JOURNAL OF FINANCIAL AND QUANTITATIVE ANALYSIS Vol. 54, No. 3, June 2019, pp. 1347–1369

doi:10.1017/S0022109018000959

Investor Inattention and Stock Prices: Evidence from Acquisitions with a Choice of Payment Type

Erik Lie*

Abstract

I report evidence that shareholders holding a combined 15% of shares are inattentive or partially inattentive when confronted with the decision to receive cash or stock for their shares in acquisitions. The average cost of such inattention is 2%, and it increases to 6% for the tertile of transactions with the greatest difference between the cash and stock values. Most interestingly, I show that inattention affects stock prices because attentive shareholders bid up the stock price in anticipation of a wealth transfer from inattentive shareholders.

I. Introduction

Odean (1999) and Barber and Odean (2000) show that active trading impedes portfolio returns, and French (2008) concludes in his presidential address that "the average investor would increase his return if he switched to a passive strategy." But being overly passive can also be harmful. For example, the value from the embedded flexibility in some securities, such as stock options and convertible bonds, relies on investor attention. More generally, Hirshleifer and Teoh ((2003), p. 339) argue that "inattentive investors lose money by ignoring aspects of the economic environment."

For individual stock investors with limited holdings, inattention is usually inconsequential. For example, an individual shareholder's lack of attention to a company's new product launch is unlikely to destroy shareholder value. Even neglecting shareholder elections, such as who should be on the board of directors or whether a firm should be sold, is trivial unless the outcome of the vote has significant value implications *and* the investor's vote is likely to affect the outcome (which is not true for most investors).

*Lie (corresponding author), erik-lie@uiowa.edu, University of Iowa Tippie College of Business.
I am grateful for comments and suggestions from Jarrad Harford (the editor), David Hirshleifer (the referee), and seminar participants at Purdue University, Shanghai Advanced Institute of Finance, the University of Iowa, and the University of Oklahoma.

There are, however, transactions in which firms discriminate against certain shareholders, and shareholders need to be attentive to minimize losses. This study examines shareholder inattention in one type of transaction where shareholders might face discrimination, namely, acquisitions that leave the choice of payment type to target shareholders. In these acquisitions, shareholders can choose between cash and stock, and if they fail to make a choice, they typically receive the less popular payment type. The relative value of the cash and stock payments varies considerably, such that the choice of payments can have great value consequences for individual shareholders, and inattention can be costly. The complexity of the payment terms also varies, with some being so complex that shareholders might find it hard to be attentive to all relevant information. Lastly, the stock price around the election often differs noticeably from the overall weighted deal value. Thus, acquisitions with a choice of payment type provide rare insight into individual shareholders' choices, including the extent of shareholder inattention and its consequences for shareholders and stock prices.

In a sample of acquisitions with payment choice between 1985 and 2014 that have complete election results, I find that, on average, target shareholders elect stock payment for 51% of their shares and cash payment for 38%. No election was deemed for the remaining 11%. Regressions reveal that target shareholders primarily base their choice of payment type on the relative value of the cash and stock payments. In fact, a value wedge measure explains two-thirds of the variation in the choices of stock and cash payments. Notably, if the values for the stock and cash choices are similar, shareholders favor stock to cash. But if the deal terms are complex, shareholders tend to shy away from stock (which is generally harder to value) in favor of cash, consistent with theories of ambiguity aversion (Epstein and Schneider (2008), Ju and Miao (2012)).

Shareholders' indifference could explain nonelections for cases with either similar values for the cash and stock payments or moderately higher value for the cash payment due to the differential taxation. Because I am interested in nonelections that stem from inattention, not indifference, I focus on a subsample of cases where the stock value exceeds the cash value by at least 5% or the cash value exceeds the stock value by more than the maximum possible tax liability for cash payments. In this subsample, the fraction of nonelections is 7.4%. Thus, I argue that shareholders holding a combined 7.4% of the shares are inattentive to the payment decision and would have expected to do better even with a random election. For the same subsample, I find that 7.3% of the shares, on average, are submitted for the inferior payment type. I argue that this represents a conservative estimate of the fraction of shares held by partially inattentive shareholders, that is, shareholders who recognize that they can make a choice but are not sufficiently attentive to the details of the terms to make a fully informed choice. In sum, shareholders representing approximately 15% appear to be completely or partially inattentive to the election of payment type.

