) to bypass shareholder voting, we examine the causal impact of shareholder voting on deal quality. Acquirer management's inability to *precisely* manipulate the number of shares to be issued

[1] The 20% rule for listed firms was first introduced in 1955 by the NYSE, in 1968 by the AMEX, and in 1985 by the NASDAQ, with the intent to protect investors (Michael, 1992; Karmel, 2001). See Michael (1992) for details on the history of corporate governance listing standards in the U.S. See Appendix IA1 in the Internet Appendix, the New York Stock Exchange (NYSE) Listed Company Manual, Section 312.00 Shareholder Approval Policy; the American Stock Exchange (AMEX) Company Guide, Section 712 Acquisitions; and the NASDAQ Manual: Marketplace Rules, Section 4350 Qualitative Listing Requirements for NASDAQ National Market and NASDAQ SmallCap Market Issuers Except for Limited Partnerships. See Appendix IA2 for an example of S-4 where the requirement of acquirer shareholder voting is specified.

allows us to use a regression discontinuity design (RDD). Specifically, we compare acquirer price reaction to deals in which acquirer management intends to issue either above or below the 20% threshold by a small margin; as such, the requirement of shareholder voting is locally randomized to help establish a causal effect.[2] Our two approaches complement each other and provide both indirect (via vote avoidance) and direct evidence on the value implications of shareholder voting in M&As.

Using a large hand-collected sample of U.S. acquisition deals that involve stock payment over the period 1995-2015, we first present evidence that in mixed-payment deals, acquirer management substitutes stock with cash to avoid triggering the 20% threshold and hence shareholder voting; and that this maneuver is less likely to take place when acquirer institutional ownership is high. We further show that deals bypassing shareholder voting are 3.0% lower in acquirer announcement returns than those requiring shareholder voting. Given that the average acquirer has a market capitalization of $3.2 billion in the sample, a 3.0% difference in stock returns around the merger announcement corresponds to a value reduction of over $96 million, an economically significant amount to acquirer shareholders.

In all-stock deals where acquirer management has little latitude to influence the percent of shares issued to bypass shareholder voting, deals requiring shareholder voting are 4.3% higher in acquirer announcement returns compared to those that do not. Given that the average acquirer has a market capitalization of $3.3 billion in the sample, a 4.3% difference in stock returns around the merger announcement corresponds to a value increase of over $140 million for acquirer shareholders. We further show that this positive effect is concentrated among acquirers with high institutional ownership and among acquirers buying target firms with such serious

[2] As we show in Section V, the validity assumption for the RDD is met in the all-stock sample.

information problems as private targets or targets with low analyst coverage. We provide some suggestive evidence on the economic mechanisms underlying this positive effect, including greater synergies and a stronger acquirer bargaining position.

Although the RDD analysis provides direct evidence of a causal effect of shareholder voting on deal quality around the 20% threshold, a potential concern remains that acquirer management will have a choice of payment methods (i.e., all-stock payment or not) that might correlate with the outcome we examine. To address this concern, we take advantage of an accounting rule change over our sample period that makes the choice of all-stock payment largely exogenous to deal quality. Using subsamples of all-stock deals in which the choice of payment methods is primarily driven by accounting considerations, we find a similar positive effect of acquirer shareholder voting on deal quality.

Our paper contributes to the literature in a number of dimensions. First, our study provides new and important evidence on vote avoidance and shareholder voting in M&As using U.S. data. Although the U.S. represents the largest M&A market in the world, our understanding of shareholder voting in this important corporate decision is quite limited. Hsieh and Wang (2008) and Kamar (2011) study U.S. shareholder voting rights and deal outcomes, but reach very different conclusions due to endogeneity issues. Focusing on the U.K. where shareholder voting is *mandatory* for large deals regardless methods of payment, Becht, Polo, and Rossi (2016) find that shareholder voting leads to higher acquirer announcement returns and lower offer premiums.[3] In contrast, in the U.S. acquirer management can adjust methods of payment to

[3] Prior literature studies (mostly nonbinding) shareholder voting in various corporate matters and finds mixed evidence. For example, while Karpoff, Malatesta, and Walkling (1996), Del Guercio and Hawkins (1999), Cai, Garner, and Walkling (2009), and Agrawal (2012) find that shareholder voting is ineffective in improving firm performance, others find shareholder voting beneficial in some corporate governance contexts (e.g., Black (1992), Gordon and Pound (1993), Del Guercio, Seery, and Woidtke (2008), Balachandran, Joos, and Weber (2012), Cuňat,

bypass shareholder voting, which provides a richer setting for us to test alternative hypotheses regarding the efficacy of shareholder voting in a different institutional setting.[4]

Second, our paper contributes to the large literature on the monitoring role of institutional investors in corporate policies (see, for example, theoretical work by Shleifer and Vishny, 1986; Maug, 1998; empirical evidence from Hartzell and Starks, 2003; Chen, Harford, and Li, 2007; Iliev, Lins, Miller, and Roth, 2015; and surveys by Gillan and Starks, 2000; Yermack, 2010). Complementary to these studies, we show that institutional investors not only reduce acquirer management's propensity to bypass shareholder voting, but also enhance the positive effect of shareholder voting in M&As. Our paper thus provides new insight into how institutional investors help create firm value—their scrutiny leads to portfolio firms being less likely to bypass shareholder voting and/or making value-enhancing deals—and reinforces the important connection between the sophistication of shareholders and major corporate decisions (Holderness, 2016).

Finally, our paper contributes to the literature on acquisitions of non-public targets. The question of why we observe positive acquirer announcement returns in acquisitions of private or subsidiary targets is still not fully answered. Possible explanations include information uncertainty (Officer, Poulsen, and Stegemoller, 2009), liquidity provision (Fuller, Netter, and Stegemoller, 2002; Officer, 2007; Greene, 2015), and block formation in the acquirer due to stock payment (Chang, 1998). Complementary to prior studies, we show that shareholder voting leads to greater value creation in acquisitions of non-public targets.

Gine, and Guadalupe (2012, 2015), and Holderness (2016)). Using international data (outside the U.S.), Iliev, Lins, Miller, and Roth (2015) find that greater dissent voting from U.S. institutional investors is associated with more M&A deal withdrawals.

[4] In a similar vein, Bach and Metzger (2016a) find evidence of management manipulating the voting process. They estimate that 11% of closely-contested shareholder proposals that were eventually rejected would have passed had management not been able to manipulate the voting results.

II. Theoretical Framework and Hypothesis Development

Agency problems arise whenever decision rights are delegated. One solution is for shareholders to retain the right to ratify major corporate decisions (Fama and Jensen, 1983). Our first hypothesis, the managerial expertise hypothesis, focuses on the costs of shareholder intervention.

First, management has insider knowledge and/or the sophistication to understand the intricacies involved in running a modern corporation, while many shareholders do not. As a result, shareholder intervention may lead to deviation from superior choices that managers, with better information and expertise, might make on their own. Aghion and Tirole (1997) and Burkart, Gromb, and Panunzi (1997) point out the key costs of shareholders retaining the power to second-guess managers' business decisions: managers reduce their efforts, information supply, and initiatives that would be potentially value enhancing, while a dispersed ownership forces shareholders to not exercise excessive control. Using a case study based on the 1971 Alaska Native Claims Settlement Act, Karpoff and Rice (1989) show that managers facing frequent shareholder votes spend significant time campaigning and pursuing frivolous short-term policies that cater to blocs of voters but compromise long-term firm value.

Second, even if some shareholders have relevant expertise, they might have ulterior motives and/or business ties that make their intervention conflict with shareholder value maximization. Del Guercio and Hawkins (1999) examine the motivation and impact of public pension fund activism and find significant heterogeneity across funds in activism objectives, tactics, and the impact on target firm value. Agrawal (2012) finds that union funds pursue worker interests, rather than maximize shareholder value.

Finally, the very process of shareholder ratification is both costly and time-consuming with uncertain outcomes, which might delay timely management decision-making (Kahan and Rock, 2008; Kamar, 2011).[5]

The above discussions lead to our first hypothesis:

The Managerial Expertise Hypothesis: Bypassing shareholder voting in M&As is value enhancing.

Our second hypothesis, the shareholder voting hypothesis, originated from agency problems of managerial discretion, and focuses on the benefits of shareholder intervention. When decision rights are delegated, shareholder intervention can mitigate agency problems (see, for example, Shleifer and Vishny, 1986; Admati, Pfleiderer, and Zechner, 1994; Huddart, 1993; Maug, 1998; Noe, 2002). Because all shareholders benefit from the actions of an intervening shareholder without incurring the costs, only large shareholders have sufficient incentives to intervene effectively. Empirical evidence from Gillan and Starks (2000), Hartzell and Starks (2003), Parrino, Sias, and Starks (2003), Chen, Harford, and Li (2007), and Iliev, Lins, Miller, and Roth (2015) largely supports our hypothesis that intervention by large shareholders is value enhancing.

Moreover, deals that require shareholder voting, as per exchange listing rules, are relatively large and important to acquirers, and hence garner greater attention from acquirer shareholders. These significant deals, which have the potential to dilute ownership and/or destroy value, motivate acquirer shareholders to closely scrutinize bids and be more involved in the decision-making process.

[5] The process of shareholder voting typically involves preparing proxy statements, obtaining regulatory approval of those statements, and calling a shareholder meeting, which adds both costs and delays to the business decision-making process.

Finally, the growing importance of institutional ownership and shareholder proxy advisory firms (Yermack, 2010; Malenko and Shen, 2016) suggests that shareholders have the knowledge and resources to intervene informatively.

The above discussions lead to our second hypothesis:

The Shareholder Voting Hypothesis: Shareholder voting in M&As is value enhancing.

III. Sample Formation and Overview

A. Sample formation

We start with all announced M&A transactions from the Thomson One Banker SDC database for the period from January 1, 1995 to December 31, 2015. We impose the following filters to obtain our sample: 1) the deal is classified as "Acquisition of Assets (AA)", "Merger (M)," or "Acquisition of Majority Interest (AM)" by the data provider; 2) the acquirer is a U.S. public firm listed on the NYSE, AMEX, or NASDAQ; 3) the acquirer holds less than 50% of the shares of the target firm before the deal announcement and seeks to own 100% of the shares of the target firm through the deal; 4) the target is a public firm, a private firm, or a subsidiary; 5) the deal value is at least $1 million (in 1995 dollar value); 6) basic financial and stock return information is available for the acquirer; 7) the relative size of the deal (i.e., the ratio of transaction value over book value of acquirer total assets) is at least 1%; 8) the number of new shares to be issued is greater than zero; and 9) limited partnerships are excluded, as the listing requirement does not apply to them. We end up with an initial sample of 4,282 deals. We note that the Thomson One Banker SDC database is generally accurate regarding whether a deal is financed by stock, but often misses information on the number of new shares to be issued. We identify a total of 1,230 such deals and add them back to our initial sample. We then hand-collect

information on share issuance and whether acquirer shareholder voting is required for these 5,512 deals via searches of regulatory filings on the Securities and Exchange Commission's (SEC) EDGAR website.[6] Table 1 lists steps taken to form the sample of 5,223 stock deals involving public, private, and subsidiary targets. In the interests of brevity, we henceforth refer to both private and subsidiary targets as simply private targets.

B. Sample overview

Table 2 presents the temporal distribution of our sample. In Panel A, we separate the sample by whether shareholder voting is required. We see a large merger wave around the time of the Internet bubble, and over our sample period about a quarter of stock deals require acquirer shareholder voting. In Panel B, we further separate the sample by whether a given deal is an all-stock deal. We see a trend of declining all-stock deals after 2000, which coincides with the elimination of pooling of interests accounting for M&As (whose prerequisite is that at least 90% of the consideration is in stock). Within the all-stock sample, about a third of the sample requires acquirer shareholder voting; within the mixed-payment sample, less than a fifth of the sample requires acquirer shareholder voting.

Table 3 Panel A presents summary statistics. All variables are defined in Appendix A. All continuous variables are winsorized at the 1st and 99th percentiles. We note that the acquirer three-day announcement return, CAR3, has a mean of 1.0% and a median of 0.2%. Panel B compares firm and deal characteristics between deals requiring shareholder voting and those that do not. Acquirers requiring shareholder voting on average have lower CAR3, lower institutional ownership, lower market capitalization, lower M/B ratio (only the median), lower cash holdings, and lower prior year returns, while they are larger and have higher leverage, than those that do

[6] Appendix IA3 in the Internet Appendix provides a detailed description of our data collection process.

not. Deals requiring shareholder voting are significantly larger (in terms of both deal value and relative size), less likely to be a diversifying deal or a tender offer, and more likely to involve buying a public target than those that do not. Overall, these summary statistics show systematic differences between the two subsamples separated by whether shareholder voting is required or not.

Panel C presents the correlation matrix for our sample of stock deals. None of the correlations warrants any concern for multicollinearity.

IV. Vote Avoidance in M&As

In the U.S., shareholder voting is required only when acquirers issue more than 20% of shares outstanding to fund a deal. This provides acquirer management an opportunity to bypass shareholder voting and hence retain its discretion by using cash as part of the payment for target firms (i.e., mixed-payment).

A. Evidence of vote avoidance in M&As

To explore whether acquirer management uses cash as part of the payment to bypass shareholder voting, we plot the frequency distribution of the percent of shares issued for two samples: the mixed-payment sample and the all-stock sample in Figure 1. Visual inspection of the plots suggests some evidence of acquirer management using cash to bypass shareholder voting at the 20% threshold in the mixed-payment sample. Specifically, there is a pronounced spike in the frequency of deals whose percent of shares issued is in the range of 18% to 20%, just enough to avoid triggering the listing requirement of shareholder voting;[7] and a sharp drop in the

[7] This pattern is consistent with anecdotal evidence that some acquirer management strives to stay below the 20% threshold by requiring that the maximum percent of shares issued or issuable in a merger be capped at 19.9% and

frequency of deals whose percent of shares issued is in the range of 20% to 22%, when shareholder voting is required. In contrast, we do not observe such drastic discontinuity in the all-stock sample.

