Do investors pay attention to proxy voting outcomes? Evidence from the M&A setting

Lingwei Li*
Research School of Accounting
The Australian National University
Canberra, ACT 2601
lingwei.li@anu.edu.au

Huai Zhang
Nanyang Business School
Nanyang Technological University
Singapore, 639798
huaizhang@ntu.edu.sg

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ABSTRACT

Shareholders vote on proposed M&A deals. After confirming a positive association between the shareholder voting outcome and the post-merger operating performance, we test whether investors fully understand this relationship. There is no abnormal return around the time when the voting outcome becomes available, indicating a lack of attention to the voting result. We further show that post-merger abnormal stock returns are significantly higher for acquirers receiving higher approval rates. Consistent with mispricing, we find that the voting outcome reliably predicts post-merger earnings announcement returns and analyst forecast errors. What's more, the association between the voting outcome and post-merger stock returns is stronger when investors' attention to the voting outcome is distracted by same-day earnings announcements, when the marginal investor is less likely to be sophisticated, and when investors face limits of arbitrage. Overall, our results suggest that proxy voting outcomes are neglected by investors.

Keywords: Market inefficiency; Shareholder voting; Mergers and acquisitions; Post-merger performance.

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1. Introduction

Regulations, both in the U.S. and in other countries, have attached great importance to shareholder voting on corporate matters since the turn of the century.[1] These regulations however are controversial and face ever greater scrutiny after the election of President Trump. We aim to inform the debate by analyzing investors' reactions to the voting outcome.

Regulatory demands for shareholder voting are based partially on the belief that the voting outcome is a reasonable summary statistics, which informs investors. However, the attention of the media and investors may be narrowly focused on the binary outcome of the voting ("pass" or "fail"), rather than the specific approval rate, resulting in an incomplete investors' reaction to the voting result.

We choose to examine this broad issue in the M&A setting, because prior studies have shown that the proxy voting outcome in this setting is associated with the post-merger operating performance. Specifically, Burch, Morgan and Wolf (2004) show that future change in operating performance is a determinant of the approval rates, and we confirm that a deal receiving higher approval rates enjoys higher post-merger operating performance. Therefore, there is indeed useful information in the M&A voting outcome. What's more, M&A decisions are economically significant corporate decisions with huge valuation consequences. For example, Moeller, Schlingemann, and Stulz (2005) show that acquiring-firm shareholders lost a total of $240 billion from 1998 through 2001. It is thus important to ask whether investors correctly process the relevant information in the M&A voting outcome.

Our central research question is whether the stock price fully incorporates the information in proxy voting outcome. While the standard efficient market hypothesis suggests an affirmative answer, a slew of studies (Bernard and Thomas, 1990; Sloan, 1996; Dechow and Sloan, 1997; Bradshaw, Richardson, and Sloan, 2001; Hirshleifer, Lim, and Teoh, 2009; Thomas and Zhang, 2011; Chi, Pincus, and Teoh, 2014)

[1] For example, the U.K. mandated an annual non-binding shareholder vote on executive pay in 2002 (Financial News, 2002; DRRR, 2002). In 2004, Chinese security regulators began to require major corporate decisions to be approved by more than 50 percent of the tradable shares that participate in proxy voting (CSRC, 2004). The U.S. Department of the Treasury's Advisory Committee on the Auditing Profession (ACAP) recommended that all public firms must subject their choice of auditor to proxy voting in 2008 (ACAP, 2008), while the say-on-pay law was implemented as part of the Dodd-Frank Act in 2011.

have questioned investors' ability to efficiently process information. These studies provide robust evidence that investors systematically underreact or overreact to information, which results in predictable future returns.

Theoretical models in Hirshleifer and Teoh (2003), DellaVigna and Pollet (2009) and Hirshleifer, Lim, and Teoh (2011) attribute under-reaction to investors' limited attention and processing power. Investors are prone to pay attention to salient news while neglect useful but less salient information. If a subset of investors do not pay enough attention to good news/bad news, the stock price will be under-valued/overvalued, resulting in a continuation of price run-ups/run-downs. In the M&A proxy voting setting, the passing of the deal is headline news on the popular press, while the specific approval rate is either unreported or relegated to a less conspicuous place. For example, on November 17, 2016, New York Times reported that shareholders approved the merger between Tesla and SolarCity. The title of the article was "Tesla and SolarCity Shareholders Approve Merger". However, the specific approval rate was never mentioned in the article.[2] Since the voting outcome constitutes less salient information, it may receive insufficient investors' attention, leading to under-reactions. We investigate whether investors correctly process the voting outcome not only because it is an interesting question in itself, but also because it has practical implications. If investors ignore the information in the voting outcome, requiring proxy voting on corporate matters becomes less justifiable.

We use a sample of acquirer shareholder votes on M&A proposals for the period 1997-2012 to investigate our research question. Our analyses focus on acquirers rather than targets because the acquirer plays a proactive role in the M&A deals and because it is easier to track the post-merger performance for acquirer shareholders. We find that acquirer shareholder voting outcomes are positively associated with the post-merger operating performance. Specifically, a 1% increase in the voting approval rate is associated with an increase of 0.291% in ROA (adjusted for industry and pre-merger performance) in the year after

[2] https://www.nytimes.com/2016/11/18/business/dealbook/tesla-and-solarcity-shareholders-approve-merger.html?_r=0. Although the voting outcome is not reported by the newspaper, it is publicly available information.

the merger.[3] This positive association continues to hold after we control for acquirer announcement returns, firm and deal characteristics, industry dummies and year dummies. It is robust to additional controls for corporate governance measures, and to an alternative measure of the post-merger operating performance, which removes the impact of goodwill accounting on ROA. Our finding suggests that the voting outcome contains information above and beyond the common predictors. Its incremental informativeness probably comes from voting shareholders' access to the management or from their superior ability to process information.

As for our central research question, we first analyze the market's reaction to the voting outcome when the voting outcome becomes available. We find that there is no correlation between the short-window abnormal stock return and the proxy voting outcome, suggesting a lack of investors' attention. More importantly, we show that the acquirer voting outcome predicts post-merger stock returns: a 1% increase in voting approval rate is associated with an increase of 0.482% in the market-adjusted stock return in the year after the merger is completed. This association continues to hold in multivariate regressions.[4]

As a robustness check, we employ a time-series four-factor regression approach and form portfolios according to voting outcomes. Care is taken so that these portfolios are formed without the look-ahead bias. We find that an arbitrage portfolio with a long position in acquirers with high voting outcome and a short position in acquirers with low voting outcome earns an excess monthly return of 1.1%. Furthermore, we form portfolios according to the residual obtained from regressing voting outcome on acquirer announcement returns, firm and deal characteristics, industry dummies and year dummies. This approach effectively teases out the impact of these variables, and it yields similar results.

[3] We also examine the associations between the voting outcome and ROAs in the 2nd/3rd post-merger year. The associations are insignificant, probably because shareholders have difficulty foreseeing events taking place in the distant future.

[4] In untabulated test, we show that this association is robust to an alternative return measure used in Chen, Harford and Li (2007), which employs a benchmark portfolio approach to generate expected returns. We also find that the associations between the voting outcome and the market-adjusted stock returns in the 2nd /3rd post-merger year are insignificant, suggesting that the correction of mispricing concentrates in the 1st post-merger year.

To further distinguish mispricing from risks, we examine the association between the voting outcome and investors' surprises at the post-merger earnings announcements. If investors fail to appreciate the information in the voting outcome for the post-merger operating performance, we predict that they will be more positively surprised at the post-merger earnings announcements for acquirers with higher voting outcomes. We use two measures to proxy for investors' surprises: earnings announcement returns and analyst forecast errors. Our results confirm our prediction. A 1% increase in the voting outcome is associated with 0.061% increase in the average buy-and-hold market-adjusted return over the three-day window centered on the quarterly earnings announcement date, and a 0.016% increase in the average quarterly forecast error, defined as actual EPS minus median analyst forecast divided by the stock price.

Our results suggest that investors under-react to the information in the voting outcome. Hirshleifer et al. (2009) show that investor's under-reaction to information is greater when their attention is distracted by concurrent extraneous events, such as same-day earnings announcements. According to Listokin (2009), the voting outcomes are probably known on the voting date. We therefore predict that when there are many earnings announcements on the voting date, investors' attention to the voting outcome is even more insufficient, resulting in a stronger link between the voting outcome and future returns. Our prediction is borne out by our empirical results: when there are many earnings announcements on the voting date, the voting outcome reliably predicts post-merger stock returns; however, when few earnings announcements take place on the voting day, the voting outcome loses its predictive power. This evidence directly speaks to the link between investors' attention and the mispricing we document.