There are two nonmutually exclusive possibilities for the apparent inattention to the payment decisions. One possibility is that shareholders generally disregard relevant information regarding the individual shares in their portfolios. Another possibility is that they find it hard to remain attentive in the face of complexity or information overload (Hirshleifer and Teoh (2003), Agnew and Szykman (2005),

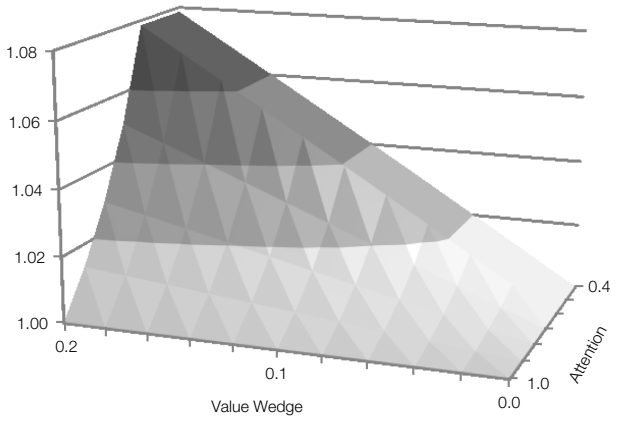
and Gabaix and Laibson (2006)). Consistent with the latter, the fraction of nonelections increases with the complexity of the payment terms. That is, when shareholders confront complex decisions, some apparently lose attention and withdraw from the decision-making process.

The results discussed thus far suggest that inattentive shareholders effectively leave money on the table for attentive shareholders. Generally, if a fraction $p = \langle 0, 1 \rangle$ of the target shares receives the high payment H and $1 - p$ receives the low payment L, the overall weighted deal value is $H \times p + L(1 - p)$. Suppose further that attentive shareholders, holding a fraction of shares denoted by a, choose H, whereas inattentive shareholders fail to make a choice and, thus, receive the residual shares after the choices have been considered. If $a > p$, the high payment is prorated so that the attentive shareholders get a fraction of H equal to p/a, and the weighted deal value to attentive shareholders equals $H \times p/a + L(1 - p/a)$. If $a \leq p$, the high payment is not prorated so that the attentive shareholders get a deal value equal to H.[1] The ratio of the weighted value to attentive shareholders to the overall weighted deal value is depicted in Figure 1 for different value wedges between H and L and for different levels of attention while holding p at 0.6. Irrespective of whether the high payment is prorated (i.e., whether $a > p$ or $a \leq p$), attentive shareholders are relatively better off with a high-value wedge. The exception is if all shareholders are attentive (i.e., $a = 1 > p$), in which case the ratio is constant at a value of 1.

FIGURE 1

Ratio of Deal Value for Attentive Shareholders to Deal Value for All Shareholders

Figure 1 displays the ratio of the weighted deal value for attentive shareholders to the overall weighted deal value for all shareholders. Attention is the fraction of shares held by attentive shareholders (*a*). Value wedge is the natural logarithm of the ratio of the value of the high payment to the value of the low payment. (In later empirical analysis, this is referred to as the absolute value wedge.) The fraction of shares receiving the high payment is set to equal 0.6.



[1] In a few cases, p is not preset but is set between a minimum p_L and a maximum p_H depending on elections. If $a > p_H$, then $p = p_H$, and we get the prorated case where $a > p$. Alternatively, if $a \leq p_H$, then $a \leq p$, and we get the non-prorated case.

A novel question is whether attentive shareholders bid up the price in anticipation of a forthcoming wealth transfer. To answer this, I examine the ratio of the stock price to the overall weighted deal value per share on the election day (the deadline for shareholders to make a payment choice). In the absence of both a wealth transfer and uncertainty about deal completion, I expect the price ratio to equal 1 on the election day. If the anticipated wealth transfer is priced, I conjecture that the price ratio increases with the value wedge between the payment types on the election day. On the day after the election day, only shares that have not been submitted for election are still trading. Because these shares receive relatively more of the less popular payment type, I conjecture that the price ratio declines, especially when the value wedge is pronounced.

On average, the price ratio is 0.99 on the election day, suggesting some uncertainty about acquisition completion. More importantly for the purpose of this study, the price ratio exceeds 1 in 37% of the cases. And consistent with the previous conjecture, the fraction above 1 increases from 12% of the cases where the absolute value wedge is below 1% to 37% of the cases where the absolute value wedge is between 1% and 10% and to 58% of the cases where the absolute value wedge exceeds 10%. I interpret this as evidence that shareholders' inattention gives rise to an expected wealth transfer to attentive shareholders that, in turn, affects stock prices.