We further plot the density function of the percent of shares issued in Figure 2 and test the null hypothesis of no discontinuity at the 20% threshold (McCrary, 2008). The test strongly rejects the null (Z-stat = -7.4, p-value < 0.01) in the sample of mixed-payment deals, while it fails to reject the null (Z-stat = -0.09; p-value = 0.47) in the sample of all-stock deals. It is worth noting that the difference in test results is unlikely due to a power issue as the two samples are similar in size.

In summary, Figures 1 and 2 and the formal McCrary tests present evidence that in some mixed-payment deals, acquirer management does try to bypass shareholder voting by issuing shares just below the 20% threshold, while in the all-stock sample, acquirer management has only imperfect control of the percent of shares issued that will be just below the 20% threshold. In the jargon of the RDD, if acquirer management cannot *precisely* manipulate the running variable (the percent of shares issued in the all-stock sample), then the variation in treatment (the requirement of shareholder voting) near the 20% threshold will be *randomized* as though from a *randomized* experiment (Lee and Lemieux, 2010). We next examine what firm and deal characteristics are associated with acquirer management's propensity to bypass shareholder voting and the value implications of vote avoidance to test the managerial expertise hypothesis.

paying the remainder in cash. For example, in the transaction of Global Payments buying Heartland Payment Systems, the merger document states, "Under the terms of the merger agreement, in the event that the number of shares of common stock of Global Payments issuable as a result of the mergers would exceed 19.9% of the issued and outstanding shares of common stock of Global Payments immediately prior to the closing of the mergers, the stock consideration will be reduced so that no more than 19.9% of the outstanding shares of common stock of Global Payments become issuable in the mergers and the cash consideration will be increased by a corresponding amount."

B. Determinants of vote avoidance

Our analysis of vote avoidance uses a combined sample of deals in which managerial discretion is most likely to manifest itself; i.e., mixed-payment deals issuing less than 20% of equity with the ratio of deal value (excluding liabilities assumed) to acquirer market capitalization between 20% and 35% (i.e., *Vote avoidance* = 1, and shareholder voting is not required)[8] and deals where managerial discretion/vote avoidance is likely to be absent; i.e., all-stock deals issuing more than 20% of equity (i.e., *Vote avoidance* = 0, and shareholder voting is required). We employ a logistic regression where the dependent variable is an indicator variable, *Vote* avoidance, as defined above. The independent variables include acquirer institutional ownership to proxy for shareholder scrutiny, leverage to capture financial situation, prior-year return to capture stock market performance prior to the merger announcement, and other controls. Table 4 presents the results.

Given its expertise and sophistication, acquirer management has the ability to bypass shareholder voting under a wide spectrum of possibilities. As a result, we run the logistic regression using different subsamples with the percent of shares issued centered at the 20% threshold. For example, in Column (1), the regression uses a sample of deals with the percent of shares issued falling within the band of [14%, 26%]. Columns (2), (3), and (4) expand to be within the bands of [12%, 28%], [10%, 30%], and [5%, 35%], respectively. As the band becomes wider, acquirer management is more likely to use cash for reasons other than bypassing

[8] Had these deals been paid completely in stock, they would have required shareholder voting because the hypothetical percent of shares issued would have been above 20%; acquirer management uses partial cash payments on these deals to potentially bypass shareholder voting.

shareholder voting; thus the sample used likely introduces bias to our analysis.[9] We use different subsamples to balance bias and precision.

Panel A shows that across all subsamples, institutional ownership is negatively and significantly associated with acquirer management's propensity to bypass shareholder voting (with one exception in Column (4) where acquirer management is more likely to use cash for reasons other than vote avoidance). The coefficients are more significant and larger in magnitude in subsamples with the percent of shares issued falling within the narrower bands where vote avoidance is more likely the reason behind using mixed payment. The evidence suggests that monitoring shareholders such as institutional investors help rein in managerial discretion, thereby reducing acquirer management's propensity to bypass shareholder voting.

We further show that leverage is positively and significantly associated with acquirer management's propensity to bypass shareholder voting (with one exception in Column (1) where the least amount of cash is needed), suggesting that debt proceeds are used to pay for target firms. Moreover, ROA and deal size (with one exception in Column (4)), are positively and significantly associated with acquirer management's propensity to bypass shareholder voting. Finally, buying a public target is negatively and significantly associated with acquirer management's propensity to bypass shareholder voting.

[9] Some examples would be illustrative. Consider a case of a mixed-payment deal in which the acquirer issued 19% of equity with the ratio of deal value to acquirer market capitalization at 0.25. Had the acquirer not used cash, it would have issued 25% of equity. In this case, the acquirer pays 6% of its market capitalization with cash to bring down the percent of shares issued to 19% (just below the 20% threshold to bypass shareholder voting). Consider another case of a mixed-payment deal in which the acquirer issued only 5% of equity with the ratio of deal value to acquirer market capitalization at 0.25. Again, had the acquirer not used cash, it would have issued 25% of equity. In this second case, the acquirer pays 20% of its market capitalization with cash to bring down the percent of shares issued to 5% (far below the 20% threshold). While both cases will be in our sample, one could reasonably argue that bypassing shareholder voting is more likely to be the primary motive in the first case, but in the second case there might be other reasons behind the mixed payment (of cash and stock).

Panel B controls for additional measures of governance including acquirer board size, board independence, and whether the CEO is also Chairman of the Board (CEO-COB duality). Limited evidence suggests that a large acquirer board is negatively and significantly associated with acquirer management's propensity to bypass shareholder voting, while CEO-COB duality is positively and significantly associated with this propensity. After controlling for other governance measures, acquirer institutional ownership remains negatively and significantly associated with acquirer management's propensity to bypass shareholder voting (with one exception in Column (4)).

Overall, Table 4 shows that acquirer institutional ownership is negatively and significantly associated with acquirer management's propensity to bypass shareholder voting, suggesting that institutional investors do worry about potential agency problems of managerial discretion in M&As.

C. Value implications of vote avoidance

To examine the value implication of vote avoidance, we run OLS regressions in which the dependent variable is acquirer CAR3 and the key independent variable is the indicator variable *Vote avoidance*. Similar to Table 4, the sample consists of mixed-payment deals issuing less than 20% of equity with the ratio of deal value (excluding liabilities assumed) to acquirer market capitalization between 20% and 35% (i.e., *Vote avoidance* = 1) and all-stock deals issuing more than 20% of equity (i.e., *Vote avoidance* = 0). Using the OLS regressions, we compare cases of potential vote avoidance by acquirer management (the mix-payment deals) and cases of shareholder voting (the all-stock deals). Under the managerial expertise hypothesis, the coefficient on *Vote avoidance* is expected to be positive. The OLS regressions employ various

subsamples with the percent of shares issued centered at the 20% threshold (the same as in Table 4). Table 5 presents the results.

We find that across all subsamples, *Vote avoidance* is negatively and significantly associated with acquirer CAR3. Take Column (4) as an example: *Vote avoidance* is associated with a drop of 3.0% in acquirer CAR3. Given that the average acquirer has a market capitalization of $3.2 billion in the sample, a 3.0% drop in stock returns around the merger announcement corresponds to a value reduction of over $96 million, an economically significant amount to acquirer shareholders.

Overall, we present evidence that acquirer management uses cash as part of the payment for target firms to bypass shareholder voting in M&As, and that there is a negative association between acquirer institutional ownership and acquirer management's propensity to bypass shareholder voting. More importantly, we show that vote avoidance is negatively associated with deal quality, inconsistent with the managerial expertise hypothesis.

The above analysis, however, cannot offer causal inference because vote avoidance might be correlated with unobservable firm and deal characteristics that also drive acquirer announcement returns, leading to a spurious association between vote avoidance and acquirer announcement returns. We next examine the opposite of vote avoidance—mandatory shareholder voting when the percent of shares issued exceeds 20%—and its effect on deal quality via a clean identification scheme in all-stock deals.

V. The Causal Effect of Shareholder Voting on Deal Quality

As mentioned earlier, listing rules of the NYSE, AMEX, and NASDAQ require shareholder voting when an acquirer intends to issue more than 20% of new shares to finance a

deal. The discrete nature of the requirement generates a potentially exogenous source of variation in the distance to the 20% threshold that can help in estimating a causal effect of shareholder voting on deal quality using a RDD.[10]

A. Assumptions of a valid RDD

The key assumption of a valid RDD is that agents cannot *precisely* manipulate the running variable (the percent of shares issued). If acquirer management, even while having *some* influence, is unable to *precisely* manipulate the running variable, then the variation in treatment (the requirement of shareholder voting) near the 20% threshold will be *randomized* as though from a randomized experiment. Given that acquirer management can substitute stock with cash in mixed-payment deals to bypass shareholder voting (recall Figures 1 and 2), we use a sample of all-stock deals in which *precise* manipulation of the running variable at the 20% threshold is hard to achieve.

In an all-stock deal, the percent of shares issued (i.e., the running variable) depends on a number of factors beyond the control of acquirer management. First, the NYSE clearly states, "The issuance of shares from treasury is considered an issuance of shares for purposes of Section 312.03" and hence is counted as part of the new shares issued for shareholder voting, thereby preventing acquirer management from using treasury shares to bypass shareholder voting (see Appendix IA1 in the Internet Appendix). Second, acquirer management has little control over its target firm's outstanding convertible securities and equity-based compensation (e.g., restricted

[10] A partial list of recent studies using this technique to examine various corporate decisions includes Chava and Roberts (2008), Nini, Smith, and Sufi (2009), Roberts and Sufi (2009), Cuňat, Gine, and Guadalupe (2012, 2015), Bach and Metzger (2016b), Focke, Maug, and Niessen-Ruenzi (2016), Becht, Polo, and Rossi (2016), and Malenko and Shen (2016).

shares and options to employees) that need to be converted into acquirer shares.[11] Third, the purchase price and hence the number of shares issued are an outcome of a lengthy bargaining process with much uncertainty (Boone and Mulherin, 2007; Ahern, 2012). Supporting the argument that acquirer management has little latitude in *precisely* manipulating the percent of shares issued in all-stock deals, Figure 1 Panel B and Figure 2 Panel B reveal no discontinuity in the frequency distribution and the density function of the running variable, respectively.

Another validity test for the RDD is to examine whether baseline firm and deal characteristics are "locally" balanced on either side of the threshold (Lee and Lemieux, 2010; Roberts and Whited, 2013). Table 6 reports the balancing tests for baseline firm and deal characteristics. None of these variables exhibits any discontinuity at the threshold, confirming that any potential treatment effect we observe is not driven by firm or deal characteristics such as relative size. These diagnostics tests show that the RDD is valid for all-stock deals.

B. Main results

We start with a plot in Figure 3 of local sample means (i.e., the dots in the graph) of all-stock acquirer CAR3 using non-overlapping evenly spaced bins on each side of the 20% threshold. The solid lines are smoothed regression lines based on quadratic polynomial models estimated separately on the two sides of the 20% threshold, and there are twenty bins on each

[11] The following example illustrates that acquirer management cannot *precisely* control the number of shares issued due to the complexity of target firm's capital structure and its outstanding equity compensation. PSINet Inc., in filling its S-4 to register the number of shares issued for its stock acquisition of Metamor Worldwide Inc., states, "The number of shares to be registered represents the maximum aggregate number of shares of the registrant's common stock that may be issued in connection with the merger, consisting of shares of PSINet common stock issued for (a) 34,641,443 shares of Metamor Worldwide, Inc. common stock currently outstanding, (b) up to 4,898,142 shares of Metamor common stock that may be issued prior to the merger pursuant to Metamor's stock option plans, (c) up to 350,000 shares of Metamor common stock that may be issued prior to the merger pursuant to Metamor's employee stock purchase plan, and (d) up to 5,388,912 shares of Metamor common stock that may be issued prior to the merger upon the conversion of Metamor's outstanding 2.94% Convertible Subordinated Notes."

side with a bin width equal to 1%. The plot shows a striking discontinuous jump in acquirer CAR3, right at the 20% threshold: The acquirers that intend to issue just above (below) the 20% threshold have a mean CAR3 of 4.9% (0.20%).

Table 7 Panel A provides summary statistics for the sample employed in the RDD analysis based on the optimal bandwidth of Imbens and Kalyanaraman (IK, 2011).[12] The mean acquirer CAR3 is 1.1% and the median is -0.1%. The mean/median market capitalization of acquirers is $3.3 billion /$433 million.

Panel B presents RDD estimates of the treatment effect using local linear regression models on both sides of the threshold with a triangular kernel and for different bandwidths. The average treatment effect is positive and significant, and ranges from an increase of 4.3% to 6.9% in acquirer CAR3, depending on the bandwidth used.[13] Cuňat, Gine, and Guadalupe (2012) find that adopting a governance proposal increases shareholder value by 2.8%. Holderness (2016) shows that the increase in firm value associated with shareholder voting compared with unilateral issuances by management is 4.2%. Our numbers are roughly consistent with those from prior studies. These announcement period return increases are economically meaningful. For example, using the IK bandwidth, a 4.3% increase in CAR3 around the merger announcement, for an average acquirer with a market capitalization of $3.3 billion in the sample, translates into a value increase of $140 million for acquirer shareholders.

[12] Based on the IK bandwidth of approximately 15%, 974 deals are used as the control group, and 276 deals are used as the treatment group, or roughly half of the full sample. Based on the fixed bandwidth of 6%/8%/10%, 360/502/679 deals are used in estimation. For comparison, the "Discontinuity Sample" in Chava and Roberts (2008) is about 40% of their full sample.

[13] Since stock prices are forward looking, the treatment effect could also incorporate the likelihood of deal completion. In unreported analyses, we compare the likelihood of deal completion in the two subsamples (the two adjacent bins used in our estimation), and find no significant difference.

To gain further insight into the RDD analysis, we next run OLS regressions on the indicator variable *Vote* that takes the value of one if shareholder voting is required and zero otherwise, and firm and deal controls using different subsamples with the percent of shares issued centered around the 20% threshold (Chava and Roberts, 2008; Cuňat, Gine, and Guadalupe, 2012; Krishnan, Nandy, and Puri, 2015).