We continue to hypothesize that the positive association between voting outcomes and the post-merger performance is less pronounced for firms whose marginal investors are likely to be sophisticated. Ample evidence suggests that institutional investors are less likely to be subject to behavioral biases. For example, Bartov, Radhakrishnan, and Krinsky (2000) find that the post-earnings-announcement drift is less pronounced while Collins, Gong, and Hribar (2003) show that the accrual anomaly is less evident among firms with a larger institutional ownership. Their results are consistent with the notion that institutional

investors are less affected by behavioral biases, such as limited attention. We predict and find that the anomaly we document is less pronounced for firms with high institutional ownership.

The ability of sophisticated investors to correct mispricing is reduced when there exist restrictive limits of arbitrage. Mashruwala, Rajgopal, and Shevlin (2006) find that the accrual anomaly is concentrated in firms with high idiosyncratic volatility and high transaction costs. Their evidence is consistent with the notion that the accrual anomaly is due to idiosyncratic volatility and transactions costs constraining the abilities of risk-averse arbitrageurs. Similar evidence is found in Ali, Chen, Yao, and Yu (2008), Collins, Gong, and Hribar (2003) and Lev and Nissim (2006). If investors' ability to reduce mispricing is indeed constrained by limits of arbitrage, we expect that the association between proxy voting outcome and future returns is less pronounced for big firms and firms included in the S&P Index, where limits of arbitrage are less binding. Our results lend support to our expectation.

We consider several alternative explanations of our findings. Our return analyses show that acquirers with higher approval rates experience higher post-merger returns. While we interpret it as evidence of mispricing, there exists a possible risk-based explanation. If shareholders are more likely to support deals that increase firm risks, M&A deals with higher approval rates will experience higher post-merger returns. This explanation cannot account for the results based on earnings announcement returns and analyst forecast errors. In addition, since investors are typically risk-averse, we fail to see any theoretical reason why shareholders prefer risk-increasing deals.

Prior literature has documented the importance of proxy advisors in shaping the voting outcome (e.g., Bethel and Gillan, 2002; Morgan, Poulsen, and Wolf, 2006; Cai, Garner, and Walkling, 2009; Ertimur, Ferri, and Oesch, 2013; Larcker, McCall, and Ormazabal, 2015; Malenko and Shen, 2016). For example, Morgan et al. (2006) show that the recommendations influence greater than 20 percent of the votes for compensation related issues. Therefore, it is possible that our results are driven by proxy advisor recommendations. We note however that in our sample, the proxy advisor issued the "against" recommendation for acquirer shareholders in only three M&A deals. Given that M&A deals in our sample

received almost universal support from proxy advisors, it's unlikely that our results are driven by the proxy advisor's opinions.

Our study contributes to the literature in the following ways. First, our study contributes to the line of literature which offers evidence that investors do not fully appreciate available information. Bernard and Thomas (1990) show that investors underreact to earnings surprises. Sloan (1996) finds that investors do not fully understand the implication of accruals for future earnings. Dechow and Sloan (1997) report that shareholders over-extrapolate the information from the firm's past growth. Bradshaw et al. (2001) present evidence that financial analysts, commonly deemed as sophisticated investors, do not incorporate the information in accounting accruals. Thomas and Zhang (2011) and Chi et al. (2014) show that the stock price does not fully reflect the information in the tax expense and the book-tax difference respectively. Richardson, Tuna and Wysocki (2010) offer a review of evidence inconsistent with the efficient market hypothesis. Our paper extends this line of literature by showing that investors underreact to the information in the voting outcome in the important M&A setting.

Second, our study contributes to the literature on shareholder voting, especially those related to voting outcomes. Prior studies investigate the impact of voting outcomes on corporate practices and they report mixed results. Specifically, Cai et al. (2009), Fischer, Gramlich, Miller, and White (2009), and Ertimur, Ferri, and Muslu (2011) show that a lower/higher approval rate for management-sponsored proposals/activist-sponsored proposals leads to an improvement in corporate governance practices, while Armstrong, Gow, and Larcker (2013) find that the shareholder voting outcome has little effect on firms' compensation policies. To the best of our knowledge, our paper marks the first attempt to examine investors' appreciation of the proxy voting outcome, a topic neglected by prior studies but informative to academics and regulators.

The rest of this paper is organized as follows. Section 2 introduces institutional background, and develops hypothesis. Section 3 presents research designs. Section 4 covers sample formation and descriptive statistics. Section 5 and 6 report empirical results. Section 7 concludes.

2. Institutional background and hypotheses development

2.1. Institutional background

Major U.S. stock exchanges (The New York Stock Exchange, Nasdaq, and the American Stock Exchange) have different requirements for acquirers and targets. Shareholder approval is mandated for all targets involved in M&A deals. Acquirers are required to obtain shareholder approval when the deal involves the issuance of at least twenty percent of the outstanding common stock.[5] M&A deals are also subject to state regulations. While Florida, Georgia, Idaho and Washington do not require a vote no matter how large the issuance is, shareholder voting is always required in Alaska, District of Columbia, Missouri and New York. For the deals to go through, laws in most states require approval to be obtained from the majority of voting rights (Kamar, 2011).[6] Since M&A deals are classified as non-routine proposals (Bethel and Gillan, 2002), brokers can't vote the shares on investors' behalf. The M&A voting results are binding in the sense that the deal cannot proceed if the shareholder approval is not obtained. In reality, Burch et al. (2004) show that acquirer proxy votes rarely fail and we find similar evidence.[7]

Bethel, Hu, and Wang (2009) find that the record date (the date when ownership of the shares entitles voting rights) is on average 89 days after the M&A announcement date and is about 71 days before the shareholding voting date. The approximately three-month time lag between the announcement date and the record date gives investors plenty of time to vote with their feet.[8]

2.2. Hypothesis development

[5] See Section 312.03 of NYSE Listed Company Manual, Section 4350-(i) of Nasdaq Marketplace Rules, and Section 712 of AMEX Company Guide.

[6] In our sample of 642 deals holding shareholder votes, 12 deals are all-cash deals and shareholder voting is not required by exchanges. We further checked the home state of acquirers and state rules do not require shareholder voting for 10 out of the 12 deals, Therefore, these 10 shareholder votes may represent voluntary shareholder voting by acquirers. It's unclear how voluntary voting affects the relation between voting outcome and post-merger performance. We remove these 10 deals from our sample and our results continue to hold.

[7] Specifically, only 2 out of 642 M&A deals in our initial sample fail because of low shareholder support.

[8] Since all acquirers in our sample hold shareholder voting on M&A deals, they are likely to be homogenous and our conclusion is not affected by the non-random nature of acquirers' holding shareholder voting on M&A deals.

We investigate whether the stock price fully reflects the information in the voting outcome for the post-merger operating performance. While the efficient market hypothesis suggests that investors incorporate this association in their valuation, evidence exists that investors sometimes are unable to do so. Bernard and Thomas (1990) demonstrate that investors have wrong beliefs on the simple time-series properties of quarterly earnings. Sloan (1996) and Bradshaw et al. (2001) show that investors and financial analysts are unable to correctly assess the relationship between accruals and future earnings. Dechow and Sloan (1997) report that investors systematically overestimate (underestimate) the future growth for firms with high (low) past growth. Thomas and Zhang (2011) and Chi et al. (2014) respectively find that the stock price fails to fully appreciate the information in the tax expense and the book-tax difference.

Hirshleifer and Teoh (2003), DellaVigna and Pollet (2009) and Hirshleifer et al. (2011) build theoretical models and argue that investors' misreactions to information may be due to their limited attention. Investors may focus on salient information and ignore less salient but equally useful information. For example, investors may misprice pro forma earnings because they pay attention to the earnings (the salient information) and ignore managerial strategic incentives in disclosing such earnings (useful but less-salient information). Consistent with the limited attention explanation, Hirshleifer et al. (2009) report that investors underreact to earnings news more when their attention is distracted by other earnings announcements on the same day.

Limited attention may play a role in our setting. Undoubtedly, whether the deal "passes" is much more salient than the underlying approval rate. Investors therefore may be attentive to the passing of the deal and ignore the specific voting outcome. The lack of attention may lead to some investors' unawareness of the association between the voting result and post-merger operating performance.

In sum, it is an open question whether investors fully understand the association between the voting outcome and the post-merger operating performance.

Given that it's unclear whether the stock price fully reflects the information in the voting outcome for the post-merger operating performance, we state our hypothesis in the null form.