On the postelection day, the average price ratio drops by 2% to 0.97, and only 13% of the price ratios remain above 1. The magnitude of the drop increases with the value wedge, from no decline when the value wedge is 0 to a 6% average decline when the absolute value wedge is in the upper tertile. These results suggest that shares that have not been submitted for election are worth less, especially if the value wedge is large, such that the adverse consequence of not having made an election is also large. I further interpret the results to mean that the average cost of inattention to payment elections is 2%, ranging from no cost when there is no value wedge to a 6% average cost when the absolute value wedge is in the upper tertile.

An extensive literature on consumer and investor inattention has emerged in recent years. Studies report that consumers are inattentive to shipping costs (Hossain and Morgan (2006)), sales taxes (Chetty, Looney, and Kroft (2009)), substitute products (Malmendier and Lee (2011)), odometer readings on cars beyond the first digit (Lacetera, Pope, and Sydnor (2012)), and overdraft fees (Stango and Zinman (2014)). Pervasive inertia and inattention have also been documented among participants in pension plans (Madrian and Shea (2001), Agnew, Balduzzi, and Sundén (2003), and Dahlquist and Martinez (2015)) and employee stock purchase plans (Babenko and Sen (2014)).

The more relevant part of the inattention literature is that which focuses on inattention among investors in individual stocks. Hirshleifer and Teoh (2003), Peng and Xiong (2006), DellaVigna and Pollet (2007), Hirshleifer, Lim, and Teoh (2011), and Andrei and Hasler (2015) develop models that predict that investor inattention (e.g., neglecting footnotes in financial statements) affects stock prices and subsequent returns. Huberman and Regev (2001), Tetlock (2011), and Gilbert, Kogan, Lochstoer, and Ozyildirim (2012) document empirically that announcements of stale news affect stock prices, suggesting investor inattention.

Hirshleifer, Lim, and Teoh (2009) and DellaVigna and Pollet (2009) find, respectively, that the stock market responds more slowly to earnings surprises on days when the sheer number of earnings announcements dilutes attention and on Fridays when attention is conjectured to be low. DeHaan, Shevlin, and Thornock (2015) employ a different methodology to show that investor attention is lower after the market closes and on busy reporting days (but not any different on Fridays) and that managers tend to issue bad earnings when attention is expected to be low. Cohen and Frazzini (2008) document return predictability across firms linked through supplier–customer relations, which they attribute to investor inattention. And Barber and Odean (2008) find that individual investors are net buyers of stocks with news stories or extreme returns that likely catch investors' attention.

The most similar study to mine is that of Holderness and Pontiff (2016), which also examines individual shareholder choices. Holderness and Pontiff find that the average nonparticipation rate in rights offerings is 36%, despite a substantial average discount on the expiration day of 13%. They further estimate the average wealth transfer from participating to nonparticipating shareholders to be 4.5% of the firm value. Finally, Holderness and Pontiff report a negative relation between the realized wealth transfer (which depends on nonparticipation) and the abnormal stock return around the right offering announcements, and they attribute this relation to i) market participants inferring bad news about firms that undertake offerings with large wealth transfers or ii) selling pressure from shareholders anticipating to be on the losing side of the wealth transfer.[2] Thus, in contrast to my study, they find no evidence that the prospect of inattention or nonparticipation causes attentive shareholders to bid up prices, nor do they conjecture this possibility.

This study contributes to the literature on investor inattention in several ways. It complements Holderness and Pontiff (2016) in providing estimates of both the magnitude and cost of shareholder inattention for a different shareholder choice. More broadly, the study contributes to recent structural literature in behavioral finance that tries to estimate the magnitude of inattention or other psychological effects (see DellaVigna (2017) for an extensive survey). But most importantly, whereas other studies show theoretically and empirically that inattention affects stock prices via under- and overreaction to information releases, this study demonstrates a different way in which inattention affects stock prices that is unrelated to mispricing. In particular, I conjecture that stock prices reflect an anticipated wealth transfer from inattentive to attentive shareholders, and my unique setting facilitates compelling evidence to this effect. Such a wealth transfer could occur in any transaction in which shareholders receive heterogeneous treatment based on their choices, such as self-tender offers, inter-firm tender offers, rights offerings, and split-offs, although it might be infeasible to document equally direct and compelling evidence in alternative settings.