Panel C presents the results. Column (1) presents the results from the OLS regressions using a sample of deals in which the percent of shares issued falls within the band of [14%, 26%] centered at the threshold. The coefficient on *Vote* is positive and significant at 0.03, suggesting that shareholder voting is associated with an increase in acquirer announcement returns of 3%. Column (2) presents the regression results using a sample of deals in which the percent of shares issued falls within the band of [12%, 28%] centered at the threshold. The coefficient on *Vote* is positive and significant at 0.02, with a smaller standard error than that in Column (1). As the band grows, more and more deals in which the percent of shares issued is farther from the 20% threshold are included in the estimation, and the effect of shareholder voting becomes smaller. The effect, although with the right sign, becomes insignificant in Column (4) when all-stock deals with less than 35% of shares issued are included. These results highlight the importance of using the RDD analysis to uncover the causal effect of shareholder voting on acquirer announcement returns. These results also help reconcile our findings with prior studies that find no significant value effect from shareholder voting. These earlier studies do not properly account for the sharp discontinuity around the 20% threshold; instead, they employ the full sample of stock deals, giving equal weight to every observation that increasingly differs as the running variable takes a value farther from the threshold (see, for example, Hsieh and Wang, 2008; Kamar, 2011).

We conduct a number of robustness checks on our main findings (see Appendix IA5 and IA6). First, we employ quadratic polynomial models on both sides of the threshold to estimate the average treatment effect. Second, we incorporate pre-determined firm and deal characteristics in estimation in order to reduce the sampling variability in the RDD estimate (Lee and Lemieux, 2010). Third, we conduct falsification tests, estimating the treatment effect around some pseudo thresholds other than the regulatory threshold of 20% (Lee and Lemieux, 2010; Roberts and Whited, 2013). We find that using pseudo thresholds does not generate any significant treatment effect. Finally, we generalize the treatment effect beyond a narrow band around the 20% threshold (Angrist and Rokkanen, 2015), and find that the treatment effect remains in a broader sample.

In summary, Table 7 and these robustness tests provide strong evidence in support of the shareholder voting hypothesis that shareholder voting in M&As is value enhancing.

C. A quasi-natural experiment

Using all-stock deals allows us to establish the validity condition for the RDD (i.e., acquirer management cannot *precisely* manipulate the running variable conditional on doing an all-stock deal). Nonetheless, the concern remains that since acquirer management has different payment options, its choice of all-stock payment might correlate with the outcome variable we examine. To address this concern, we take advantage of the accounting rule change over our sample period that makes the choice of all-stock payment largely exogenous.

The Statements of Financial Accounting Standards (SFAS) 141 and 142 introduced two major reforms in 2001: abolishing the pooling of interests method and goodwill amortization.[14]

[14] SFAS 141 replaced goodwill amortization with impairments (i.e., goodwill is subject to annual impairment tests and would be expensed if there were a goodwill impairment).

Before 2001, M&A accounting was done by either the purchase or pooling of interests method. Under the pooling of interests method, an acquirer simply adds a target firm's book assets and liabilities to its balance sheets, and no goodwill and subsequent expenses would be recognized. The purchase method requires an acquirer to estimate the fair market value of a target firm; any difference between the deal value and target fair market value would be recognized as goodwill. Put differently, under the pooling method, book value of the target firm's assets and book value of the acquirer's assets combine; under the purchase method, market value of the target firm is reported on the acquirer's balance sheet, resulting in a higher asset value and higher subsequent depreciation expense for the combined firm. Another significant difference between pooling and purchase involves the day on which target net income is taken into account in the combined firm's financial statements. Pooling requires such consideration from the beginning of the fiscal year; the purchase method begins with the acquisition date. Opting for a pooling or purchase method thus would have different impacts on the financial performance of the combined firm. The purchase method and its associated asset reevaluation and impairment tests have negative impacts on earnings per share, return on equity, and return on assets (see an illustrative example in Reda, 1999). Not accounting for the target's revenues between the start of the fiscal year and the acquisition date could also alter the newly merged firm's initial performance, assuming these revenues were significant. The pooling of interests method is thus much favored by acquirer management.

To qualify for using the pooling of interests method, acquirers needed to meet a number of conditions listed in the Accounting Principles Board Opinion No. 16 Business Combinations (APB 16: Business Combinations, effective since 1970). In a nutshell, the only way to qualify for pooling accounting was to pay at least 90% of the consideration in stock, because combining

existing voting common stock interests through the *exchange of stock* is the essence of a business combination accounted for by the method.

On April 21, 1999, the Financial Accounting Standards Board (FASB) announced that it was eliminating the pooling method—which firms had deeply valued—as of July 1, 2001; thereafter, deals with more than 90% of their consideration in stock would no longer be qualified to use this method.[15] This change in M&A accounting provides a quasi-natural experiment in which all-stock deals initiated prior to the change were largely exogenous to the outcome variable that we examine, as the payment choice was primarily driven by accounting considerations. De Bodt, Cousin, and Roll (2016) attribute the sharp drop in all-stock deals after 2001 to the FASB's rule changes.

Table 8 presents the results using this quasi-natural experiment. Panel A presents the treatment effect estimated using all-stock deals over the period 1995-1998 before the FASB's elimination of the pooling method. Panel B presents the treatment effect estimated using all-stock deals over the period 1995-2000 before the pooling method was eliminated. The average treatment effect is positive and significant and ranges between 2.8% to 8.6% in announcement period returns, depending on the bandwidth used and the sample period used.

In summary, using subsamples in which the choice of all-stock payment is mostly driven by accounting considerations, we still find a significant treatment effect of shareholder voting on deal quality.

[15] FASB Statement No. 141 offers the following reasons for the change in accounting methods for M&As: 1) analysts and other users of financial statements reported difficulty in comparing the financial results of entities because different methods of accounting for business combinations were used; 2) users of financial statements also expressed a need for better information about intangible assets because those assets were an increasingly important economic resource for many entities and were an increasing proportion of the assets acquired in many business combinations; and 3) management stated that the differences between the pooling and purchase methods of accounting for business combinations affected competition in markets for M&As. For more detailed information about FASB Statement No. 141, see http://www.fasb.org/summary/stsum141.shtml.

VI. Additional Investigation

So far, we have established a positive and significant treatment effect of shareholder voting on acquirer price reaction at the merger announcement. In this section, we explore possible cross-sectional variations in this treatment effect and underlying mechanisms.

A. Heterogeneity in the treatment effect of shareholder voting

Prior literature shows that institutional investors as a group are quite active in improving corporate governance practices and addressing agency problems (see the survey by Gillan and Starks, 2003; Yermack, 2010). In our setting, the sheer complexity and volume of relevant information associated with large M&A deals make it unlikely that an average individual shareholder could perform a thorough analysis and thereby vote informatively. In contrast, institutional investors have the expertise and resources to conduct due diligence, engage in behind-the-scenes interventions, and vote informatively and/or seek recommendations from proxy advisory firms (Burch, Morgan, and Wolf, 2004; Cuňat, Gine, and Guadalupe, 2012; Iliev, Lins, Miller, and Roth, 2015; Malenko and Shen, 2016; McCahery, Sautner, and Starks, 2016). We thus expect that the value impact of shareholder voting is concentrated among acquirers with a strong presence of institutional investors.

Because information asymmetry may exacerbate any underlying agency problems in M&As by making them more difficult to detect (Holderness, 2016), we expect that the need for shareholder scrutiny is greater, and hence the potential for value creation is larger, in deals involving opaque targets. Thus, an opaque target firm with greater valuation uncertainty presents acquirer shareholders with a much more valuable opportunity to access and analyze otherwise hard-to-obtain information about the target than a transparent one.

We employ two proxies for the degree of information asymmetry regarding targets. The first is target listing status. Private targets have less available information and greater valuation uncertainty than their public counterparts due to a lack of public filings, limited media coverage, and no alternative valuation metrics such as stock prices, analyst forecasts, and management guidance, which leaves more potential for institutions to add value through their monitoring effort (Roosenboom, Schlingemann, and Vasconcelos, 2014). The second proxy is analyst coverage on public targets. Targets with low analyst coverage have less firm-specific information available to the market and thus suffer from greater information asymmetry (Hong, Lim, and Stein, 2000). Table 9 presents heterogeneity in the treatment effect of shareholder voting.

Panel A compares the two subsamples of all-stock acquirers based on their institutional ownership. In the high institutional ownership subsample (i.e., institutional ownership above the sample median), we show a positive and economically significant treatment effect: Shareholder voting contributes to a 9% increase in acquirer value (using the IK bandwidth). In contrast, in the low institutional ownership subsample, we find no significant treatment effect of shareholder voting, although the coefficient estimates are positive. These results are consistent with our conjecture that the value effect of shareholder voting is concentrated in acquirers with greater institutional ownership.[16]

Panel B compares the treatment effect in the subsample of acquirers buying private targets with that in the subsample of acquirers buying public targets. We show that the treatment effect of shareholder voting is large and statistically significant for acquirers buying private

[16] In Appendix IA7 in the Internet Appendix, we examine post-merger operating performance, an alternative indicator of deal quality. We repeat the RDD analysis for average ROA over two- and four-years after deal completion and find significant positive treatment effects among acquirers with high institutional ownership, suggesting greater synergies in those deals.

targets. For example, using the IK bandwidth, an 8% increase in CAR3 indicates a value increase of $400 million for acquirer shareholders, given that the average market value of acquirers buying private targets is $5.0 billion (untabulated). In contrast, the treatment effect is small and statistically insignificant for acquirers buying public targets. Panel C repeats the analysis using subsamples of acquirers buying targets with different levels of analyst coverage and produces similar findings. Overall, the results highlight how shareholder voting can help mitigate investment distortions (e.g., corporate acquisitions) arising from information asymmetry.

In summary, Table 9 shows that the positive treatment effect is concentrated among acquirers with high institutional ownership and/or among acquirers buying opaque targets.

B. The underlying mechanisms

We now explore possible economic mechanisms underlying the positive treatment effect. A natural starting point is the idea that the requirement of shareholder voting might discipline acquirer management to choose deals with greater synergistic gains. Following Bradley, Desai, and Kim (1988), we estimate synergistic gains as the weighted average of acquirer and target CAR3, weighted by their respective market capitalization 50 days prior to the merger announcement—combined CAR3.

Another channel we explore is the idea that acquirer management might use the requirement of shareholder voting to strengthen its bargaining position against target management. Following Ahern (2012), our measure of the acquirer's bargaining position is the difference in dollar gains between the acquirer and the target at the time of the merger announcement, divided by the sum of the acquirer's and the target's market capitalization 50 days prior to the announcement. The acquirer's / target's dollar gain is the acquirer's / target's

CAR3 times its market capitalization two days prior to the merger announcement. This measure captures acquirer management's bargaining position vis-à-vis target management.

The final channel that we explore is the idea that the requirement of shareholder voting might constrain acquirer management in the amount they can offer. Notably, the bargaining and premium channels are two sides of the same coin: Having to get shareholder support improves acquirer management's bargaining position, allowing it to pay less. Following Wang and Xie (2009), offer premium is computed as the difference between the offer price and the target price one week prior to the merger announcement divided by the target price. By construction, this analysis is based on a sample of deals with public targets (so that we can have measures for synergies, bargaining position, and offer premium). Given our earlier findings that the positive value effect mainly comes from acquirers buying low-coverage public targets, we expect to see stronger results in acquirers buying those targets. Table 10 presents the results separated by acquirers buying low-coverage targets and acquirers buying high-coverage targets.

Panel A reports RDD estimates of the difference in combined CAR3—our measure of synergies. We show that the difference in synergistic gains between deals requiring shareholder voting and those not requiring it is at least 5.5%, and is both statistically and economically significant only among acquirers buying low-coverage targets. Panel B presents RDD estimates of the difference in acquirer management's bargaining position. The difference in acquirer management's bargaining position between deals requiring shareholder voting and those not requiring it is at least 6.8%, and is both statistically and economically significant only in the sample of acquirers buying low-coverage targets. Panel C presents RDD estimates of the difference in offer premium. We show that the difference in offer premium between deals requiring shareholder voting and those not requiring it is large and significant when using the IK

bandwidth in the sample of acquirers buying low-coverage targets. Specifically, the difference in offer premium is 16.7%. In contrast, there is no difference in offer premium between deals requiring shareholder voting and those not requiring it in the sample of acquirers buying high-coverage targets.

Taken together, results in Table 10 provide evidence that shareholder voting adds value because it disciplines acquirer management to seek deals with greater synergies and strengthens its bargaining position against target management, which prevents overpayment, consistent with our shareholder voting hypothesis.

VII. Conclusions

In this paper, we examine whether and how the requirement of acquirer shareholder voting affects deal quality. Using a hand-collected sample of stock deals over the period 1995-2015, we find evidence that acquirer management substitutes stock with cash to bypass shareholder voting, and that deals bypassing shareholder voting have lower announcement returns than those requiring shareholder voting. Using exchange listing rules as our identification strategy, we find a large and significant jump in acquirer announcement returns at the 20% threshold in all-stock deals when shareholder voting is mandatory. We further show that this positive effect is concentrated among acquirers with high institutional ownership and among acquirers buying opaque targets. We conclude that the requirement of shareholder voting is effective in addressing agency problems in M&As.

Our findings have important implications for securities regulators, stock exchanges, and the investing public. In November 2015, the NASDAQ requested comments on the 20% rule, specifically regarding whether it was too restrictive and whether the percentage should be higher

(i.e., 25%). Institutional investors such as the California Public Employees' Retirement System—the largest public pension fund in the U.S.—were in firm support of the *status quo* and argued that any weakening of the NASDAQ's 20% rule is inconsistent with its goal of preserving and strengthening the quality of its market to protect investors.[17] Our findings in this paper suggest that this listing requirement should be expanded for all large deals instead of being conditional on stock issuance, because shareholder voting leads to value-enhancing corporate decisions.

[17] https://www.calpers.ca.gov/docs/2016-02-15-shareholder-approval-rules.pdf.