H1: *The stock price fully reflects the information in the voting outcome for the post-merger operating performance.*

3. Research design

3.1. Research design for the association between voting outcome and post-merger operating performance

We use the following model:

$$POST\_ROA = \alpha_0 + \alpha_1 VOTEFOR + \alpha_2 ANNRET + \alpha_3 SIZE + \alpha_4 BM + \alpha_5 LEV + \alpha_6 PASTRET + \alpha_7 CASHDEAL + \alpha_8 SAMEIND + \alpha_9 DEALSIZE + Year\ Dummies + Industry\ Dummies + \varepsilon \quad (1)$$

where *POST_ROA* is our measure of post-merger operating performance. Its computation follows Chen et al. (2007) and Nain and Yao (2013). Specifically, it is the residual from regressing industry-adjusted ROA of the acquirer in the year after deal completion on the industry-adjusted ROA of the combined firm in the year prior to the deal announcement. ROA is the ratio of income before extraordinary items to total assets at the beginning of the year. This cross-sectional regression considers the predictability of pre-merger operating performance on post-merger operating performance (Chen et al., 2007). Following Healy, Palepu, and Ruback (1992), we calculate pre-merger industry-adjusted ROA as the weighted average of industry-adjusted ROA of the acquirer and the target with weights based on total assets at the beginning of the fiscal year.

VOTEFOR is our measure of voting outcome. Burch et al. (2004) and Becher, Cai, and Ouyang (2010) suggest that the voting outcome based on the total number of votes possible is a better measure of shareholders' attitude since shareholders often vote "abstain" or do not vote when they do not endorse the proposal. Moreover, most states require the majority of outstanding votes to be in favor of the deal before the deal can proceed (Kamar, 2011). Therefore, we use *VOTEFOR*, the number of "for" votes divided by

the total number of votes possible, as our measure of shareholder voting outcome.[9] It is our main independent variable.

ANNRET is the announcement return, i.e., the acquirer's buy-and-hold market-adjusted return over the three-day window centered on the announcement date of the M&A deal. We control for *ANNRET* since *ANNRET* could be a determinant of *VOTEFOR* (Burch et al., 2004) and it predicts post-merger performance (Healy et al., 1992).

In addition, following Nain and Yao (2013), we control for the following acquirer firm characteristics: *SIZE*, *BM*, *LEV* and *PASTRET*.[10] *SIZE* is the log value of the acquirer's total assets, *BM* is the book value of equity divided by market value of equity, *LEV* is the book value of debts divided by total assets, and *PASTRET* is the acquirer's buy-and-hold market-adjusted return in the six months prior to the announcement of the deal. These firm characteristics have been shown to have predictive powers for market-adjusted returns, and they may influence future operating performances. *SIZE*, *BM* and *LEV* are measured at the fiscal year end prior to the M&A deal announcement.

We also control for the following deal characteristics: *CASHDEAL*, *SAMEIND* and *DEALSIZE*.[11] *CASHDEAL* is a dummy variable which equals one for deals at least partially cash-financed, and zero otherwise. *SAMEIND* is a dummy variable which equals one if the acquirer and the target share the same 2-digit SIC code, and zero otherwise. *DEALSIZE* is the deal value divided by the acquirer's market value of equity.

[9] Using the number of total votes cast yields qualitatively similar results.
[10] CEO ability may potentially explain our finding, because high CEO ability may be associated with both high voting outcome and high post-merger performance. This however does not change our conclusion. If the CEO is able to do good deals, it's rational for investors to support the deals she proposes. In an effort to control for CEO ability, we include prior 3-year stock return as a measure of CEO ability and our results continue to hold.
[11] We do not control for the dummy indicating whether the deal is hostile. This is because, in our sample, no deals are hostile.

Finally, year fixed effects and industry fixed effects are included in the model. Following Malmendier and Tate (2005) and Cai and Sevilir (2012), we define industries according to Fama-French 12 industries classification.[12]

A positive coefficient on *VOTEFOR* indicates that M&A deals that receive higher support from shareholders yield better post-merger operating performances.[13]

3.2. Research design for H1

3.2.1. Regression approach

To examine whether the stock price fully reflects the information in the voting outcome, we first use the following model:

$$POST\_RET = \alpha_0 + \alpha_1 VOTEFOR + \alpha_2 ANNRET + \alpha_3 SIZE + \alpha_4 BM + \alpha_5 LEV + \alpha_6 PASTRET + \alpha_7 CASHDEAL + \alpha_8 SAMEIND + \alpha_9 DEALSIZE + Year\ Dummies + Industry\ Dummies + \varepsilon \quad (2)$$

where *POST_RET* is the buy-and-hold market-adjusted return for the 12-month period after the completion of the deal. All the other variables are defined in Section 3.1.

If the stock price fully reflects the information in the voting outcome for post-merger operating performance, we expect the coefficient on *VOTEFOR* to be insignificant. However, if investors underreact to the information, we expect the coefficient on *VOTEFOR* to be positive and significant.

3.2.2. Calendar-time portfolio approach

To formally test whether the stock price fully reflects the information in the voting outcome and whether a profitable strategy can be formulated by taking advantage of the mispricing, we adopt a calendar-

[12] Detailed industry definitions can be found at Kenneth French's website at http://mba.tuck.dartmouth.edu/pages/-faculty/ken.french/Data_Library/det_12_ind_port.html.

[13] While we interpret our results as an association, they may indicate causality. Investors are more likely to co-operate with the management for deals they support, leading to higher post-merger performance. We do not interpret our results this way because investors are not business partners and their cooperation may have very limited influence on firms' operations.

time portfolio approach. Starting in the month when the merger is completed, we populate the voting outcome to the subsequent 12 months. We form three terciles every month according to the raw values of voting outcome. Since the voting outcome is available before the merger is completed, this does not introduce a look-ahead bias. An arbitrage portfolio is constructed by longing acquirers with high voting outcome and shorting acquirers with low voting outcome. We require that low and high portfolios each consist of at least five observations. The abnormal return to a portfolio is estimated through the intercept term in the following time-series four-factor regression model (Fama and French, 1993; Carhart, 1997):

$$R_{pt} - R_{ft} = a + b(R_{mt} - R_{ft}) + sSMB_t + hHML_t + uUMD_t + \varepsilon_t \quad (3)$$

where R_{pt} is the equally weighted return of the portfolio in calendar month *t*; R_{mt} is the return on the value-weighted index of NYSE, AMEX, and NASDAQ stocks in month *t*; R_{ft} is the one month Treasury bill rate in month *t*; SMB_t is the return on small firms minus the return on large firms in month *t*; HML_t is the return on high book-to-market stocks minus the return on low book-to-market stocks in month *t* (Fama and French, 1993); and UMD_t is the return on high momentum stocks minus the return on low momentum stocks in month t (Carhart, 1997).[14]

If H1 is true, we expect that the arbitrage portfolio longing the high portfolio and shorting the low portfolio exhibits no significant abnormal returns. However, if investors underreact to the information in the shareholder voting outcome, we expect the arbitrage portfolio to exhibit positive and significant abnormal returns.

To alleviate the concern that our results are driven by determinants of the voting outcome, we also employ a different portfolio approach. We first regress the voting outcome (*VOTEFOR*) on *ANNRET*, *SIZE*, *BM*, *LEV*, *PASTRET*, *CASHDEAL*, *SAMEIND*, *DEALSIZE*, industry dummies, and year dummies. By construction, this residual from the OLS regression is orthogonal to the independent variables and therefore

[14] Detailed construction procedures for *SMB*, *HML*, and *UMD* factors can be found at Kenneth French's website at http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html#Research. The data on the four factors are downloaded from this website.

these variables do not explain our residual-based findings. We then populate the residual to the 12 months after the deal completion. Each month, we form three terciles according to the residual. We use the model specified in Equation (3) to estimate the abnormal return to the arbitrage portfolio with a long position in the high portfolio and a short position in the low portfolio. If H2 is true, we expect the abnormal return to be insignificant. However, if investors underreact to the information in the shareholder voting outcome, we expect the arbitrage portfolio to exhibit positive and significant abnormal returns.