[2] It is unclear why shareholders on the losing side of the wealth transfer would sell because they are presumably less attentive to the wealth transfer. And if they do sell, there should be more shareholders who participate, thus reducing the wealth transfer and countering any negative relation between the announcement return and the wealth transfer.

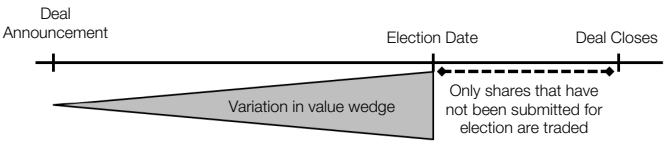
II. Background on Acquisitions with Payment Choices

Boone, Lie, and Liu (2014) document an upward time trend in the fraction of acquisitions of public firms that are paid for with a mix of stock and cash relative to pure stock or pure cash, especially during the period from 1998 to 2007. They also document that approximately half of the acquisitions involving a mix of stock and cash payment leave target shareholders a choice of payment. Importantly, there is great heterogeneity in the deals involving a payment choice along multiple dimensions, including the structure of the payment choices.

Figure 2 shows a timeline of typical merger and acquisition (M&A) transactions involving a choice of payment, from the announcement of the deal to the election and finally closing. The values of the cash and stock payments are generally set to be similar at the announcement of the transaction.[3] The values might further be designed to remain similar, or they might be allowed to diverge during the period leading up to the deadline for making an election (the "election date").[4] For example, in Microsoft Corporation's acquisition attempt of Yahoo Inc. in 2008, Microsoft indicated that it would give Yahoo holders the choice between $31 in cash per share and 0.9509 of a Microsoft share. This structure initially pegged the values of the cash and stock payments to be the same, but they quickly diverged as Microsoft's stock price dropped during the subsequent days.

FIGURE 2
Timeline for Typical Transactions

Figure 2 shows the timeline for typical M&A transactions in which shareholders can choose the type of payment.



The simplest terms for the payment choices entail a fixed dollar value for the cash payment and a fixed exchange ratio for the stock payment. An example of this follows from Ecolab Inc.'s S-4 filing dated Aug. 2011:

> Nalco stockholders may elect to receive either 0.7005 shares of Ecolab common stock or $38.80 in cash, without interest, per share of Nalco common stock, provided that approximately 70% of the issued and outstanding shares of Nalco common stock immediately prior to the effective time will be converted into the right to receive Ecolab common stock and approximately 30% of issued and outstanding shares of Nalco

[3] Exceptions include Berkshire Hathaway's acquisitions of FlightSafety International in 1996 and International Dairy Queen in 1997, in which the cash values were set deliberately to exceed the stock values. Neither of these transactions is in the final sample.

[4] The election date generally comes shortly before the completion of the merger. In my sample, the mean (median) number of calendar days between the announcement date and the election date is 158 (149), and between the election date and the completion date, it is 10 (7).

> common stock immediately prior to the effective time will be converted into the right to receive cash.

More complex payment terms are often used to equalize the values or at least prevent a large divergence in the values of the cash and stock payments on the election date. An example of this follows from Merrill Lynch & Co., Inc.'s S-4 filing dated June 2007:

> For each share of First Republic common stock you hold immediately prior to completion of the merger, you will receive, at your election, either $55.00 in cash or $55.00 in Merrill Lynch common stock, but subject to certain proration procedures designed to ensure that the aggregate consideration to be paid by Merrill Lynch will be, as nearly as practicable, 50% cash and 50% common stock. If you elect to receive Merrill Lynch common stock for your shares of First Republic common stock, the number of shares of Merrill Lynch common stock you will receive for each share of First Republic common stock will be equal to (1) $55.00 divided by (2) the average of the last reported sales prices of Merrill Lynch common stock for the last five trading days prior to the date on which the merger is completed.