Appendix A. Variable definitions

All Compustat firm characteristics are measured as of the fiscal year-end before the merger announcement, and all continuous variables are winsorized at the 1st and 99th percentiles. All dollar values are in 1995 dollars.

Variable	Definition
Vote avoidance	An indicator variable that takes the value of one if a deal has a mixed payment with the percent of shares issued less than 20% of shares outstanding and the ratio of deal value (excluding liabilities assumed) to acquirer market capitalization between 20% and 35%, and takes the value of zero if a deal has an all-stock payment with the percent of shares issued more than 20%.
Vote	An indicator variable that takes the value of one if a deal has an all-stock payment with the percent of shares issued more than 20% of shares outstanding, and zero otherwise.
Percent of shares issued	The number of new shares to be issued divided by the total number of shares outstanding.
CAR3	Cumulative abnormal return in a three-day window surrounding the merger announcement using market-adjusted returns from the CRSP value-weighted index (in percentage points).
Institutional ownership	Institutional ownership reported in 13F, measured at the most recent quarter-end prior to the merger announcement (in percentage points).
Total assets	Book value of total assets.
Market capitalization	The stock price 50 days prior to the merger announcement (i.e., day -50) times the number of shares outstanding.
M/B	Market value of equity divided by book value of equity.
Leverage	Book value of debt divided by book value of assets.
Cash	Cash holdings divided by book value of assets.
ROA	Net income divided by book value of assets.
Prior year return	Buy-and-hold return in the year prior to the merger announcement minus the buy-and-hold return on the CRSP value-weighted index over the same period (in percentage points).
Deal value	Transaction value as reported by SDC.
Relative size	Deal value dividend by the acquirer's book value of assets.
Diversifying	An indicator variable that takes the value of one if the acquirer is not from the same two-digit SIC industry as the target firm, and zero otherwise.
Tender offer	An indicator variable that takes the value of one if SDC reports that the deal is a tender offer, and zero otherwise.
Public target	An indicator variable that takes the value of one if target public status reported by SDC is 'Public,' and zero otherwise.
Board size	The number of directors on a corporate board.
Board independence	The fraction of directors on a corporate board that is independent.
CEO-COB duality	An indicator variable that takes the value of one if a CEO is also Chairman of the Board (COB), and zero otherwise.
Analyst coverage	The number of analysts following a firm as reported by the Institutional Brokers Estimate System (I/B/E/S) one month prior to the merger announcement.
Combined CAR3	Weighted average of the acquirer's CAR3 and the target's CAR3, with the weight being their respective market capitalization 50 days prior to the merger announcement (i.e., day -50) (Bradley, Desai, and Kim (1988)).
Acquirer's bargaining position	The difference in dollar gains between the acquirer and the target, divided by the sum of the acquirer's and the target's market capitalization 50 days prior to the merger announcement. The acquirer's (target's) dollar gain is the acquirer's (target's) CAR3 times its market capitalization two days prior to the merger announcement (i.e., day -2) (Ahern (2012)).
Offer premium	The difference between the offer price and the target price one week prior to the merger announcement divided by the target price.

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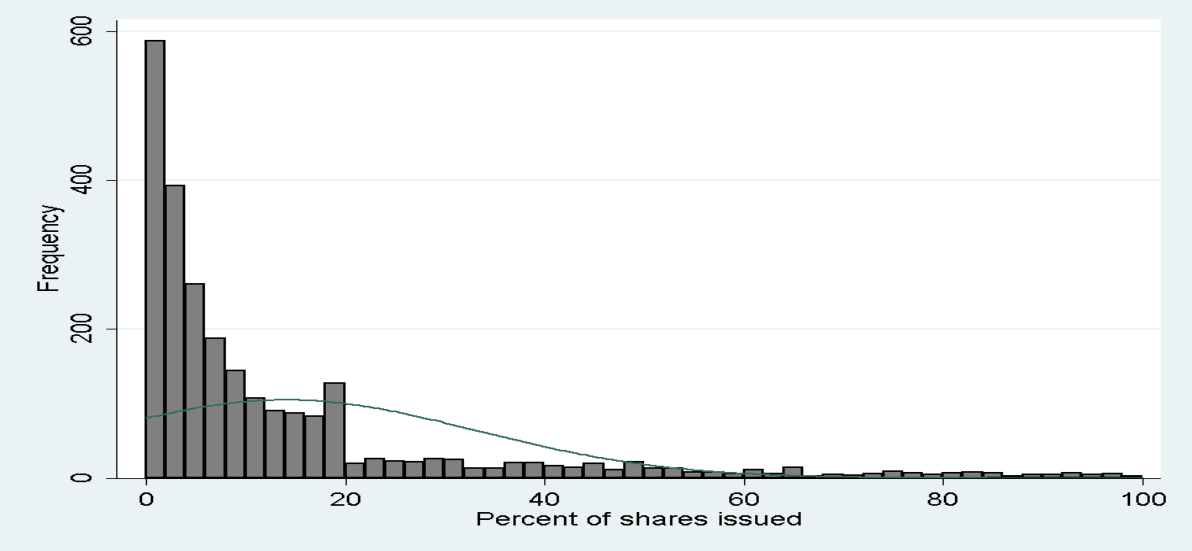
Figure 1. Frequency distribution of the percent of shares issued

The sample consists of 5,223 stock deals between 1995 and 2015 from the Thomson One Banker SDC database. This figure presents the frequency distribution of the percent of shares issued, represented by the line in each graph. Panel A plots the sample of 2,535 deals involving mixed payment. Panel B plots the sample of 2,688 deals involving all-stock payment.

Panel A: Frequency distribution for the mixed-payment sample



Panel B: Frequency distribution for the all-stock sample

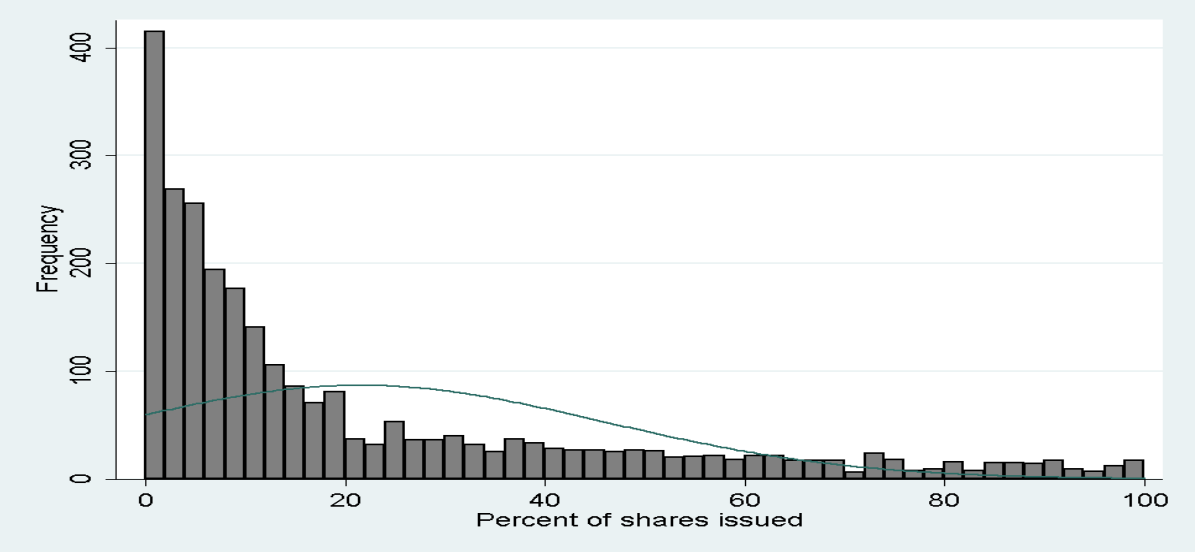
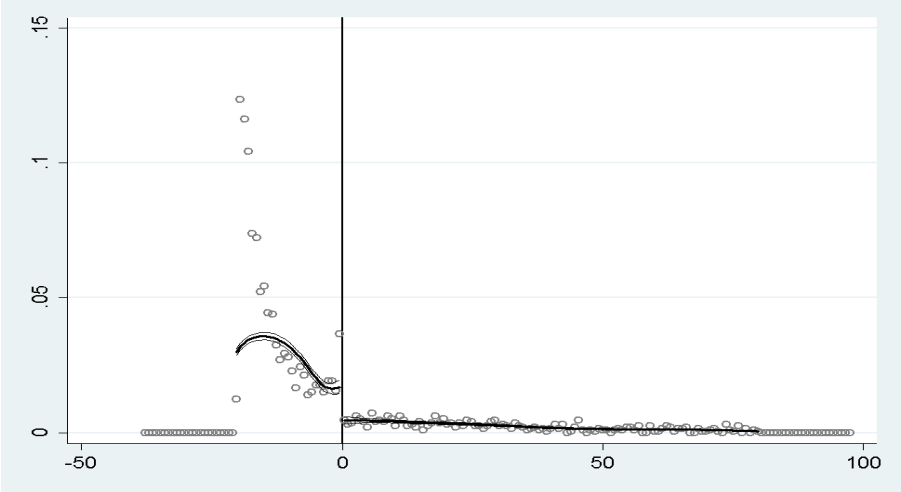


Figure 2. McCrary density function for the percent of shares issued

The sample consists of 5,223 stock deals between 1995 and 2015 from the Thomson One Banker SDC database. This figure presents the McCrary density function of the percent of shares issued. The cutoff '0' on the x-axis represents the 20% threshold. Panel A plots the sample of 2,535 deals involving mixed payment. Panel B plots the sample of 2,688 deals involving all-stock payment.

Panel A: McCrary density function for the mixed-payment sample



Panel B: McCrary density function for the all-stock sample

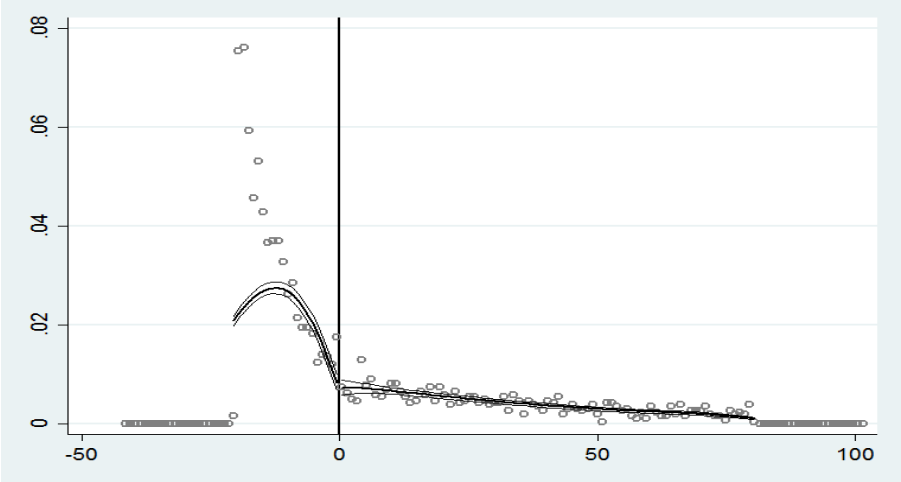


Figure 3. Acquirer announcement returns around the 20% threshold

The sample consists of 2,131 all-stock deals with the percent of shares issued in the range between 0 and 40%. This figure presents a plot of local sample means (i.e., the dots in the graph) of acquirer CAR3 using non-overlapping evenly spaced bins on each side of the 20% threshold (# bins = 20). The lines are smoothed regression lines based on quadratic polynomial models estimated separately on the two sides of the 20% threshold.

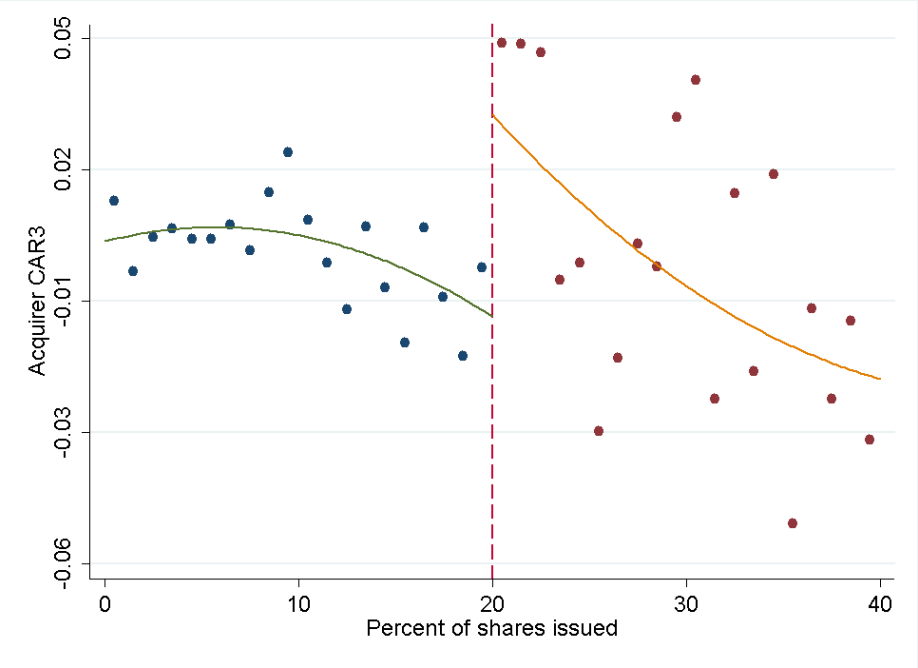


Table 1. Sample formation

This table lists steps taken to form the sample of stock deals between 1995 and 2015 from the Thomson One Banker SDC database.