4. Sample formation and descriptive statistics

4.1. Sample formation

We start with 1,842 observations of shareholder voting on M&A proposals obtained from RiskMetrics and ISS Voting Analytics databases. To identify acquirers and obtain deal-related information, we merge our observations with the SDC database. We require that both the acquirer and target be U.S. firms, the acquirer be publicly traded, and the deal value be greater than 1 million U.S. dollars. This leaves us with 1,298 observations, of which 642 belong to acquirers. We then impose the following data requirements: (i) the deal is completed;[15] (ii) the acquirer owns less than 50% of the target before the deal and owns more than 50% after the deal; and (iii) *VOTEFOR*, *ANNRET*, *SIZE*, *BM*, *LEV*, *PASTRET*, *CASHDEAL*, *SAMEIND*, *DEALSIZE*, and *POST_RET* are non-missing. This reduces the number of observations to 359. Our final sample covers the period: 1997 to 2012. Variable definitions and data sources are provided in Appendix 1.

4.2. Descriptive statistics

Table 1 provides descriptive statistics. Our main independent variable is *VOTEFOR*, which is measured as the proportion of "for" votes to the total number of votes possible. The mean value of *VOTEFOR* is 0.733, indicating that in our sample, on average, 73.3% of the outstanding voting rights are

[15] Otherwise, the post-merger performance is unavailable.

for the deal. This is similar to Burch et al. (2004), who show that the mean approval rate based on voting rights is 73.2% for their sample of 209 acquirer M&A votes from 1990 to 2000.

ANNRET is the acquirer's buy-and-hold market-adjusted return over the three-day window centered on the M&A deal announcement date. Its mean value is -0.017 and its median value is -0.024, indicating that acquirers, on average, earn negative returns at the announcement of the deal. This is consistent with Bethel et al. (2009) and Cai and Sevilir (2012).[16] *SIZE* is the log of total assets at the fiscal year end prior to the M&A deal announcement, and it has a mean value of 7.695. *BM* is book value of equity divided by market value of equity as of the prior fiscal year end. Its mean value is 0.486. *LEV* is book value of debts over total assets as of the prior fiscal year end. Its mean value is 0.252, indicating that the book value of debts is about a quarter of the value of total assets. *PASTRET* is the buy-and-hold market-adjusted return in the six months prior to the announcement of the deal. Its mean value is 0.074, suggesting that the acquirer, on average, experiences positive returns (7.4%) for the 6-month period prior to the deal announcement. *CASHDEAL* is a dummy variable which equals one for deals at least partially cash-financed, and zero otherwise. Its mean value indicates that 51% of deals in our sample use cash as a part of the payment. *SAMEIND* is a dummy variable which equals one if the acquirer and the target share the same 2-digit SIC code, and zero otherwise. Its mean value is 0.760, suggesting that for 76% of the deals in our sample, the acquirer and the target are from the same industry. *DEALSIZE* is the deal value divided by the acquirer's market value of equity. It has a mean value of 0.848, indicating that the deal value is about 85% of the acquirer's market value.

POST_RET is the buy-and-hold market-adjusted return for the 12-month period after deal completion. It has a mean value of -0.074 and a median value of -0.075, indicating that acquirers, on average, earn negative returns in the first-year after the completion of the deal. *POST_ROA* is the residual from regressing the industry-adjusted ROA of the acquirer in the year after deal completion on the industry-

[16] Specifically, Bethel et al. (2009) show that, in their sample, the mean and median acquirer announcement returns are -0.063 and -0.059, respectively. Cai and Sevilir (2012) show that acquirer announcement returns have a mean of -0.0214 and a median of -0.0158 in their sample.

adjusted ROA of the combined firm in the year prior to the announcement. *POST_ROA* has a mean value of -0.011.

5. Empirical results for the association between voting outcome and post-merger operating performance

5.1. Main results

We run the regression specified in Equation (1) and report our results in Panel A of Table 2. Our inferences are based on standard errors adjusted by heteroskedasticity and clustered by firm. This clustering corrects for time-series dependence in residuals. Regression (1) is a univariate regression. The coefficient on *VOTEFOR* is 0.291, significant at the 1% level, suggesting that a 1% increase in *VOTEFOR* is associated with a 0.3% increase in the acquirer's abnormal change in ROA. Regression (2) additionally controls for *ANNRET*, *SIZE*, *BM*, *LEV*, *PASTRET*, *CASHDEAL*, *SAMEIND*, *DEALSIZE*, industry dummies, and year dummies. The coefficient on *VOTEFOR* is 0.234, significant at the 1% level. Results from both regressions show that voting outcomes are positively associated with the post-merger operating performance.

5.2. Alternative measure of post-merger operating performance

This section tests whether the positive association between the voting outcome and post-merger operating performance is robust to an alternative measure of post-merger operating performance. This alternative measure addresses the concern that ROA tends to go down mechanically after a merger, because goodwill increases total assets and its amortization (mandatory prior to FAS 142) reduces earnings. Although it's unclear how this accounting issue biases our conclusions, we remove the effect of goodwill accounting on ROA. The new ROA is calculated as income before extraordinary items (IB) plus amortization of goodwill (AMGW) divided by total assets (AT) minus goodwill (GDWL) at the beginning of the year. If amortization of goodwill or goodwill is missing, we replace it with zero.[17] Industry-adjusted

[17] Our results continue to hold if we replace missing values of amortization of goodwill (AMGW) with non-missing values of amortization of intangibles (AM).

ROA is ROA minus the ROA of the industry (defined by the first 2-digit SIC code). Industry-adjusted ROA of the combined firm is the weighted average of the industry-adjusted ROA of the acquirer and the target with weights determined by total assets minus goodwill. *NEW_POST_ROA* is the residual from regressing the industry-adjusted ROA of the acquirer in the year after deal completion on the industry-adjusted ROA of the combined firm in the year prior to the announcement.

The results based on our new measure of post-merger operating performance are reported in Panel B of Table 2. The coefficient on *VOTEFOR* is positive and significant at the 1% level in both univariate and multivariate regressions. In sum, our conclusion seems to be robust toward this alternative measure of post-merger operating performance, which removes the impact of goodwill accounting on ROA.

5.3. Control for corporate governance

Masulis, Wang, and Xie (2007) find that corporate governance affects the quality of M&A deals. We do not include corporate governance variables in our main analyses because including these variables significantly reduces our sample size. For example, additionally requiring *GINDEX* based on Gompers, Ishii, and Metrick (2003) reduces our sample size from 267 to 143, a decline about 50%.

To address the potential concern that corporate governance measures are correlated omitted variables, we control for the following corporate governance measures in our regressions: *DUALITY*, *GINDEX* and *EINDEX*. *DUALITY* is a dummy variable which equals one if the CEO is also the chairman of the board, and zero otherwise; *GINDEX* is the governance index which is based on 24 antitakeover provisions following Gompers et al. (2003); *EINDEX* is the entrenchment index which is based on 6 antitakeover provisions following Bebchuk, Cohen, and Ferrell (2009).[18] Higher values of *GINDEX* and *EINDEX* indicate less effective corporate governance.

Panel C of Table 2 reports the results after controlling for corporate governance. Each time, we add one of three corporate governance measures into the main regression. Adding all of them at once introduces

[18] The data are available at Lucian Bebchuk's website: http://www.law.harvard.edu/faculty/bebchuk/data.shtml.

multicollinearity and takes a heavy toll on the sample size.[19] The coefficient on *VOTEFOR* is positive and significant at the 5% level in all regressions, indicating that *VOTEFOR* is positively associated with post-merger operating performances. In sum, our inferences seem robust to controlling for corporate governance measures.

6. Empirical results for H1

6.1. The market's reaction to proxy voting outcome

We examine investors' reactions to voting outcomes. According to Listokin (2009), the voting outcomes are probably known on the voting date. We use *VOTERET*, the acquirer's buy-and-hold market-adjusted return over the three-day window centered on the voting date, to measure investors' reaction to the voting outcome. We then regress VOTERET on *VOTEFOR*. Our results are reported in Table 3. Regression (1) reports the univariate regression results while Regression (2) reports the multivariate regression results where we include control variables, industry dummies and year dummies. The coefficients on *VOTEFOR* are not significant in either regression. Our findings are consistent with the notion that investors do not pay attention to the voting outcomes.

6.2. OLS regression approach

To test H1, we estimate the model specified in Equation (2) and report our results in Table 4. The dependent variable in Regression (1) and (2) is *POST_RET*. Regression (1) reports univariate regression results. The coefficient on *VOTEFOR* is positive and significant at the 5% level. Its coefficient suggests that, on average, a 1% increase in *VOTEFOR* is related to an increase of 0.482% in the buy-and-hold market-adjusted returns for the 12-month period after deal completion. Regression (2) includes control variables, industry dummies and year dummies. The coefficient on *VOTEFOR* is 0.663, significant at the 5% level, suggesting that the positive association is robust to additional controls.