Incidentally, Merrill Lynch set the election date to be the first day of the 5-day period used to estimate the exchange ratio for the stock payment, such that the exchange ratio was not settled on the election date. A different example follows from CME Group Inc.'s S-4 filing dated June 2008:

> The cash consideration per share of NYMEX Holdings common stock for which a valid cash election has been made will be equal to the sum of (a) $36.00 plus (b) the product of (1) 0.1323 and (2) the average closing sale price of CME Group Class A common stock on the New York Stock Exchange LLC, or the "NYSE," for the period of ten consecutive trading days ending on the second full trading day prior to the effective time of the merger. We call this average the "Average CME Group Share Price." The stock consideration per share of NYMEX Holdings common stock for which a valid stock election has been made will be the number of shares of CME Group Class A common stock equal to the cash consideration per share divided by the Average CME Group Share Price.

CME Group set the election date to be the last day of the 10-day period used to calculate the average price that dictates the final payment terms. Thus, it would be possible for a shareholder to calculate the final payment terms immediately before making an election. In other cases similar to this, the election date comes before or during the period underlying the average price, in which case a shareholder would have to make an election based on a prediction of the final payment terms. Indeed, in the final example that follows, the election date comes during a 30-day period used to calculate the average price, and the payment terms are further confounded by a collar. The following is from priceline.com's S-4 filing dated Dec. 2012:

> Upon completion of the merger, each issued and outstanding share of KAYAK Class A common stock and KAYAK Class B common stock . . . will be converted into the right to receive, at the election of the stockholder, either $40.00 in cash . . . or a fraction of a share of priceline.com common stock. . . . KAYAK stockholders who receive the merger consideration as stock will receive for each share of KAYAK common stock a fraction of a share of priceline.com common stock determined by dividing $40.00 by the aggregate volume weighted average price per share of priceline.com common stock for the 30 day trading period ending on the second full trading day prior to the effective date (the "priceline.com average trading price"), provided that the priceline.com average trading price is between (or including) $571.35 and $698.32 per share. If the priceline.com average trading price is below $571.35 then the exchange ratio will be fixed at 0.07001 shares of priceline.com common stock to be delivered for each share of KAYAK common stock. If the priceline.com average trading price is above $698.32 then the exchange ratio will be fixed at 0.05728 shares of priceline.com common stock to be delivered for each share of KAYAK common stock and the value of the stock consideration delivered to holders of KAYAK common stock who receive stock consideration will be higher or lower than $40.00 per share, as applicable.

Some of these examples show that it can be difficult for a shareholder to correctly estimate the values of the cash and stock payments on the election date. In the empirical analysis, I separate out cases with very simple payment terms from others to gauge whether simplicity affects the election choices.

The examples also illustrate that even when target shareholders are offered a choice of payment method, the acquiring company generally restricts the fraction of the total payment that can be paid out as cash and stock. These fractions might be very specific, approximate, or given as a range, such as a maximum amount of cash to be paid. If too many shareholders request a certain payment method, that payment type will be prorated. Those shares that are deemed not to have made any election will generally be treated similarly as the shares that elected the payment method that did not require proration. For example, suppose that the acquirer specifies that it will pay cash for 50% of the shares and stock for the other 50% of the shares and that 75% of the shares elected cash, 15% elected stock, and 10% made no election. Then, typically two-thirds of the shares that elected cash will be exchanged for cash, whereas all other shares will be exchanged for stock. The implication is that in cases where the values of the cash and stock payments diverge, it can be costly not to make any election.[5]

[5] Importantly, when there is a substantial value wedge, it is better to make a random election based on a simple coin flip than it is to not make an election because the latter virtually guarantees the least valuable payment type.

III. Sample

The initial sample is derived from the Securities Data Company (SDC) Mergers and Acquisitions database. If necessary, I augment and correct the information in SDC with information from various news sources and company filings with the U.S. Securities and Exchange Commission (SEC). I further require that i) the acquisition was announced between 1985 and 2014, ii) the acquiring firm sought 100% of the shares of the target firm, iii) the acquisition is completed, iv) both the target and the acquiring firm are publicly traded, v) the target shares are ordinary common shares, and vi) the payment includes a choice between cash and stock. My criteria result in a sample of 280 observations. Figure 3 displays the distribution of the sample over time. The majority of the observations stem from the last two decades, and the yearly variation seems to correlate with the strength of the overall economy.

Of the 280 observations, 129 miss necessary information to be included in the empirical analysis. In addition, 14 observations allow a choice between cash, stock, or a specified mix, and the mixed election is not subject to proration. Finally, in three cases, nonelectors are prespecified to receive stock, and in another three cases, nonelectors are prespecified to receive cash. I exclude all of these observations, yielding a final sample of 131 observations.