Sample filters	# of deals
Date Announced: 01/01/1995 to 12/31/2015 & Form of the Deal: AA, AM, M	184,503
Acquirer Public Status: P	84,488
Percent of Shares Held at Announcement: Less Than 50%	84,458
Percent of Shares Acquirer Seeking to Own after Transaction: 100%	79,713
Target Public Status: V, P, S	79,326
Deal Value ($ Mil): 1 (1995 dollar) & Return Data on CRSP & Basic Accounting Data on Compustat	26,513
Relative Size > 1%	21,866
Share Issuance > 0	4,810
Exclude Limited Partnerships Traded on NYSE, AMEX, and NASDAQ	4,282
Add back Deals with Stock Payment but Missing or with Zero Share Issuance (1,230 deals)	5,512
Exclude Share Issuance >100%	5,337
Exclude Deals That Issue More Than 20% but Shareholder Voting Not Required and Deals That Issue Less than 20% but Shareholder Voting Required	5,223

Table 2. Sample distribution over time

The sample consists of 5,223 stock deals between 1995 and 2015 from the Thomson One Banker SDC database. Panel A presents the temporal distribution for the full sample. Panel B presents the temporal distribution by method of payment.

Panel A: The full sample

Year	# of deals	Require shareholder voting	Do not require shareholder voting
1995	316	95	221
1996	493	130	363
1997	637	175	462
1998	627	156	471
1999	508	119	389
2000	499	116	383
2001	295	88	207
2002	184	40	144
2003	175	45	130
2004	194	49	145
2005	193	42	151
2006	162	37	125
2007	135	28	107
2008	112	28	84
2009	95	36	59
2010	83	19	64
2011	70	19	51
2012	91	25	66
2013	76	28	48
2014	150	49	101
2015	128	35	93
Total	5,223	1,359	3,864

Panel B: By method of payment

	All-stock payment			Mixed payment		
Year	# of deals	Require shareholder voting	Do not require shareholder voting	# of deals	Require shareholder voting	Do not require shareholder voting
1995	237	78	159	79	17	62
1996	347	84	263	146	46	100
1997	407	132	275	230	43	187
1998	394	117	277	233	39	194
1999	339	79	260	169	40	129
2000	329	88	241	170	28	142
2001	144	56	88	151	32	119

2002	58	24	34	126	16	110
2003	67	26	41	108	19	89
2004	61	32	29	133	17	116
2005	50	22	28	143	20	123
2006	39	19	20	123	18	105
2007	31	16	15	104	12	92
2008	27	14	13	85	14	71
2009	28	19	9	67	17	50
2010	20	8	12	63	11	52
2011	16	9	7	54	10	44
2012	16	10	6	75	15	60
2013	19	15	4	57	13	44
2014	36	28	8	114	21	93
2015	23	16	7	105	19	86
Total	2,688	892	1,796	2,535	467	2,068

Table 3. Summary statistics

The sample consists of 5,223 stock deals between 1995 and 2015 from the Thomson One Banker SDC database. Panel A presents summary statistics for the full sample. Panel B compares the subsample of 1,359 deals requiring shareholder voting (i.e., the percent of shares issued ⩾ 20%) with the subsample of 3,864 deals that do not require shareholder voting (i.e., the percent of shares issued < 20%). The last two columns present the tests of differences in means and medians between the two subsamples. Panel C presents the correlation matrix. Definitions of all variables are provided in Appendix A. ***, **, * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Panel A: The full sample

Variable	Mean	10th percentile	Median	90th percentile	Std Dev
CAR3	0.010	-0.091	0.002	0.111	0.110
Institutional ownership	0.462	0.074	0.466	0.826	0.292
Total assets	4260.80	32.06	304.94	5629.01	30536.04
Market cap	4615.10	50.40	430.06	6755.60	22235.93
M/B	7.971	1.235	2.940	10.820	93.667
Leverage	0.136	0.000	0.047	0.400	0.185
Cash	0.157	0.010	0.079	0.415	0.187
ROA	-0.067	-0.336	0.017	0.124	0.433
Prior year return	0.101	-0.534	0.078	0.779	0.596
Deal value	776.02	5.64	51.29	1062.57	4222.91
Relative size	0.473	0.021	0.145	1.000	2.193
Diversifying	0.346	0	0	1	0.476
Tender offer	0.011	0	0	0	0.107
Public target	0.338	0	0	1	0.473

Panel B: Comparing deals with shareholder voting versus those without

	Require shareholder voting (N = 1,359)			Do not require shareholder voting (N = 3,864)			Test of difference	
Variable	Mean	Median	Std Dev	Mean	Median	Std Dev	t-test	Wilcoxon test
	(1)	(2)	(3)	(4)	(5)	(6)	(1) - (4)	(2) - (5)
CAR3	0.001	-0.010	0.138	0.013	0.004	0.098	-0.012***	-0.014***
Institutional ownership	0.424	0.402	0.310	0.475	0.484	0.284	-0.0510***	-0.082***
Total assets	6876.84	433.32	45206.24	3340.72	269.25	23212.53	3536.12***	164.08***
Market cap	3206.63	316.14	11985.47	5110.48	465.54	24838.20	-1903.85***	-149.40***
M/B	8.622	2.227	125.280	7.744	3.270	79.796	0.878	-1.042***
Leverage	0.160	0.074	0.198	0.127	0.039	0.180	0.033***	0.035***
Cash	0.128	0.049	0.179	0.167	0.096	0.188	-0.039***	-0.047***
ROA	-0.069	0.012	0.368	-0.066	0.021	0.454	-0.003	-0.009***
Prior year return	0.000	0.026	0.570	0.137	0.100	0.601	-0.137***	-0.074***
Deal value	1989.56	171.24	7474.16	349.21	34.93	1941.17	1640.35***	136.32***
Relative size	1.048	0.456	4.132	0.271	0.111	0.583	0.776***	0.345***
Diversifying	0.276	0	0.447	0.370	0	0.483	-0.094***	0***
Tender offer	0.007	0	0.081	0.013	0	0.114	-0.007*	0*
Public target	0.677	1	0.468	0.218	0	0.413	0.459***	1***

Panel C: Pearson correlation

	CAR3	Institutional ownership	Total assets	Market cap	M/B	Leverage	Cash	ROA	Prior year return	Deal value	Relative size	Diversi-fying	Tender offer	Public target
CAR3	1													
Institutional ownership	-0.07	1												
Total assets	-0.04***	0.05***	1											
Market cap	-0.04***	0.08***	0.32***	1										
M/B	0.06***	0.01	-0.01	0.01	1									
Leverage	-0.01	0.16***	0.00	-0.04**	0.05***	1								
Cash	0.00	-0.04***	-0.08***	-0.07***	0.01	-0.26***	1							
ROA	0.01	0.17***	0.03**	0.06***	-0.05***	0.06***	-0.26***	1						
Prior year return	0.01	0.12***	-0.01	0.07***	0.01	0.00	0.03**	-0.01	1					
Deal value	-0.06***	0.08***	0.43***	0.37***	0.01	0.05***	-0.08***	0.04***	0.02*	1				
Relative size	0.01	-0.02	-0.02	0.01	0.08***	-0.03**	0.08***	-0.16***	0.08***	0.13***	1			
Diversifying	0.03**	-0.01	0.00	0.06***	0.00	0.03*	-0.01	0.00	0.03**	-0.03**	-0.01	1		
Tender offer	-0.03**	0.06***	0.00	0.01	0.00	0.01	-0.02	-0.01	0.00	0.01	0.00	0.02	1	
Public target	-0.20***	0.10***	0.14***	0.10***	0.00	0.08***	-0.18***	0.08***	-0.03**	0.20***	0.05***	-0.11***	0.15***	1

Table 4. Explaining vote avoidance

This table presents estimates from a logistic regression in which the dependent variable is an indicator variable, *Vote avoidance*, that takes the value of one if a deal has a mixed payment with the percent of shares issued less than 20% of shares outstanding and the ratio of deal value (excluding liabilities assumed) to acquirer market capitalization between 20% and 35%, and takes the value of zero if a deal has an all-stock payment with the percent of shares issued more than 20%. The sample consists of mixed-payment deals issuing less than 20% with the ratio of deal value (excluding liabilities assumed) to acquirer market capitalization between 20% and 35% (i.e., *Vote avoidance* = 1, and shareholder voting is not required) and all-stock deals issuing more than 20% (i.e., *Vote avoidance* = 0, and shareholder voting is required). The logistic regression uses different subsamples with the percent of shares issued centered at the 20% threshold. For example, in Column (1), deals with the percent of shares issued falling within the band of [14%, 26%] centered at the threshold are used in the regression. Panel A presents the baseline results. Panel B controls for additional measures of governance. The heteroskedasticity-consistent standard errors (in parentheses) account for possible correlation within a firm cluster. All variables are defined in Appendix A. ***, **, * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Panel A: The baseline specification

	(1)	(2)	(3)	(4)
% of shares issued	[14%, 26%]	[12%, 28%]	[10%, 30%]	[5%, 35%]
Institutional ownership	-3.585***	-3.328***	-2.288***	-0.839
	(1.276)	(1.025)	(0.825)	(0.568)
M/B	-0.169*	-0.125**	-0.101**	-0.025
	(0.090)	(0.058)	(0.046)	(0.043)
Leverage	3.285	3.878***	3.778***	2.668***
	(2.007)	(1.439)	(1.168)	(0.997)
Cash	-1.427	0.640	-0.014	-0.340
	(1.310)	(0.988)	(0.877)	(0.803)
ROA	2.831***	2.532**	1.639**	1.134*
	(1.082)	(0.993)	(0.776)	(0.635)
Prior year return	-0.790*	-0.529	-0.747**	-0.177
	(0.471)	(0.392)	(0.361)	(0.252)
Log(Deal value)	0.332*	0.342**	0.285**	0.158
	(0.180)	(0.148)	(0.125)	(0.097)
Relative size	-0.315	-0.156	0.261	-0.331
	(0.584)	(0.528)	(0.332)	(0.471)
Diversifying	1.116*	0.536	0.861**	0.085
	(0.607)	(0.478)	(0.414)	(0.322)
Public target	-2.390***	-2.476***	-2.355***	-2.105***
	(0.558)	(0.489)	(0.421)	(0.306)
Constant	0.511	-0.548	-0.858	-1.225
	(1.642)	(1.717)	(1.390)	(1.087)
Industry/Year FEs	Yes	Yes	Yes	Yes
Pseudo R2	0.395	0.379	0.369	0.315
Observations	228	301	363	513

Panel B: Controlling for additional measures of corporate governance

	(1)	(2)	(3)	(4)
% of shares issued	[14%, 26%]	[12%, 28%]	[10%, 30%]	[5%, 35%]
Institutional ownership	-5.444***	-3.642***	-2.239**	-0.827
	(1.888)	(1.240)	(1.088)	(0.665)
Board size	-0.392***	-0.103	-0.029	-0.001
	(0.138)	(0.103)	(0.118)	(0.068)
Board independence	-0.022	-0.013	0.002	0.010
	(0.018)	(0.017)	(0.015)	(0.009)
CEO-COB duality	-0.170	0.055	0.220	0.518*
	(0.697)	(0.532)	(0.422)	(0.306)
M/B	-0.101	-0.109*	-0.084*	-0.015
	(0.077)	(0.062)	(0.048)	(0.037)
Leverage	1.012	2.523	2.095*	1.021
	(2.258)	(1.596)	(1.266)	(1.018)
Cash	-2.000	-0.188	-0.881	-0.781
	(1.706)	(1.178)	(0.959)	(0.940)
ROA	1.755*	1.558	0.639	0.483
	(1.011)	(0.997)	(0.653)	(0.678)
Prior year return	-0.789	-0.332	-0.467	0.251
	(0.796)	(0.507)	(0.428)	(0.304)
Log(Deal value)	1.192***	0.699***	0.414*	0.213
	(0.343)	(0.224)	(0.223)	(0.145)
Relative size	-1.427*	-0.547	0.054	-0.434
	(0.801)	(0.744)	(0.375)	(0.527)
Diversifying	0.752	-0.037	0.625	-0.275
	(0.768)	(0.569)	(0.493)	(0.365)
Public target	-3.967***	-3.680***	-3.114***	-2.437***
	(0.974)	(0.803)	(0.581)	(0.399)
Constant	5.117*	6.087***	3.982**	-1.575
	(2.762)	(2.015)	(1.875)	(1.540)
Industry/Year FEs	Yes	Yes	Yes	Yes
Pseudo R2	0.434	0.391	0.371	0.330
Observations	172	223	269	388

Table 5. Vote avoidance and deal quality

This table examines the relation between vote avoidance and deal quality. The dependent variable is acquirer CAR3. The variable of interest is the indicator variable, *Vote avoidance*, that takes the value of one if a deal has a mixed payment with the percent of shares issued less than 20% of shares outstanding and the ratio of deal value (excluding liabilities assumed) to acquirer market capitalization between 20% and 35%, and takes the value of zero if a deal has an all-stock payment with the percent of shares issued more than 20%. The sample consists of mixed-payment deals issuing less than 20% with the ratio of deal value (excluding liabilities assumed) to acquirer market capitalization between 20% and 35% (i.e., *Vote avoidance* = 1, and shareholder voting is not required) and all-stock deals issuing more than 20% (i.e., *Vote avoidance* = 0, and shareholder voting is required). The regression uses different subsamples with the percent of shares issued centered at the 20% threshold. For example, in Column (1), deals with the percent of shares issued falling within the band of [14%, 26%] centered at the threshold are used in the regression. All variables are defined in Appendix A. The heteroskedasticity-consistent standard errors (in parentheses) account for possible correlation within a firm cluster. ***, **, * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

	(1)	(2)	(3)	(4)
% of shares issued	[14%, 26%]	[12%, 28%]	[10%, 30%]	[5%, 35%]
Vote avoidance	-0.038*	-0.031*	-0.035**	-0.030**
	(0.022)	(0.018)	(0.017)	(0.014)
Institutional ownership	0.007	-0.007	-0.021	-0.021
	(0.047)	(0.032)	(0.029)	(0.023)
M/B	0.000	-0.001	-0.001	-0.002
	(0.004)	(0.003)	(0.003)	(0.002)
Leverage	-0.027	-0.049	-0.073	-0.050
	(0.085)	(0.056)	(0.047)	(0.040)
Cash	-0.105	-0.093	-0.078	-0.072
	(0.069)	(0.061)	(0.052)	(0.044)
ROA	-0.105***	-0.105***	-0.098***	-0.062**
	(0.038)	(0.039)	(0.035)	(0.029)
Prior year return	0.009	0.010	0.008	-0.013
	(0.020)	(0.015)	(0.014)	(0.013)
Log(Deal value)	-0.003	-0.001	0.000	0.002
	(0.006)	(0.005)	(0.004)	(0.003)
Relative size	-0.017	-0.016	-0.018	-0.008
	(0.018)	(0.017)	(0.015)	(0.011)
Diversifying	0.010	0.019	0.019	0.019
	(0.028)	(0.024)	(0.020)	(0.015)
Tender offer	-0.006	-0.023	-0.024	-0.020
	(0.041)	(0.046)	(0.037)	(0.031)
Public target	-0.071***	-0.071***	-0.075***	-0.073***
	(0.020)	(0.018)	(0.015)	(0.015)
Constant	0.044	0.050	0.033	0.144***
	(0.049)	(0.042)	(0.041)	(0.030)