[19] The coefficient on the corporate governance measure is not significant in our regressions, a result different from Masulis et al. (2007). This may be due to the smaller sample in our paper, since we require proxy voting data.

To sum up, our results show that the voting outcome has a positive association with post-merger stock returns, suggesting that investors underreact to the information contained in the voting outcome.

6.3. Calendar-time portfolio analysis

Table 5 reports time-series four-factor regression results. We populate the voting outcome to the subsequent 12 months, starting in the month when the merger is completed. We form terciles every month according to the raw values of voting outcome. This approach avoids the look-ahead bias, since the portfolio formation is based on existing publicly available information. We require that low and high portfolios each consist of at least five observations. We estimate the model specified in Equation (3) and report our results for the low, high and arbitrage portfolios in Panel A of Table 5. The arbitrage portfolio is formed by longing firms in the high portfolio and shorting firms in the low portfolio. Our focus is on the intercept term, which is a measure of the abnormal return to the portfolio.

Panel A shows that the portfolio with low voting outcome experiences negative abnormal returns. Its monthly abnormal return is -1.4%, significant at the 1% level. The high portfolio exhibits a negative albeit insignificant abnormal return of -0.3%. The arbitrage portfolio shows a positive and significant return of 1.1% per month, which translates into an annual return of 13.2%. Panel A not only shows that the market underreacts to information in the voting outcome but also demonstrates an implementable strategy for investors to take advantage of the mispricing.

In addition, we form portfolios based on the residual from regressing the voting outcome (*VOTEFOR*) on *ANNRET*, *SIZE*, *BM*, *LEV*, *PASTRET*, *CASHDEAL*, *SAMEIND*, *DEALSIZE*, industry dummies, and year dummies. This approach helps to alleviate the concern that determinants of the voting outcome drive our results, because the residual is orthogonal to all independent variables in the regression. We populate the residual to the 12 months after the deal completion, and form three terciles according to the residual each month. We require that low and high portfolios each consist of at least five observations. Our results are reported in Panel B of Table 5.

Panel B shows that the low portfolio experiences a negative abnormal return of -1.4%, significant at the 1% level. The high portfolio experiences an abnormal return of close to zero. The arbitrage portfolio generates a positive and significant monthly return of 1.4%.

In sum, results in Table 5 provide solid evidence that investors underreact to the information in the voting outcome. Acquirers who receive high approval rates have significantly higher post-merger returns than other acquirers. Our results support the notion that the stock price does not fully reflect the information in the voting outcome for the post-merger operating performance.

6.4. Post-merger earnings announcement return analysis

If investors do not fully understand the information in voting outcomes for the post-merger operating performance, their expectations of post-merger earnings will be systematically biased and investors will be predictably surprised at the time of the post-merger earnings announcements. This section empirically tests whether this is true. Given the evidence that investors underreact to the information, we predict that the post-merger announcement return is higher for acquirers with higher voting outcomes.

To test our prediction, we compute *POST_ANNRET*, which is the average of the four buy-and-hold market-adjusted returns over the three-day window centered on the quarterly earnings announcement in the fiscal year after deal completion. We compute the ratio of the sum of the four quarterly earnings announcement returns to the post-merger annual return. Its mean value is 0.23 and its median value is 0.11, indicating that the earnings announcement return is a significant proportion of the annual return.

We regress *POST_ANNRET* on *VOTEFOR* and other control variables, and report our results in Table 6. Regression (1) reports the univariate regression result. The coefficient on *VOTEFOR* is 0.05, significant at the 5% level, Regression (2) additionally controls for *ANNRET*, *SIZE*, *BM*, *LEV*, *PASTRET*, *CASHDEAL*, *SAMEIND*, *DEALSIZE*, industry dummies, and year dummies. The coefficient on *VOTEFOR* is 0.061, indicating that an increase of 1% in the voting outcome is associated with an increase of 0.06% in the average quarterly earnings announcement return in the post-merger year.

In sum, the results in Table 6 show that voting outcomes predict post-merger earnings announcement returns. Our results are consistent with the notion that investors do not fully incorporate the information in the voting outcome for post-merger operating performance.

6.5. Post-merger analyst forecast error analysis

This section tests the relation between the voting outcome and analyst forecast error. If analysts do not fully incorporate the information in voting outcomes, they will err predictably and their forecast errors will be associated with voting outcomes. Defining forecast errors as actual earnings minus analysts' forecasts, we predict a positive association between voting outcomes and post-merger forecast errors.

Our dependent variable is *POST_AFE*, the average quarterly analyst forecast error, measured as actual EPS minus median analyst forecast divided by the stock price, in the 12 months after deal completion. Following our discussion above, we expect that the coefficient on *POST_AFE* is positive. The results are reported in Table 7. Regression (1) reports the univariate regression results and Regression (2) reports the multivariate regression results by adding control variables, industry dummies, and year dummies. The coefficients on *VOTEFOR* are positive in both regressions. In Regression (2), the coefficient on *VOTEFOR* is 0.016, significant at the 10% level, lending support to our prediction.

In sum, the results in Table 7 are consistent with that the association between the voting outcome and future returns is due to investors' mispricing rather than risks.

6.6. Limited attention

We argue that investors' insufficient attention leads to mispricing of the voting outcome. If our argument is true, we expect the mispricing to be more pronounced when investors' attention is distracted by many concurrent earnings announcements. We continue to predict that the positive association between voting outcomes and the post-merger performance is less pronounced for firms with high institutional ownership since institutional investors are less likely to be subject to behavioral biases. Furthermore, if investors' ability to reduce mispricing is constrained by limits of arbitrage, we expect that the association

between voting outcomes and future returns is less pronounced for big firms and firms included in the S&P Index. We test these predictions in this section.

We first partition our sample into two subsamples based on the number of same-industry quarterly earnings announcements on the voting date. According to Listokin (2009), the voting outcomes are probably known on the voting date. We identify the two subsamples via the dummy variable, *H_NUMEA*. If the number of same-industry quarterly earnings announcements on the voting date is greater than the median value of the year, *H_NUMEA* equals one. Otherwise, *H_NUMEA* equals zero. We predict that the positive association between voting outcomes and post-merger stock returns is more pronounced in the subsample with the higher number of same-industry earnings announcements on the voting date (i.e., the subsample where *H_NUMEA*=1).

We then partition our sample based on institutional ownership, S&P 500 and firm size. The subsamples are identified via the following dummy variables: *L_INSTOWN* equals one if the acquirer's institutional ownership is lower than the median value, and zero otherwise; *SP500* equals one if the acquirer is a constituent of S&P 500, and zero otherwise; *L_SIZE* equals one if the acquirer's size is lower than the median value, and zero otherwise. We predict that investors' under-reaction to the voting outcome is more pronounced when the acquirer has low institutional ownership, is not a constituent of S&P 500, and has a small size.

The results are reported in Panels A-D of Table 8. The dependent variable is *POST_RET*, the buy-and-hold market-adjusted return for the 12-month period after the completion of the deal. Regressions (1) and (2) in Panel A report results for the subsample where *H_NUMEA* equals 1. Regressions (3) and (4) report results for the other subsample. The coefficients on *VOTEFOR* are positive and significant in Regressions (1) and (2). However, the coefficients on *VOTEFOR* are not significant in Regressions (3) and (4). The results indicate that the mispricing of the voting outcome is more pronounced when investors' attention is distracted by same-day earnings announcements.

Panel B reports results based on institutional ownership. Regressions (1) and (2) report results for the subsample with lower institutional ownership and Regressions (3) and (4) report results for the

subsample with higher institutional ownership. The coefficients on *VOTEFOR* are only positive and significant in Regressions (1) and (2).

Panel C reports results based on S&P 500. The coefficients on *VOTEFOR* are insignificant in Regressions (1) and (2) when *SP500* equals one, while they are positive and significant in Regressions (3) and (4) when *SP500* equals zero.

Panel D reports results for the two subsamples partitioned on size. The coefficients on *VOTEFOR* are significantly positive when the acquirer's size is lower than the median value (i.e., the subsample where *L_SIZE*=1), but they are insignificant in the other subsample. The results suggest that the positive association between voting outcomes and post-merger stock returns is more pronounced when the acquirer has lower institutional ownership, is not a constituent of S&P 500, and has lower size.

Overall, our results indicate that investors' under-reaction to the voting outcome is more pronounced when their attention is distracted by same-day earnings, when the marginal investor is less likely to be sophisticated and when investors face limits of arbitrage. These findings are consistent with the notion that limited attention is likely the cause of investors' under-reactions. While sophisticated investors are less likely to be affected by the behavioral bias, their ability to correct mispricing is handicapped by market frictions.