The first part of my analysis relies on election results. Complete election results are only available for 62 deals. The second part of my analysis relies on estimated values around the election dates. Of the 62 observations with complete election results, 51 also have available data to estimate values around the election dates. In addition, 69 observations with incomplete election results have available data to estimate values around the election dates, yielding a total of 120 observations for the second part of my analysis.

FIGURE 3
Distribution of Acquisitions with Payment Choice over Time

Figure 3 shows the yearly distribution of 280 acquisitions announced between Jan. 1985 and Dec. 2014 where the target shareholders have a choice of payment type.

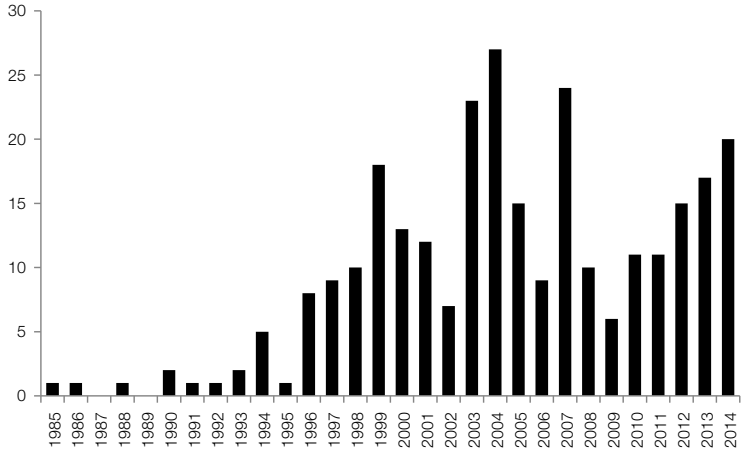


Table 1 presents descriptive statistics for the sample of 62 acquisitions with complete election results and the additional sample of 69 acquisitions with available data to estimate values around the election dates (but incomplete election results). The mean market capitalization of the acquirer (target) for the former subsample is $7.2 billion ($1.5 billion), and for the latter subsample it is $4.4 billion ($0.2 billion). In comparison, Boone et al. (2014) report that the average market capitalization for acquirers (targets) in cash acquisitions is $20.7 billion ($0.5 billion), and in stock acquisitions, it is $10.6 billion ($1.1 billion). Thus, compared to other acquisitions involving public acquirers and targets, the acquirers in my sample are small, whereas the targets are medium in size.

The mean (median) stock payment fraction is 58% (55%). In most cases, the fraction is preset. But I identified 10 cases in which the payment fractions were flexible, with the most flexible of these stating that between 45% and 100% (a range of 55%) should be for stock, and the mean (median) range was 21% (20%) among the 10 cases.

The election results reveal that an average of 51% of the shares were submitted for stock payment, 38% were submitted for cash payment, and 11% were deemed not to have made a valid submission. These preliminary statistics suggest that target shareholders prefer stock to cash payment. Furthermore, shareholders representing a nontrivial portion of shares seem either indifferent or inattentive to the choice between cash and stock.

Table 1 also presents statistics on a measure for the value wedge between the cash and stock values. VALUE_WEDGE is defined as the natural logarithm of the ratio of the estimated value of the stock payment to the value of the cash

TABLE 1
Descriptive Statistics

Table 1 provides descriptive statistics for a sample of acquisitions announced between 1985 and 2014 where the target shareholders have a choice of payment type. MKT_CAP_ACQUIRER and MKT_CAP_TARGET are the market capitalizations of the acquirer and target, respectively, in millions of dollars, on the acquisition announcement date. REL_MKT_CAP is the market capitalization of the target scaled by the sum of the market capitalizations of the acquirer and the target. FR_STOCK_PYMT is the fraction of the target shares that were paid for with stock. VALUE_WEDGE is the natural logarithm of the ratio of the estimated value of the stock payment to the value of the cash payment at the end of the election date, where the election date is the trading day immediately before the election deadline. FR_STOCK_ELECTION, FR_CASH_ELECTION, and FR_NO_ELECTION are the fractions of the target shares that were submitted for stock, cash, or neither stock nor cash payment, respectively. HOLDINGS_OD is shareholdings of the target by officers and directors (O&D). HOLDINGS_NON_OD_BLOCK is shareholdings of the target by non-O&D blockholders. NUMBER_NON_OD_BLOCK is the number of non-O&D blockholders in the target. The shareholdings by O&D and non-O&D blockholders are taken from the targets' proxy statements before the acquisitions.