Industry/Year FEs	Yes	Yes	Yes	Yes
Observations	228	301	363	513
R-squared	0.406	0.353	0.353	0.290

Table 6. Testing local randomization for baseline characteristics

This table presents balancing tests suggested by Lee and Lemieux (2010) and Roberts and Whited (2013). The sample consists of 2,688 all-stock deals announced between 1995 and 2015 from the Thomson One Banker SDC database. The difference in each baseline characteristic around the 20% threshold is estimated by fitting a local linear regression using a triangular kernel to the left and right of the threshold. All variables are defined in Appendix A. ***, **, * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Variable	Coef.	Std. Err.	Z	P value	Bandwidth
Institutional ownership	0.056	0.069	0.819	0.413	+/- 6
	0.037	0.060	0.609	0.543	+/- 8
	0.029	0.053	0.545	0.586	+/- 10
	0.019	0.040	0.465	0.642	IK (+/- 13.65)
Total assets	245.020	1113.000	0.220	0.826	+/- 6
	393.080	1016.400	0.387	0.699	+/- 8
	421.480	926.760	0.455	0.649	+/- 10
	-57.713	712.070	-0.081	0.935	IK (+/- 12.36)
Market cap	660.450	1473.400	0.448	0.654	+/- 6
	481.260	1293.800	0.372	0.710	+/- 8
	539.340	1143.400	0.472	0.637	+/- 10
	519.280	1165.800	0.445	0.656	IK (+/- 10.03)
M/B	1.761	2.551	0.690	0.490	+/- 6
	2.140	2.366	0.905	0.366	+/- 8
	2.637	2.160	1.221	0.222	+/- 10
	2.920	1.837	1.589	0.112	IK (+/- 13.25)
Leverage	0.035	0.043	0.802	0.420	+/- 6
	0.013	0.036	0.356	0.722	+/- 8
	0.003	0.031	0.111	0.911	+/- 10
	-0.004	0.023	-0.172	0.863	IK (+/- 15.57)
Cash	0.046	0.051	0.890	0.373	+/- 6
	0.042	0.045	0.945	0.345	+/- 8
	0.044	0.039	1.115	0.265	+/- 10
	0.042	0.031	1.349	0.177	IK (+/- 15.05)
ROA	-0.126	0.098	-1.287	0.198	+/- 6
	-0.119	0.085	-1.406	0.160	+/- 8
	-0.108	0.075	-1.448	0.148	+/- 10
	-0.056	0.044	-1.269	0.205	IK (+/- 17.16)
Prior year return	-0.145	0.204	-0.714	0.475	+/- 6
	-0.143	0.172	-0.834	0.404	+/- 8
	-0.089	0.150	-0.597	0.551	+/- 10
	0.046	0.111	0.418	0.676	IK (+/- 15.37)
Deal value	78.768	295.870	0.266	0.790	+/- 6
	54.736	259.490	0.211	0.833	+/- 8
	72.494	230.020	0.315	0.753	+/- 10
	-3.201	149.720	-0.021	0.983	IK (+/- 18.27)
Relative size	0.023	0.189	0.120	0.905	+/- 6

	0.046	0.170	0.271	0.786	+/- 8
	0.102	0.155	0.661	0.509	+/- 10
	0.121	0.122	0.995	0.320	IK (+/- 17.15)
Diversifying	0.005	0.110	0.046	0.964	+/- 6
	-0.021	0.097	-0.218	0.828	+/- 8
	-0.033	0.087	-0.378	0.705	+/- 10
	-0.067	0.072	-0.924	0.355	IK (+/- 14.24)
Tender offer	0.024	0.043	0.557	0.578	+/- 6
	0.012	0.040	0.288	0.773	+/- 8
	0.004	0.037	0.118	0.906	+/- 10
	-0.005	0.022	-0.242	0.809	IK (+/- 19.9)
Public target	0.140	0.117	1.196	0.232	+/- 6
	0.119	0.104	1.138	0.255	+/- 8
	0.118	0.095	1.247	0.212	+/- 10
	0.093	0.076	1.212	0.226	IK (+/- 15.10)

Table 7. Shareholder voting and deal quality

This table presents the effect of shareholder voting on acquirer CAR3. The sample consists of 2,688 all-stock deals announced between 1995 and 2015 from the Thomson One Banker SDC database. Panel A presents summary statistics for the sample used in the RDD analysis based on the optimal bandwidth of Imbens and Kalyanaraman (IK, 2011). There are 974 deals to the left and 276 deals to the right of the 20% threshold. Panel B presents the treatment effect estimated by fitting a local linear regression using a triangular kernel to the left and right of the 20% threshold. The dependent variable is CAR3. Panel C reports OLS regressions of CAR3 using different subsamples with the percent of shares issued centered at the 20% threshold. For example, in Column (1), deals with the percent of shares issued within 3% around the threshold are used in the regression. The variable of interest is the indicator variable, *Vote*, that takes the value of one if a deal has an all-stock payment with the percent of shares issued more than 20% of shares outstanding, and zero otherwise. The heteroskedasticity-consistent standard errors (in parentheses) account for possible correlation within a firm cluster. All variables are defined in Appendix A. ***, **, * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Panel A: Summary statistics for the sample used in the RDD analysis

Variable	Mean	10^{th} percentile	Median	90^{th} percentile	Std Dev
CAR3	0.011	-0.088	-0.001	0.112	0.129
Institutional ownership	0.41	0.07	0.39	0.78	0.28
Total assets	4926.20	32.19	357.33	6088.31	28872.88
Market cap	3255.89	54.45	432.72	5245.48	17913.30
M/B	13.294	1.402	3.132	11.389	180.193
Leverage	0.078	0.000	0.030	0.233	0.102
Cash	0.150	0.013	0.066	0.410	0.183
ROA	-0.069	-0.382	0.012	0.118	0.297
Prior year return	0.33	-0.29	0.20	1.11	0.68
Deal value	456.36	7.48	55.95	704.09	2292.57
Relative size	0.462	0.017	0.157	1.058	0.984
Diversifying	0.306	0	0	1	0.461
Tender offer	0.011	0	0	0	0.105
Public target	0.442	0	0	1	0.497

Panel B: The RDD analysis using local linear regressions

Variable	Coef.	Std. Err.	z	P value	Bandwidth
CAR3	0.069**	0.032	2.144	0.032	+/- 6
CAR3	0.069**	0.028	2.461	0.014	+/- 8
CAR3	0.061**	0.025	2.460	0.014	+/- 10
CAR3	0.043**	0.019	2.270	0.023	IK (+/- 15.01)

Panel C: OLS regressions using different subsamples

	(1)	(2)	(3)	(4)
% of shares issued	[14%, 26%]	[12%, 28%]	[10%, 30%]	[5%, 35%]
Vote	0.030**	0.020*	0.018*	0.013
	(0.013)	(0.011)	(0.010)	(0.008)
Institutional ownership	-0.042	-0.014	0.009	-0.001

	(0.034)	(0.028)	(0.022)	(0.017)
M/B	0.002	0.001	0.001	-0.000
	(0.002)	(0.002)	(0.002)	(0.001)
Leverage	-0.071	-0.086*	-0.073*	-0.050**
	(0.062)	(0.050)	(0.039)	(0.024)
Cash	-0.116***	-0.113***	-0.104***	-0.080***
	(0.045)	(0.041)	(0.033)	(0.025)
ROA	-0.004	-0.028	-0.043*	-0.037**
	(0.028)	(0.027)	(0.024)	(0.017)
Prior year return	0.017	0.022**	0.016*	0.004
	(0.012)	(0.011)	(0.009)	(0.007)
Log(Deal value)	-0.006	-0.006*	-0.006*	-0.004
	(0.005)	(0.004)	(0.003)	(0.002)
Relative size	-0.011	-0.010	-0.000	0.009
	(0.017)	(0.016)	(0.013)	(0.009)
Diversifying	0.011	-0.003	0.006	0.010
	(0.017)	(0.015)	(0.012)	(0.008)
Tender offer	-0.060*	-0.082***	-0.080***	-0.042
	(0.034)	(0.028)	(0.029)	(0.030)
Public target	-0.049***	-0.042***	-0.043***	-0.038***
	(0.013)	(0.010)	(0.009)	(0.007)
Constant	0.029	0.036	0.021	-0.055***
	(0.036)	(0.031)	(0.026)	(0.017)
Industry/Year FEs	Yes	Yes	Yes	Yes
Observations	353	489	662	1,219
R-squared	0.299	0.243	0.236	0.155

Table 8. The effect of shareholder voting: A quasi-natural experiment

This table presents the effect of shareholder voting on acquirer CAR3 during subsample periods when the pooling of interests accounting was allowed. According to the APB Opinion No. 16 Business Combinations effective since 1970, the only way to qualify for pooling accounting was to pay at least 90% of the consideration in stock. Panel A presents the treatment effect estimated using all-stock deals announced between 1995 and 1998 before the FASB announced a proposal to eliminate the pooling method on April 21, 1999. Panel B presents the treatment effect estimated using all-stock deals announced between 1995 and 2000 before the pooling method was eliminated on July 1, 2001. The treatment effect estimated by fitting a local linear regression using a triangular kernel to the left and right of the 20% threshold is reported. All variables are defined in Appendix A. ***, **, * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Panel A: The RDD analysis using local linear regressions for the sample period 1995-1998

Variable	Coef.	Std. Err.	z	P value	Bandwidth
CAR3	0.038	0.029	1.318	0.187	+/- 6
CAR3	0.053**	0.026	2.027	0.043	+/- 8
CAR3	0.047**	0.024	2.000	0.045	+/- 10
CAR3	0.028**	0.014	1.958	0.050	IK (+/- 22.4)

Panel B: The RDD analysis using local linear regressions for the sample period 1995-2000

Variable	Coef.	Std. Err.	z	P value	Bandwidth
CAR3	0.086***	0.027	3.157	0.002	+/- 6
CAR3	0.084***	0.025	3.389	0.001	+/- 8
CAR3	0.071***	0.022	3.173	0.002	+/- 10
CAR3	0.035**	0.015	2.343	0.019	IK (+/- 19.15)

Table 9. Heterogeneity in the treatment effect

This table presents the treatment effect for acquirers with different levels of institutional ownership and for targets with different degrees of information asymmetry. The dependent variables are CAR3. Panel A compares the treatment effect between acquirers with high institutional ownership (i.e., above the sample median) and acquirers with low institutional ownership (i.e., below the sample median). Panel B compares the treatment effect between acquirers with private targets and acquirers with public targets. Panel C compares the treatment effect between acquirers with low-coverage (i.e., below the sample median) public targets and acquirers with high-coverage (i.e., above the sample median) public targets. All variables are defined in Appendix A. ***, **, * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Panel A: Acquirers with high institutional ownership vs. acquirers with low institutional ownership

	High institutional ownership				Low institutional ownership			
Variable	Coef.	Std. Err.	Z	Bandwidth	Coef.	Std. Err.	Z	Bandwidth
CAR3	0.088*	0.046	1.893	+/- 6	0.056	0.064	0.868	+/- 6
CAR3	0.098**	0.043	2.293	+/- 8	0.043	0.051	0.845	+/- 8
CAR3	0.097**	0.039	2.506	+/- 10	0.028	0.043	0.644	+/- 10
CAR3	0.089***	0.034	2.641	IK (+/- 12.63)	0.018	0.024	0.739	IK (+/- 19.71)

Panel B: Acquirers with private targets vs. acquirers with public targets

	Private targets				Public targets			
Variable	Coef.	Std. Err.	Z	Bandwidth	Coef.	Std. Err.	Z	Bandwidth
CAR3	0.154***	0.053	2.928	+/- 6	0.006	0.032	0.180	+/- 6
CAR3	0.142***	0.046	3.114	+/- 8	0.018	0.028	0.650	+/- 8
CAR3	0.121***	0.040	3.025	+/- 10	0.023	0.025	0.927	+/- 10
CAR3	0.077***	0.026	2.911	IK (+/- 18.81)	0.017	0.016	1.103	IK (+/- 14.86)

Panel C: Acquirers with low-coverage public targets vs. acquirers with high-coverage public targets

	Low-coverage public targets				High-coverage public targets			
Variable	Coef.	Std. Err.	Z	Bandwidth	Coef.	Std. Err.	Z	Bandwidth
CAR3	0.041	0.030	1.356	+/- 6	-0.003	0.061	-0.051	+/- 6
CAR3	0.052*	0.027	1.927	+/- 8	-0.000	0.055	-0.001	+/- 8
CAR3	0.052**	0.024	2.172	+/- 10	0.005	0.051	0.099	+/- 10
CAR3	0.039**	0.019	2.038	IK (+/- 14.53)	0.010	0.030	0.344	IK (+/- 14.62)

Table 10. The underlying economic mechanisms

This table presents possible mechanisms underlying the treatment effect of shareholder voting. The sample consists of 1,147 all-stock deals involving public target firms announced between 1995 and 2015 from the Thomson One Banker SDC database. Panel A presents the difference in combined CAR3 between deals that require acquirer shareholder voting and those that do not. Panel B presents the difference in an acquirer's bargaining position vis-à-vis its target between deals that require acquirer shareholder voting and those that do not. Panel C presents the difference in offer premium between deals that require acquirer shareholder voting and those that do not. All variables are defined in Appendix A. ***, **, * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Panel A: Combined CAR3