7. Conclusions

Do investors fully understand the information in proxy voting outcomes? We choose the M&A setting to study this question, because this setting allows us to assess the information in the voting outcome and because this setting has substantial valuation consequences. We find that the association between the voting outcome on M&A deals and the post-merger operating performance is positive and significant. Specifically, a 1% increase in the shareholder approval rate is associated with an increase of 0.291% in the post-merger ROA adjusted for industry and prior performance. This positive association is robust to controlling for a variety of firm and deal characteristics, to an alternative measure of post-merger operating performance, and to controlling for corporate governance measures.

We next examine whether the stock price fully reflects the information in the voting outcome. Investors may pay attention to the passing of the deals (which is more salient information) and neglect the specific voting outcome (which is less salient). We find that a hedge portfolio with a long position in acquirers with high voting outcomes and a short position in acquirers with low voting outcomes generates a positive abnormal monthly return of 1.1% in the year after the merger is completed. In addition, we show that post-merger earnings announcement returns and analysts' forecast errors are significantly higher for acquirers receiving higher shareholder approval. Our results are consistent with that investors under-react to the voting outcome.

Finally, we examine whether investors' mispricing of the voting outcome is more pronounced when their attention is distracted by same-day earnings announcements, when the marginal investor is less likely to be sophisticated and when investors face limits of arbitrage. We find that on days when investors' attention to the voting outcome is distracted by extraneous events to a greater extent, the association between the voting outcome and post-merger stock return is positive and significant. However, the association becomes insignificant on days when investors' attention is less distracted. These findings highlight the importance of limited attention in explaining investors' mispricing of the voting outcome. Consistent with the notion that mispricing is curbed by sophisticated investors, we find that the association between the voting outcome and post-merger stock return is only positive and significant when the acquirer has lower institutional ownership. We also find that the association exists when the firm is not a constituent of S&P 500 and when it is small in size. These findings are consistent with that limits of arbitrage play a role in curbing mispricing of proxy voting outcomes.

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Table 1 Descriptive Statistics

This table reports the descriptive statistics. All the continuous independent variables are winsorized at the top and bottom one percentile. Please refer to Appendix 1 for detailed variable definitions.

Variables	Obs	Mean	Std. Dev.	Q1	Median	Q3
VOTEFOR	359	0.733	0.095	0.675	0.740	0.799
ANNRET	359	-0.017	0.098	-0.076	-0.024	0.029
SIZE	359	7.695	1.855	6.549	7.597	8.786
BM	359	0.486	0.312	0.292	0.473	0.637
LEV	359	0.252	0.200	0.089	0.223	0.366
PASTRET	359	0.074	0.342	-0.113	0.049	0.193
CASHDEAL	359	0.510	0.501	0.000	1.000	1.000
SAMEIND	359	0.760	0.427	1.000	1.000	1.000
DEALSIZE	359	0.848	0.652	0.415	0.722	1.024
POST_RET	359	-0.074	0.416	-0.356	-0.075	0.136
POST_ROA	267	-0.011	0.111	-0.020	0.002	0.017

Table 2 M&A Voting Outcomes and Post-merger Operating Performance

This table reports results of OLS regressions. In Panel A, the dependent variable is *POST_ROA*, the residual from regressing the industry-adjusted ROA of the acquirer in the year after deal completion on industry-adjusted ROA of the combined firm in the year prior to the announcement. Panel B reports results using an alternative measure of the post-merger operating performance, *NEW_POST_ROA*, which removes the impact of goodwill accounting on ROA. It is the residual from regressing the industry-adjusted ROA of the acquirer in the year after deal completion on the industry-adjusted ROA of the combined firm in the year prior to the announcement. ROA is calculated as income before extraordinary items (IB) plus amortization of goodwill (AMGW) divided by total assets (AT) minus goodwill (GDWL) at the beginning of the year. If amortization of goodwill or goodwill is missing, we replace it with zero. Industry-adjusted ROA is ROA minus the ROA of the industry (defined by the first 2-digit SIC code). Industry-adjusted ROA of the combined firm is the weighted average of the industry-adjusted ROA of the acquirer and the target with weights determined by total assets minus goodwill. Panel C reports results after controlling for one of the following corporate governance variables: *DUALITY*, *GINDEX*, and *EINDEX*. *DUALITY* is a dummy variable which equals one if the CEO is also the chairman of the board, and zero otherwise. *GINDEX* and *EINDEX* are the governance index following Gompers et al. (2003) and the entrenchment index following Bebchuk et al. (2009), respectively. *SIZE*, *BM*, and *LEV* are measured at the fiscal year end prior to the merger announcement. Appendix 1 provides detailed variable definitions. Inferences are based on standard errors adjusted by heteroskedasticity and clustered by firm. *p*-values based on two-tailed tests are reported in parentheses. *, **, and *** stand for statistical significance at the 0.10, 0.05, and 0.01 level, respectively.

Panel A: M&A Voting Outcomes and Post-merger Operating Performance

	POST_ROA	
	(1)	(2)
Intercept	-0.224***	-0.223**
	(0.001)	(0.029)
VOTEFOR	0.291***	0.234***
	(0.002)	(0.010)
ANNRET		-0.021
		(0.850)
SIZE		0.005
		(0.287)
BM		-0.041
		(0.149)
LEV		-0.029
		(0.482)
PASTRET		-0.050
		(0.140)
CASHDEAL		0.001
		(0.951)
SAMEIND		0.014
		(0.437)

DEALSIZE		-0.012
		(0.344)
Year dummies	No	Yes
Industry dummies	No	Yes
R-squared	0.057	0.301
No of obs	267	267

Panel B: Alternative Measure of Post-merger Operating Performance

	NEW_POST_ROA	
	(1)	(2)
Intercept	-0.457***	-0.486**
	(0.003)	(0.019)
VOTEFOR	0.603***	0.500***
	(0.002)	(0.008)
ANNRET		-0.382
		(0.430)
SIZE		0.004
		(0.724)
BM		-0.091
		(0.211)
LEV		0.003
		(0.972)
PASTRET		-0.045
		(0.365)
CASHDEAL		0.000
		(0.988)
SAMEIND		0.062
		(0.273)
DEALSIZE		0.002
		(0.947)
Year dummies	No	Yes
Industry dummies	No	Yes
R-squared	0.053	0.225
No of obs	267	267

Panel C: Results after Controlling for Corporate Governance

	POST_ROA		
	(1)	(2)	(3)
Intercept	-0.115*	-0.166	-0.183
	(0.073)	(0.166)	(0.125)
VOTEFOR	0.157**	0.241**	0.248**
	(0.028)	(0.023)	(0.020)
ANNRET	-0.022	-0.087	-0.083
	(0.724)	(0.391)	(0.396)
SIZE	0.004	0.007	0.007
	(0.182)	(0.135)	(0.119)
BM	-0.051***	-0.050	-0.050
	(0.005)	(0.146)	(0.145)
LEV	-0.064*	-0.029	-0.028
	(0.092)	(0.580)	(0.596)
PASTRET	-0.014	-0.000	-0.000
	(0.259)	(0.988)	(0.998)
CASHDEAL	-0.010	-0.016	-0.015
	(0.357)	(0.252)	(0.275)
SAMEIND	-0.001	-0.003	-0.003
	(0.929)	(0.837)	(0.814)
DEALSIZE	-0.006	-0.006	-0.007
	(0.455)	(0.583)	(0.512)
DUALITY	-0.002		
	(0.825)		
GINDEX		-0.001	
		(0.641)	
EINDEX			0.002
			(0.582)
Year dummies	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes
R-squared	0.542	0.525	0.525
No of obs	182	143	143

Table 3 Market Reactions to Voting Outcomes

This table reports results of OLS regressions. *VOTERET* is the acquirer's buy-and-hold market-adjusted return over the three-day window centered on the voting date. *SIZE*, *BM*, and *LEV* are measured at the fiscal year end prior to the merger announcement. Appendix 1 provides detailed variable definitions. Inferences are based on standard errors adjusted by heteroskedasticity and clustered by firm. p-values based on two-tailed tests are reported in parentheses. *, **, and *** stand for statistical significance at the 0.10, 0.05, and 0.01 level, respectively.

	VOTERET	
	(1)	(2)
Intercept	-0.013	0.022
	(0.571)	(0.445)
VOTEFOR	0.029	0.009
	(0.343)	(0.792)
ANNRET		-0.017
		(0.640)
SIZE		-0.001
		(0.541)
BM		-0.016**
		(0.046)
LEV		-0.026**
		(0.043)
PASTRET		0.024***
		(0.009)
CASHDEAL		0.007
		(0.154)
SAMEIND		0.000
		(0.967)
DEALSIZE		-0.001
		(0.866)
Year dummies	No	Yes
Industry dummies	No	Yes
R-squared	0.004	0.109
No of obs	359	359

Table 4 M&A Voting Outcomes and Post-merger Stock Returns

This table reports results of OLS regressions. The dependent variable is *POST_RET*, the buy-and-hold market-adjusted return for the 12-month period after the completion of the deal. *SIZE*, *BM*, and *LEV* are measured at the fiscal year end prior to the merger announcement. Appendix 1 provides detailed variable definitions. Inferences are based on standard errors adjusted by heteroskedasticity and clustered by firm. *p*-values based on two-tailed tests are reported in parentheses. *, **, and *** stand for statistical significance at the 0.10, 0.05, and 0.01 level, respectively.

	POST_RET	
	(1)	(2)
Intercept	-0.427**	-0.737***
	(0.019)	(0.005)
VOTEFOR	0.482**	0.663**
	(0.041)	(0.014)
ANNRET		-0.153
		(0.579)
SIZE		0.014
		(0.321)
BM		-0.023
		(0.769)
LEV		0.094
		(0.442)
PASTRET		-0.170**
		(0.029)
CASHDEAL		-0.021
		(0.652)
SAMEIND		-0.034
		(0.575)
DEALSIZE		0.075
		(0.134)
Year dummies	No	Yes
Industry dummies	No	Yes
R-squared	0.012	0.168
No of obs	359	359

Table 5 Factor Regression Results

The table reports time-series four-factor regression results. Starting in the month when the merger is completed, we populate the voting outcome/the residual to the subsequent 12 months. Portfolio abnormal performance is estimated as the intercept term in the following calendar-time four-factor regression: $R_{pt} - R_{ft} = a + b(R_{mt} - R_{ft}) + sSMB_t + hHML_t + uUMD_t + \varepsilon_t$, where R_{pt} is the equally weighted return of the portfolio in calendar month *t*; R_{mt} is the return on the value-weighted index of NYSE, AMEX, and NASDAQ stocks in month *t*; R_{ft} is the one month Treasury bill rate in month *t*; SMB_t is the return on small firms minus the return on large firms in month *t*; HML_t is the return on high book-to-market stocks minus the return on low book-to-market stocks in month *t* (Fama and French, 1993); and UMD_t is the return on high momentum stocks minus the return on low momentum stocks in month t (Carhart, 1997). In Panel A, we form terciles every month according to the raw values of voting outcome. An arbitrage portfolio is constructed by longing stocks with high voting outcome and shorting stocks with low voting outcome. We require that low and high portfolios each consist of at least five observations. In panel B, we form terciles based on the residual voting outcome, which is the residual from regressing *VOTEFOR* on *ANNRET*, *SIZE*, *BM*, *LEV*, *PASTRET*, *CASHDEAL*, *SAMEIND*, *DEALSIZE*, year dummies, and industry dummies. An arbitrage portfolio is constructed by longing acquirers with high residual voting outcome and shorting acquirers with low residual voting outcome. We require that low and high portfolios each consist of at least five observations. Appendix 1 provides detailed variable definitions. *p*-values based on two-tailed tests are reported in parentheses. *, **, and *** stand for statistical significance at the 0.10, 0.05, and 0.01 level, respectively.

Panel A: Forming Portfolios According to Voting Outcomes

	a	b	s	h	u	R^2	No of obs
Low voting outcome	-0.014***	1.288***	0.162	0.176	-0.361***	0.611	161
	(0.003)	(0.000)	(0.233)	(0.198)	(0.000)		
High voting outcome	-0.003	1.205***	0.039	0.429***	-0.213***	0.672	161
	(0.436)	(0.000)	(0.710)	(0.000)	(0.001)		
Arbitrage portfolio	0.011**	-0.082	-0.123	0.252	0.149	0.048	161
	(0.036)	(0.492)	(0.435)	(0.114)	(0.126)		

Panel B: Forming Portfolios According to Residual Voting Outcomes

	a	b	s	h	u	R^2	No of obs
Low residual voting outcome	-0.014***	1.260***	0.185	0.072	-0.420***	0.618	161
	(0.002)	(0.000)	(0.171)	(0.600)	(0.000)		
High residual voting outcome	0.000	1.163***	-0.003	0.565***	-0.086	0.636	161
	(0.896)	(0.000)	(0.976)	(0.000)	(0.186)		
Arbitrage portfolio	0.014***	-0.097	-0.188	0.494***	0.335***	0.147	161
	(0.007)	(0.424)	(0.237)	(0.002)	(0.001)		

Table 6 M&A Voting Outcomes and Post-merger Earnings Announcement Return

This table reports results of OLS regressions. The dependent variable is *POST_ANNRET*, which is the average of the four buy-and-hold market-adjusted return over the three-day window centered on the quarterly earnings announcement in the fiscal year after deal completion. *SIZE*, *BM*, and *LEV* are measured at the fiscal year end prior to the merger announcement. Appendix 1 provides detailed variable definitions. Inferences are based on standard errors adjusted by heteroskedasticity and clustered by firm. p-values based on two-tailed tests are reported in parentheses. *, **, and *** stand for statistical significance at the 0.10, 0.05, and 0.01 level, respectively.

	POST_ANNRET	
	(1)	(2)
Intercept	-0.035*	-0.029
	(0.071)	(0.262)
VOTEFOR	0.050**	0.061**
	(0.050)	(0.039)
ANNRET		0.041
		(0.200)
SIZE		0.000
		(0.798)
BM		-0.004
		(0.653)
LEV		-0.006
		(0.698)
PASTRET		-0.007
		(0.285)
CASHDEAL		0.007
		(0.156)
SAMEIND		-0.005
		(0.358)
DEALSIZE		-0.004
		(0.383)
Year dummies	No	Yes
Industry dummies	No	Yes
R-squared	0.014	0.137
No of obs	333	333

Table 7 M&A Voting Outcomes and Post-merger Analyst Forecast Error

This table reports results of OLS regressions. *POST_AFE* is the average quarterly analyst forecast error, measured as actual EPS minus median analyst forecast divided by the stock price, in the 12 months after deal completion. *SIZE*, *BM*, and *LEV* are measured at the fiscal year end prior to the merger announcement. Appendix 1 provides detailed variable definitions. Inferences are based on standard errors adjusted by heteroskedasticity and clustered by firm. p-values based on two-tailed tests are reported in parentheses. *, **, and *** stand for statistical significance at the 0.10, 0.05, and 0.01 level, respectively.

	POST_AFE	
	(1)	(2)
Intercept	-0.010	-0.024**
	(0.155)	(0.014)
VOTEFOR	0.011	0.016*
	(0.230)	(0.093)
ANNRET		-0.015
		(0.110)
SIZE		0.001**
		(0.049)
BM		0.000
		(0.874)
LEV		-0.008*
		(0.080)
PASTRET		0.002
		(0.263)
CASHDEAL		0.003*
		(0.072)
SAMEIND		0.005
		(0.123)
DEALSIZE		-0.001
		(0.742)
Year dummies	No	Yes
Industry dummies	No	Yes
R-squared	0.007	0.165
No of obs	289	289

Table 8 Limited Attention

This table reports results of OLS regressions. The dependent variable is *POST_RET*, the buy-and-hold market-adjusted return for the 12-month period after the completion of the deal. Panel A partitions the sample based on *H_NUMEA*, a dummy variable which equals one if the number of same-industry quarterly earnings announcements on the voting date is greater than the median value of the year. Panel B partitions the sample based on *L_INSTOWN*, a dummy variable which equals one if the acquirer's institutional ownership, is lower than the median value. Panel C partitions the sample based on *SP500*, a dummy variable which equals one if the acquirer is a constituent of S&P 500, and zero otherwise. Panel D partitions the sample based on *L_SIZE*, a dummy variable which equals one if the acquirer's size is lower than the median value. *SIZE*, *BM*, and *LEV* are measured at the fiscal year end prior to the merger announcement. Appendix 1 provides detailed variable definitions. Inferences are based on standard errors adjusted by heteroskedasticity and clustered by firm. p-values based on two-tailed tests are reported in parentheses. *, **, and *** stand for statistical significance at the 0.10, 0.05, and 0.01 level, respectively.