	Low-coverage public targets				High-coverage public targets			
Variable	Coef.	Std. Err.	Z	Bandwidth	Coef.	Std. Err.	Z	Bandwidth
Combined CAR3	0.058	0.046	1.267	+/- 6	0.007	0.066	0.102	+/- 6
Combined CAR3	0.077*	0.040	1.921	+/- 8	0.010	0.059	0.169	+/- 8
Combined CAR3	0.074**	0.036	2.057	+/- 10	0.017	0.054	0.309	+/- 10
Combined CAR3	0.055*	0.029	1.872	IK (+/- 16.69)	0.018	0.034	0.539	IK (+/- 14.76)

Panel B: The acquirer's bargaining position

	Low-coverage public targets				High-coverage public targets			
Variable	Coef.	Std. Err.	Z	Bandwidth	Coef.	Std. Err.	Z	Bandwidth
Bargaining position	0.077*	0.046	1.665	+/- 6	0.024	0.060	0.402	+/- 6
Bargaining position	0.094**	0.040	2.360	+/- 8	0.019	0.054	0.347	+/- 8
Bargaining position	0.093***	0.036	2.610	+/- 10	0.016	0.049	0.333	+/- 10
Bargaining position	0.068**	0.027	2.498	IK (+/- 14.91)	0.002	0.024	0.072	IK (+/- 14.47)

Panel C: Offer premium

	Low-coverage public targets				High-coverage public targets			
Variable	Coef.	Std. Err.	Z	Bandwidth	Coef.	Std. Err.	Z	Bandwidth
Offer premium	-16.949	19.244	-0.881	+/- 6	4.021	17.507	0.230	+/- 6
Offer premium	-17.775	15.080	-1.179	+/- 8	6.231	15.316	0.407	+/- 8
Offer premium	-18.369	13.161	-1.396	+/- 10	9.173	13.668	0.671	+/- 10
Offer premium	-16.700*	10.020	-1.667	IK (+/- 15.07)	12.169	10.723	1.135	IK (+/- 15.05)

Internet Appendix for
"Vote Avoidance and Shareholder Voting in Mergers and Acquisitions"

Appendix IA1.
Exchange listing rules regarding shareholder voting

1. Shareholder voting policy from the NYSE Listed Company Manual

Section 312.00 Shareholder Approval Policy

312.03 Shareholder Approval

(A) Shareholder approval is required for equity compensation plans.
(B) Shareholder approval is required prior to the issuance of common stock, or of securities convertible into or exercisable for common stock, in any transaction or series of related transactions, to:
    1. a director, officer or substantial security holder of the company (each a Related Party);
    2. a subsidiary, affiliate or other closely-related person of a Related Party; or
    3. any company or entity in which a Related Party has a substantial direct or indirect interest;

If the number of shares of common stock to be issued, or if the number of shares of common stock into which the securities may be convertible or exercisable, exceeds either one percent of the number of shares of common stock or one percent of the voting power outstanding before the issuance.

However, if the Related Party involved in the transaction is classified as such solely because such person is a substantial security holder, and if the issuance relates to a sale of stock for cash at a price at least as great as each of the book and market value of the issuers common stock, then shareholder approval will not be required unless the number of shares of common stock to be issued, or unless the number of shares of common stock into which the securities may be convertible or exercisable, exceeds either five percent of the number of shares of common stock or five percent of the voting power outstanding before the issuance.

(C) Shareholder approval is required prior to the issuance of common stock, or of securities convertible into or exercisable for common stock, in any transaction or series of related transactions if:
    1. the common stock has, or will have upon issuance, voting power equal to or in excess of 20 percent of the voting power outstanding before the issuance of such stock or of securities convertible into or exercisable for common stock; or
    2. the number of shares of common stock to be issued is, or will be upon issuance, equal to or in excess of 20 percent of the number of shares of common stock outstanding before the issuance of the common stock or of securities convertible into or exercisable for common stock.

However, shareholder approval will not be required for any such issuance involving:

- any public offering for cash;
- any bona fide private financing, if such financing involves a sale of:
    - common stock, for cash, at a price at least as great as each of the book and market value of the issuer's common stock; or
    - securities convertible into or exercisable for common stock, for cash, if the conversion or exercise price is at least as great as each of the book and market value of the issuer's common stock.

(D) Shareholder approval is required prior to an issuance that will result in a change of control of the issuer.

(E) Sections 312.03 (b), (c) and (d) shall not apply to issuances by limited partnerships.

Amended: December 31, 2015 (NYSE-2015-02).

312.04 For the Purpose of Section 312.03

For the purpose of Section 312.03:

(A) Shareholder approval is required if any of the subparagraphs of Section 312.03 require such approval, notwithstanding the fact that the transaction does not require approval under one or more of the other subparagraphs.
(B) Pursuant to Sections 312.03 (b) and (c), shareholder approval is required for the issuance of securities convertible into or exercisable for common stock if the stock that can be issued upon conversion or exercise exceeds the applicable percentages. This is the case even if such convertible or exchangeable securities are not to be listed on the Exchange.
(C) The Exchange's policy regarding the need to apply to list common stock reserved for issuance on the conversion or the exercise of other securities is described in Section 703.07.
(D) Only shares actually issued and outstanding (excluding treasury shares or shares held by a subsidiary) are to be used in making any calculation provided for in Sections 312.03 (b) and (c). Shares reserved for issuance upon conversion of securities or upon exercise of options or warrants will not be regarded as outstanding.
(E) An interest consisting of less than either five percent of the number of shares of common stock or five percent of the voting power outstanding of a company or entity shall not be considered a substantial interest or cause the holder of such an interest to be regarded as a substantial security holder.
(F) "Voting power outstanding" refers to the aggregate number of votes that may be cast by holders of those securities outstanding that entitle the holders thereof to vote generally on all matters submitted to the company's security holders for a vote.
(G) "Bona fide private financing" refers to a sale in which either:
    1. a registered broker-dealer purchases the securities from the issuer with a view to the private sale of such securities to one or more purchasers; or
    2. the issuer sells the securities to multiple purchasers, and no one such purchaser, or group of related purchasers, acquires, or has the right to acquire upon exercise or conversion of the securities, more than five percent of the shares of the issuer's common stock or more than five percent of the issuer's voting power before the sale.
(H) "Officer" has the same meaning as defined by the Securities and Exchange Commission in Rule 16a-1(f) under the Securities Exchange Act of 1934, or any successor rule.
(I) "Market value" of the issuer's common stock means the official closing price on the Exchange as reported to the Consolidated Tape immediately preceding the entering into of a binding agreement to issue the securities. For example, if the transaction is entered into after the close of the regular session at 4:00 pm Eastern Standard Time on a Tuesday, then Tuesday's official closing price is used. If the transaction is entered into at any time between the close of the regular session on Monday and the close if the regular session on Tuesday, then Monday's official closing price is used. Please note that an average price over a period of time is not acceptable as "market value" for purposes of Section 312.03.
(J) The issuance of shares from treasury is considered an issuance of shares for purposes of Section 312.03. (See Section 703.01, Part 1, of the Listed Company Manual regarding required notice to the Exchange of issuance of shares from treasury.)
(K) "Early Stage Company" means a company that has not reported revenues greater than $20 million in any two consecutive fiscal years since its incorporation and any Early Stage Company will lose that designation at any time after listing on the Exchange that it files an annual report with the SEC in which it reports two consecutive fiscal years in which it has revenues greater than $20 million in each year.

Amended: December 31, 2015 (NYSE-2015-02).

312.05 Exceptions

Exceptions may be made to the shareholder approval policy in Para. 312.03 upon application to the Exchange when (1) the delay in securing stockholder approval would seriously jeopardize the financial viability of the enterprise and

(2) reliance by the company on this exception is expressly approved by the Audit Committee of the Board.

A company relying on this exception must mail to all shareholders not later than 10 days before issuance of the securities a letter alerting them to its omission to seek the shareholder approval that would otherwise be required under the policy of the Exchange and indicating that the Audit Committee of the Board has expressly approved the exception.

2. Shareholder voting policy from the AMEX Company Guide

Section 712. Acquisitions

Approval of shareholders is required in accordance with §705 as a prerequisite to approval of applications to list additional shares to be issued as sole or partial consideration for an acquisition of the stock or assets of another company in the following circumstances:

a. if any individual director, officer or substantial shareholder of the listed company has a 5% or greater interest (or such persons collectively have a 10% or greater interest), directly or indirectly, in the company or assets to be acquired or in the consideration to be paid in the transaction and the present or potential issuance of common stock, or securities convertible into common stock, could result in an increase in outstanding common shares of 5% or more; or

b. where the present or potential issuance of common stock, or securities convertible into common stock, could result in an increase in outstanding common shares of 20% or more.

NOTE: A series of closely related transactions may be regarded as one transaction for the purpose of this policy. Companies engaged in merger or acquisition discussions must be particularly mindful of the Exchange's timely disclosure policies. In view of possible market sensitivity and the importance of providing investors with sufficient information relative to an intended merger or acquisition, listed company representatives are strongly urged to consult with the Exchange in advance of such disclosure.

Amended: November 25, 2002 (Amex-2002-87).

3. Shareholder voting policy from the NASDAQ Manual: Marketplace Rules

Section 4350 Qualitative Listing Requirements for NASDAQ National Market and NASDAQ SmallCap Market Issuers Except for Limited Partnerships.

(i) Shareholder Approval

(1) Each issuer shall require shareholder approval or prior to the issuance of securities under subparagraph (A), (B), (C), or (D) below:

…

(C) in connection with the acquisition of the stock or assets of another company if:

(i) any director, officer or substantial shareholder of the issuer has a 5% or greater interest (or such persons collectively have a 10% or greater interest), directly or indirectly, in the company or assets to be acquired or in the consideration to be paid in the transaction or series of related transactions and the present or potential issuance of common stock, or securities convertible into or exercisable for common stock, could result in an increase in outstanding common shares or voting power of 5% or more; or
(ii) where, due to the present or potential issuance of common stock, or securities convertible into or exercisable for common stock, other than a public offering for cash:

a. the common stock has or will have upon issuance voting power equal to or in excess of 20% of the voting power outstanding before the issuance of stock or securities convertible into or exercisable for common stock; or
b. the number of shares of common stock to be issued is or will be equal to or in excess of 20% of the number of shares or common stock outstanding before the issuance of the stock or securities; or

…

(2) Exceptions may be made upon application to Nasdaq when:
(A) the delay in securing stockholder approval would seriously jeopardize the financial viability of the enterprise; and
(B) reliance by the company on this exception is expressly approved by the audit committee or a comparable body of the board of directors.

A company relying on this exception must mail to all shareholders not later than ten days before issuance of the securities a letter alerting them to its omission to seek the shareholder approval that would otherwise be required and indicating that the audit committee or a comparable body of the board of directors has expressly approved the exception.

Amended: March 25, 2003.

Appendix IA2.
An example of joint proxy statement/prospectus

FORM S-4

NANOMETRICS INCORPORATED

1550 Buckeye Drive
Milpitas, California 95035

May 22, 2006

Dear Shareholder:

The boards of directors of Nanometrics Incorporated and Accent Optical Technologies, Inc. have unanimously approved the merger of Alloy Merger Corporation, a wholly owned subsidiary of Nanometrics, with and into Accent Optical pursuant to the terms and conditions of an agreement and plan of merger and reorganization, dated as of January 25, 2006, by and among Nanometrics, Alloy Merger Corporation, Accent Optical and Sanford S. Wadler, as Stockholder Agent. The maximum number of shares that Nanometrics would issue in connection with the merger and reserve for issuance upon the exercise of assumed options is approximately 5,212,940 shares of common stock, assuming that the average closing price of Nanometrics common stock for the 10 trading days ending the two consecutive trading days prior to the consummation of the merger is $15.63, which would result in the Accent Optical stockholders holding approximately 27% of the fully diluted shares of Nanometrics common stock immediately after the merger, and Nanometrics shareholders holding approximately 73% of the fully diluted shares of Nanometrics common stock immediately after the merger. The actual number of Nanometrics shares to be issued in the merger depends on several factors. See the sections of the attached joint proxy statement/prospectus captioned "Summary Overview of Merger Agreement and Related Agreements Merger Consideration" beginning on page 12 and "The Merger Agreement Treatment of Securities" beginning on page 85 for a description of how the final number of shares will be determined. Nanometrics common stock trades on the Nasdaq National Market under the symbol "NANO."

Nanometrics and Accent Optical cannot complete the merger unless Nanometrics shareholders approve the issuance of shares of Nanometrics common stock in the merger and Accent Optical stockholders approve and adopt the merger agreement and the merger and approve certain other matters described in the joint proxy statement/prospectus including the escrow agreement and the appointment of a stockholder agent. These matters, among others, are included in the proposals to be voted on at the special meetings of the Nanometrics shareholders and Accent Optical stockholders, to be held on [ ], 2006, as more fully described in this joint proxy statement/prospectus, which also includes more information about Nanometrics, Accent Optical and the merger. You are encouraged to carefully read this joint proxy statement/prospectus in its entirety, including the section entitled Risk Factors beginning on page 29 before voting on the matters set forth in the attached joint proxy statement/prospectus.

The Nanometrics board of directors unanimously recommends that Nanometrics shareholders vote "FOR" Nanometrics proposal to approve the issuance of shares of Nanometrics common stock in the merger.

The Accent Optical board of directors unanimously recommends that the Accent Optical stockholders vote FOR Accent Opticals proposal to approve and adopt the merger agreement and approve the merger, as well as the other matters set forth in the joint proxy statement/prospectus for their consideration.

Sincerely,

John D. Heaton
President and Chief Executive Officer
Nanometrics Incorporated

Bruce C. Rhine
Chairman and Chief Executive Officer
Accent Optical Technologies, Inc.

Appendix IA3.
Our data collection process

With the RDD, it is important to have accurate data on the running variable, which according to the Exchange listing requirement (see Appendix IA1) is "the percent of new shares a firm ***intends*** to issue." For our purpose, the running variable is computed as the number of new shares to be issued divided by the number of shares outstanding one day prior to the merger announcement.[1]

We started our data collection using a sample of deals in which equity issuance was involved. We collected information on the running variable from the following sources:

1. S-4 was the main source to identify "the amount to be registered," which represents the estimated maximum number of shares to be issued by the acquirer in connection with the deal.
2. 8-K was used when we were unable to locate S-4. For example, in the case of private placement, registration may be exempted. Typically, 8-K states, "We intend to issue XXX number of shares" or "The maximum number of shares to be issued is approximately XXX."[1]
3. Occasionally, acquirers only reported the fixed exchange ratio. In this case, we used the fixed ratio times the target's number of shares outstanding (diluted) to calculate the acquirer's number of shares to be issued.
4. Occasionally, acquirers reported the deal value and the portion of the deal financed by stock. For example, RCM Technologies, Inc., a leading provider of business and technology solutions, announced on August 21, 2007, that it had made a proposal to acquire all of the outstanding common stock of Computer Task Group, Inc. in a total equity value of approximately $105 million. The offer was structured as 50% cash and 50% RCM stock. In this case, we used 50% of the deal value divided by the acquirer's share price the day prior to the announcement to calculate the number of shares to be issued.
5. Occasionally, acquirers would announce that after the completion of the merger, the target firm will own approximately XXX% of the combined company. For example, in the deal between Nexstar Broadcasting Group, Inc. and Media General, Inc. (announced on September 28, 2015), 8-K stated, "Media General shareholders would own approximately 26% of the combined company." In this case, we used the following formula: the number of new shares to be issued by the acquirer / (the acquirer's number of shares outstanding (31.616 million) + the number of new shares to be issued by the acquirer) = 26%, to obtain the number of new shares to be issued by the acquirer (11.108 million), and divided by the acquirer's number of shares outstanding on the day prior to the merger announcement (i.e., day -1) to obtain the running variable (i.e., 35%).

We further removed (175) deals in which the running variable exceeded 100% because, in these cases, the acquirer was *de facto* the target after consummation of the deal. We also removed (67) deals in which the running variable was less than 20% but shareholder approval was required[2, 3] and (47) deals in which the running variable

[1] For three-quarters of stock deals involving public targets, we note that the running variable that we collected via various SEC disclosures is higher than the percent of new shares actually issued as reported by SDC, suggesting that acquirers are more likely to register more shares than they actually need, and that using the number reported by SDC will under-estimate the frequency of deals requiring shareholder voting.
[2] Some jurisdictions use different thresholds for requiring acquirer shareholder approval; see, for example, California (the 1/6 rule), Ohio (the 1/6 rule), and New Jersey (the 40% rule). Importantly, 61% of all-stock deals are made by acquirers incorporated in the state of Delaware whose corporate law uses the same 20% rule.
[3] Further, the NASDAQ may aggregate multiple issuances (with each issuing less than 20% of the shares outstanding) for the purpose of the 20% rule based on the timing of these issuances and circumstances such as the commonality of investors and the use of proceeds, leading to a few more cases where the running variable is less than 20% but shareholder approval is required.

was more than 20% but shareholder approval was not required because the acquirers had requested exemption from the exchange.[4, 5]

Finally, we manually verified whether acquirer shareholder voting was required by searching SEC filings including S-4, 8-K, S-4/A, DEFM 14, DEFM 14/A, DEF 14A, DEFS14A, PRES14A, PRER14A, 425, 10-K, and 10-Q.

[4] For example, we noted that in a few short-form merger deals in which acquirers had a small number of insiders with highly concentrated ownership, the acquirers requested an exemption, as they also did in a few cases in which waiting for shareholder approval could result in the acquirer's financial demise. In the latter cases, the acquirers requested "financial viability" exemptions.

[5] These two cases account for 2% of the sample. It is worth noting that when we apply a fuzzy RD analysis to include these deals in the sample, our main findings remain unchanged.

Appendix IA4.
An example of the merger negotiation process

Acquirer: Adobe Systems Inc.
Target: Macromedia.
Link to the SEC filings at:
http://www.sec.gov/Archives/edgar/data/796343/000104746905018172/a2160070zs-4.htm

Manner and basis of converting shares
If you are a Macromedia stockholder, you will receive 1.38 shares of Adobe common stock in exchange for each share of Macromedia common stock you own. The exchange ratio is fixed and, regardless of fluctuations in the market price of Adobe's or Macromedia's common stock, will not change between now and the date the merger is consummated, subject to any adjustments for changes in the number of outstanding shares of Adobe or Macromedia by reason of future stock splits, division of shares, stock dividends or other similar transactions.

Key developments of the merger

September 2004, Bruce R. Chizen, Adobe's CEO and Robert K. Burgess, Macromedia's CEO discussed the possibility of a business combination involving the two companies.

January 11, 2005, the Adobe board of directors held a meeting at which Adobe management made a presentation regarding the possible strategic fit between Macromedia and Adobe.

January 21, 2005, the Adobe board approved initiating discussions with Macromedia regarding a potential business combination and working with Goldman Sachs, as Adobe's financial advisor.

January 28 to February 9, 2005, representatives of Adobe and Macromedia held telephone conferences to negotiate the terms of a nondisclosure agreement and establish the procedures for preliminary financial due diligence.

February 19, 2005, at a meeting of the Adobe board of directors, Goldman Sachs presented a financial analysis relating to the potential business combination. At that meeting, the board authorized Adobe to present a proposal to Macromedia for a potential business combination.

February 22, 2005, Goldman Sachs orally delivered a proposal by Adobe regarding a potential business combination to Morgan Stanley, the financial advisor of Macromedia.

February 23, 2005, the Macromedia board of directors reviewed the status of the discussions with Adobe, including the proposal presented by Adobe. The Macromedia board determined that the proposal made by Adobe was not sufficiently attractive to warrant further consideration.

March 28, 2005, Representatives of Adobe and Goldman Sachs contacted representatives of Morgan Stanley to communicate a new proposal for the potential business combination.

April 2 to April 17, 2005, Representatives of Adobe and Macromedia met numerous times to discuss the potential business combination. During this period, representatives of Macromedia and its advisors engage in due diligence discussions regarding Adobe.

April 5, 2005, Adobe delivered a draft of the merger agreement to Macromedia.

April 8, 2005, Macromedia delivered proposed revisions to the draft merger agreement to Adobe.

April 10 to April 17, 2005, Adobe and Macromedia negotiated the terms of the merger agreement.

April 16, 2005, the Adobe board of directors reviewed the proposed business combination with Macromedia, and determined to propose an exchange ratio of 1.38 shares of Adobe common stock for each share of Macromedia common stock.

April 17, 2005, the Adobe board of directors held a meeting at which the proposed merger was discussed and considered. Goldman Sachs reviewed the financial terms of the proposed merger and delivered its fairness opinion as of the same date, that, as of April 17, 2005 and based on and subject to the factors and assumptions set forth in its opinion, the exchange ratio of 1.38 shares of Adobe common stock to be issued in exchange for each share of Macromedia common stock pursuant to the merger agreement was fair to Adobe from a financial point of view.

April 17, 2005, the Macromedia board of directors reviewed the update on the Adobe board of directors' authorization of the proposed exchange ratio of 1.38 shares of Adobe common stock for each share of Macromedia common stock.

April 17, 2005, the Adobe board of directors unanimously approved the merger and related matters. Following the meetings of Adobe's and Macromedia's respective boards of directors, the parties signed the merger agreement.

April 18, 2005, the signing of the merger agreement was publicly announced prior to the opening of the NASDAQ National Market.

Appendix IA5.
Robustness checks

This table conducts a number of robustness checks on our main findings in Table 7 Panel B. Panel A presents the treatment effect estimated by fitting a quadratic polynomial model using a triangular kernel to the left and right of the 20% threshold. Panel B presents the treatment effect using acquirer residual CAR3, which is obtained by regressing acquirer CAR3 on firm and deal characteristics (as listed in Table 6), and industry and year fixed effects. Panels C and D present the treatment effect using a pseudo threshold of 15% and 25% share issuance, respectively. All variables are defined in Appendix A. ***, **, * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Panel A: The RDD analysis using quadratic polynomial models

Variable	Coef.	Std. Err.	z	P value	Bandwidth
CAR3	0.068	0.050	1.379	0.168	+/- 6
CAR3	0.072*	0.042	1.725	0.085	+/- 8
CAR3	0.078**	0.036	2.140	0.033	+/- 10
CAR3	0.049**	0.021	2.372	0.018	IK (+/- 17.65)

Panel B: The RDD analysis using local linear regressions: acquirer residual CAR3

Variable	Coef.	Std. Err.	z	P value	Bandwidth
CAR3	0.077***	0.030	2.595	0.009	+/- 6
CAR3	0.076***	0.026	2.976	0.003	+/- 8
CAR3	0.068***	0.023	3.033	0.002	+/- 10
CAR3	0.054***	0.018	2.996	0.003	IK (+/- 13.54)

Panel C: The pseudo threshold is 15% of shares issued

Variable	Coef.	Std. Err.	z	P value	Bandwidth
CAR3	-0.012	0.017	-0.712	0.477	+/- 6
CAR3	-0.014	0.016	-0.898	0.369	+/- 8
CAR3	-0.015	0.014	-1.098	0.272	+/- 10
CAR3	-0.010	0.012	-0.857	0.391	IK (+/- 13.71)

Panel D: The pseudo threshold is 25% of shares issued

Variable	Coef.	Std. Err.	z	P value	Bandwidth
CAR3	-0.025	0.024	-1.064	0.287	+/- 6
CAR3	-0.031	0.021	-1.464	0.143	+/- 8
CAR3	-0.032	0.020	-1.608	0.108	+/- 10
CAR3	-0.008	0.012	-0.628	0.530	IK (+/- 19.53)

Appendix IA6.
The treatment effect away from the threshold

This table presents the effect of shareholder voting on acquirer CAR3 using the method from Angrist and Rokkanen (2015). The sample consists of 2,131 all-stock deals with the percent of shares issued in the range between 0 to 40%. Panel A reports tests of the conditional independence assumption in which the dependent variable is acquirer CAR3. Panel B presents the generalized treatment effect in which the dependent variable is acquirer CAR3, weighted by propensity scores estimated from a logit regression in which the dependent variable is the indicator variable *Vote*, and the control variables are the same as those in Panel A columns (2) and (4). All variables are defined in Appendix A. Heteroskedasticity-consistent standard errors (in parentheses) are clustered at the acquirer level. ***, **, * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Panel A: Tests of the conditional independence assumption

	(0, 20%)		[20%, 40%]	
	(1)	(2)	(3)	(4)
Percent of shares issued	-0.001*	-0.000	-0.003**	-0.002
	(0.000)	(0.000)	(0.002)	(0.001)
Log (M/B)		0.008***		0.006*
		(0.000)		(0.000)
Log(Deal value)		-0.002		-0.009*
		(0.002)		(0.005)
Diversifying		-0.000		0.059***
		(0.005)		(0.019)
Tender offer		-0.033		-0.004
		(0.025)		(0.111)
Public target		-0.024***		-0.088***
		(0.006)		(0.019)
Constant	0.014***	0.023***	0.110**	0.164***
	(0.004)	(0.006)	(0.046)	(0.048)
Observations	1,774	1,774	357	357
R-squared	0.002	0.027	0.013	0.151

Panel B: Treatment effects after propensity score weighting

	(1)	(2)	(3)
Vote	0.049***	0.081***	0.082***
	(0.018)	(0.018)	(0.019)
Log(M/B)		-0.001	-0.001
		(0.006)	(0.007)
Leverage		-0.034	-0.039
		(0.027)	(0.031)
Cash		-0.017	-0.006
		(0.028)	(0.031)
Log(Deal value)		-0.006**	-0.006**
		(0.002)	(0.003)
Relative size		0.014	0.013
		(0.011)	(0.011)

Diversifying		0.011	0.008
		(0.008)	(0.009)
Tender offer		-0.003	-0.012
		(0.032)	(0.036)
Public target		-0.084***	-0.082***
		(0.010)	(0.011)
Constant	0.007***	0.053***	-0.066***
	(0.003)	(0.011)	(0.022)
Industry/Year FEs	No	No	Yes
# of deals	2,131	2,131	2,131
R-squared	0.012	0.086	0.118

Appendix IA7.
Acquirer post-merger operating performance

This table presents the treatment effect of shareholder voting on acquirer post-merger operating performance. Panel A presents the treatment effect on acquirer post-merger two-year average ROA (ROA2). Panel B presents the treatment effect on acquirer post-merger four-year average ROA (ROA4). All variables are defined in Appendix A. ***, **, * correspond to statistical significance at the 1, 5, and 10 percent levels, respectively.

Panel A: Post-merger two-year average ROA (sample period: 1995-2014, sample size = 1948)

	High institutional ownership				Low institutional ownership			
Variable	Coef.	Std. Err.	Z	Bandwidth	Coef.	Std. Err.	Z	Bandwidth
ROA2	0.202**	0.101	2.003	+/- 6	-0.180	0.160	-1.122	+/- 6
ROA2	0.172**	0.087	1.992	+/- 8	-0.165	0.144	-1.151	+/- 8
ROA2	0.150**	0.075	1.993	+/- 10	-0.142	0.130	-1.096	+/- 10
ROA2	0.098*	0.053	1.847	IK (+/- 16.77)	-0.042	0.094	-0.446	IK (+/- 16.77)

Panel B: Post-merger four-year average ROA (sample period: 1995-2012, sample size = 1612)

	High institutional ownership				Low institutional ownership			
Variable	Coef.	Std. Err.	Z	Bandwidth	Coef.	Std. Err.	Z	Bandwidth
ROA4	0.161**	0.064	2.534	+/- 6	-0.103	0.094	-1.090	+/- 6
ROA4	0.138**	0.054	2.554	+/- 8	-0.112	0.084	-1.329	+/- 8
ROA4	0.118**	0.047	2.516	+/- 10	-0.096	0.075	-1.279	+/- 10
ROA4	0.078**	0.035	2.228	IK (+/- 13.72)	-0.040	0.052	-0.770	IK (+/- 17.42)