Panel A: Concurrent Earnings Announcements

	POST_RET			
	H_NUMEA=1		*H_NUMEA*=0	
	(1)	(2)	(3)	(4)
Intercept	-0.645***	-1.016***	-0.159	-0.852***
	(0.007)	(0.004)	(0.534)	(0.010)
VOTEFOR	0.794**	0.976***	0.100	0.437
	(0.012)	(0.009)	(0.763)	(0.249)
ANNRET		0.281		-0.746**
		(0.460)		(0.049)
SIZE		0.021		0.018
		(0.279)		(0.374)
BM		-0.027		0.048
		(0.792)		(0.654)
LEV		-0.116		0.195
		(0.485)		(0.246)
PASTRET		-0.034		-0.291***
		(0.740)		(0.007)
CASHDEAL		-0.057		-0.011
		(0.415)		(0.876)
SAMEIND		-0.048		0.014
		(0.546)		(0.880)
DEALSIZE		0.136*		-0.000
		(0.070)		(1.000)
Year dummies	No	Yes	No	Yes
Industry dummies	No	Yes	No	Yes
R-squared	0.034	0.229	0.001	0.313
No of obs	192	192	167	167

Panel B: Institutional Ownership

	POST_RET			
	L_INSTOWN =1		*L_INSTOWN* =0	
	(1)	(2)	(3)	(4)
Intercept	-0.507**	-0.985***	-0.211	0.125
	(0.031)	(0.005)	(0.457)	(0.786)
VOTEFOR	0.583*	0.648*	0.207	0.192
	(0.067)	(0.085)	(0.566)	(0.670)
ANNRET		0.115		-0.254
		(0.783)		(0.465)
SIZE		0.054***		-0.029
		(0.010)		(0.101)
BM		0.138		-0.116
		(0.307)		(0.201)
LEV		0.091		0.220
		(0.623)		(0.199)
PASTRET		-0.079		-0.196**
		(0.489)		(0.038)
CASHDEAL		-0.027		-0.021
		(0.669)		(0.731)
SAMEIND		0.080		-0.148*
		(0.287)		(0.081)
DEALSIZE		0.136**		-0.040
		(0.026)		(0.574)
Year dummies	No	Yes	No	Yes
Industry dummies	No	Yes	No	Yes
R-squared	0.021	0.380	0.002	0.201
No of obs	179	179	180	180

Panel C: S&P 500

	POST_RET			
	SP500=1		*SP500*=0	
	(1)	(2)	(3)	(4)
Intercept	-0.052	-0.570	-0.486**	-0.775**
	(0.905)	(0.411)	(0.012)	(0.011)
VOTEFOR	0.030	0.220	0.547**	0.845***
	(0.958)	(0.738)	(0.030)	(0.004)
ANNRET		-0.033		-0.121
		(0.967)		(0.693)
SIZE		0.042		-0.009
		(0.255)		(0.714)
BM		-0.146		0.029
		(0.475)		(0.754)
LEV		0.407		0.103
		(0.300)		(0.466)
PASTRET		-0.515		-0.150**
		(0.114)		(0.044)
CASHDEAL		-0.061		-0.026
		(0.510)		(0.626)
SAMEIND		-0.019		-0.014
		(0.890)		(0.852)
DEALSIZE		-0.055		0.082
		(0.647)		(0.129)
Year dummies	No	Yes	No	Yes
Industry dummies	No	Yes	No	Yes
R-squared	0.000	0.423	0.016	0.186
No of obs	77	77	282	282

Panel D: Size

	POST_RET			
	L_SIZE =1		*L_SIZE* =0	
	(1)	(2)	(3)	(4)
Intercept	-0.768***	-1.034**	0.170	-0.175
	(0.001)	(0.014)	(0.497)	(0.681)
VOTEFOR	0.940***	1.217***	-0.307	-0.252
	(0.002)	(0.002)	(0.349)	(0.509)
ANNRET		-0.072		-0.436
		(0.871)		(0.205)
SIZE		0.001		0.027
		(0.978)		(0.199)
BM		0.070		-0.093
		(0.567)		(0.313)
LEV		-0.047		0.252
		(0.791)		(0.134)
PASTRET		-0.066		-0.214**
		(0.526)		(0.013)
CASHDEAL		-0.056		0.032
		(0.439)		(0.517)
SAMEIND		-0.052		0.020
		(0.600)		(0.781)
DEALSIZE		0.146**		-0.055
		(0.019)		(0.333)
Year dummies	No	Yes	No	Yes
Industry dummies	No	Yes	No	Yes
R-squared	0.046	0.222	0.006	0.363
No of obs	179	179	180	180

Appendix 1 Variable Definitions

Variable Name	Definition	Data Source
VOTEFOR	The proportion of "for" votes to the total number of votes possible based on all voting rights	ISS; RiskMetrics
ANNRET	The acquirer's buy-and-hold market-adjusted return over the three-day window centered on the M&A deal announcement date	CRSP
SIZE	The log of total assets (AT) at the fiscal year end prior to the M&A deal announcement	Compustat
BM	Book value of equity (CEQ) divided by market value of equity (CSHO*PRCC_F) at the fiscal year end prior to the M&A deal announcement	Compustat
LEV	Book value of debts (DLC + DLTT) over total assets (AT) at the fiscal year end prior to the M&A deal announcement	Compustat
PASTRET	The buy-and-hold market-adjusted return in the six months prior to the announcement of the deal	CRSP
CASHDEAL	Dummy variable: 1 for deals at least partially cash-financed, and 0 otherwise	SDC
SAMEIND	Dummy variable: 1 if the acquirer and the target share the same 2-digit SIC code, and 0 otherwise	SDC
DEALSIZE	Deal value divided by the acquirer's market value of equity (calculated as the number of shares outstanding multiplied by the stock price at the 11th trading day prior to the announcement date)	SDC; CRSP
POST_RET	The buy-and-hold market-adjusted return for the 12-month period after deal completion. If the firm is delisted during that period, we incorporate delisting returns. We assume that the proceeds will be reinvested in the market portfolio after the delisting payment date	CRSP
POST_ROA	The residual from regressing the industry-adjusted ROA of the acquirer in the year after deal completion on the industry-adjusted ROA of the combined firm in the year prior to the announcement. ROA is calculated as income before extraordinary items (IB) divided by total assets (AT) at the beginning of the year. Industry-adjusted ROA is ROA minus the ROA of the industry (defined by the first 2-digit SIC code). Industry-adjusted ROA of the combined firm is the weighted average of the industry-adjusted ROA of the acquirer and the target with weights determined by total assets	Compustat
NEW_POST_ROA	The residual from regressing the industry-adjusted ROA of the acquirer in the year after deal completion on the industry-adjusted ROA of the combined firm in the year prior to the announcement. ROA is calculated as income before extraordinary items (IB) plus amortization of goodwill (AMGW) divided by total assets (AT) minus goodwill (GDWL) at the beginning of the year. If amortization of goodwill or goodwill is missing, we replace it with zero. Industry-adjusted ROA is ROA minus the ROA of the industry (defined by the first 2-digit SIC code). Industry-adjusted ROA of the combined firm is the weighted average of the industry-adjusted ROA of the acquirer and the target with weights determined by total assets minus goodwill.	Compustat

DUALITY	Dummy variable: 1 if the CEO is also the chairman of the board, and 0 otherwise	Execucomp
GINDEX	The governance index based on 24 antitakeover provisions	RiskMetrics
EINDEX	The entrenchment index based on 6 antitakeover provisions	RiskMetrics
VOTERET	The acquirer's buy-and-hold market-adjusted return over the three-day window centered on the voting date	CRSP
POST_ANNRET	The average of the four buy-and-hold market-adjusted return over the three-day window centered on the quarterly earnings announcement in the fiscal year after deal completion	Compustat; CRSP
POST_AFE	The average quarterly analyst forecast error, measured as actual EPS minus median analyst forecast divided by the stock price, in the 12 months after deal completion	I/B/E/S; CRSP
H_NUMEA	Dummy variable: 1 if the number of same-industry quarterly earnings announcements on the voting date is greater than the median value of the year, and 0 otherwise	Compustat
L_INSTOWN	Dummy variable: 1 if the acquirer's institutional ownership, measured prior to the M&A deal announcement, is lower than the median value, and 0 otherwise	Thomson Reuters
SP500	Dummy variable: 1 if the acquirer is a constituent of S&P 500, and 0 otherwise	Compustat
L_SIZE	Dummy variable: 1 if the acquirer's size, measured at the fiscal year end prior to the M&A deal announcement, is lower than the median value, and 0 otherwise	Compustat