	Acquisitions with Complete Election Results ($n=62$)		Acquisitions with Incomplete Election Results but Data to Estimate Values around Elections ($n=69$)	
	Mean	Median	Mean	Median
MKT_CAP_ACQUIRER	7,222	2,547	4,472	801
MKT_CAP_TARGET	1,546	424	219	115
REL_MKT_CAP	0.233	0.213	0.200	0.181
FR_STOCK_PYMT	0.559	0.500	0.603	0.600
VALUE_WEDGE	−0.012	0.000	−0.011	0.000
FR_STOCK_ELECTION	0.509	0.518		
FR_CASH_ELECTION	0.383	0.308		
FR_NO_ELECTION	0.107	0.095		
HOLDINGS_OD	0.140	0.095		
HOLDINGS_NON_OD_BLOCK	0.196	0.126		
NUMBER_NON_OD_BLOCK	2.2	2.0		

payment at the end of the election date.[6] The election date is defined as the trading day immediately before the election deadline.[7] The median value wedge is 0.00, meaning that the cash and stock payments are identical, and the mean value wedge is roughly −0.01, suggesting that the value of the cash payment slightly exceeds the value of the stock payment. Thus, the average value wedge cannot explain the average preference for stock.

Because of the design of many of the payment terms to keep the cash and stock values similar, there is substantial clustering of deals with a value wedge around 0. For example, 27.5% of the value wedges fall between −0.01 and +0.01 (or approximately 32% for the smaller sample with complete election results). But the deals with no such design allow for a significant range in the value wedge. In particular, the value wedge ranges from −0.50 to +0.46 (or −0.48 to +0.30 for the subsample with complete election results), meaning that the difference in the values scaled by the simple average of the values ranges from approximately 49% in favor of cash to approximately 45% in favor stock. Later analysis exploits this variation in the value wedge to examine the effect on election results and stock prices.

IV. Empirical Results

A. Analysis of Election Results

The previous section discussed simple statistics for the fractions of shares that were submitted for cash, stock, or neither. Graph A of Figure 4 displays the fractions of shares submitted for either stock or cash relative to the value wedge. Although the clustering of the value wedge around 0 is apparent, it is also evident that there is substantial variation in both the value wedge and the election results. Furthermore, there is a clear correlation between the value wedge and the election results; as the value wedge increases, the fraction of shares submitted for stock increases, and the fraction of shares submitted for cash decreases. It is also interesting to note the perceptible preference for stock when the value wedge is close to 0, consistent with the preference for stock in the overall sample.

Panel A of Table 2 provides simple statistics for the election results for cases in which VALUE_WEDGE is below −0.01, between −0.01 and +0.01, or above +0.01. These statistics corroborate the patterns in Graph A of

[6] In cases in which the exchange ratio is fixed, the estimated stock value payment is simply the product of the stated exchange ratio and the closing price of the acquirer on the election date. In other cases, for example, when the exchange ratio depends on an average price for the acquirer during a prespecified period or includes a collar, the estimation of the stock value payment is more tedious. Fortunately, there is generally no uncertainty regarding the effect of a collar at the time of election. Furthermore, the majority of the exchange-ratio estimates can be verified with ex post information regarding the election outcome. In the cases where part of the period for estimating the average acquirer price comes after the election date, I make the assumption that at the time the election, the prices after the election date are expected to be the same as the price on the election date. There might be factors that I have ignored in the value wedge, such as the time value of money for cash from the election date to the date the shareholders receive the cash, but I believe that these should account for a trivial fraction of the perceived value and be inconsequential for my results.

[7] The deadline is typically 5 PM Eastern Time, in which case the value wedge is estimated 1 hour before the deadline.

FIGURE 4
Elections of Payment by Target Shareholders

Graphs A and B of Figure 4 display the fraction of shares that were submitted for stock or cash payments (Graph A) and the fraction of shares that were deemed not to have been submitted for any particular payment (Graph B). FR_STOCK_ELECTION, FR_CASH_ELECTION, and FR_NO_ELECTION are the fractions of the target shares that were submitted for stock, cash, or neither stock nor cash payment, respectively. VALUE_WEDGE is the natural logarithm of the ratio of the estimated value of the stock payment to the value of the cash payment at the end of the election date, where the election date is the trading day immediately before the election deadline.

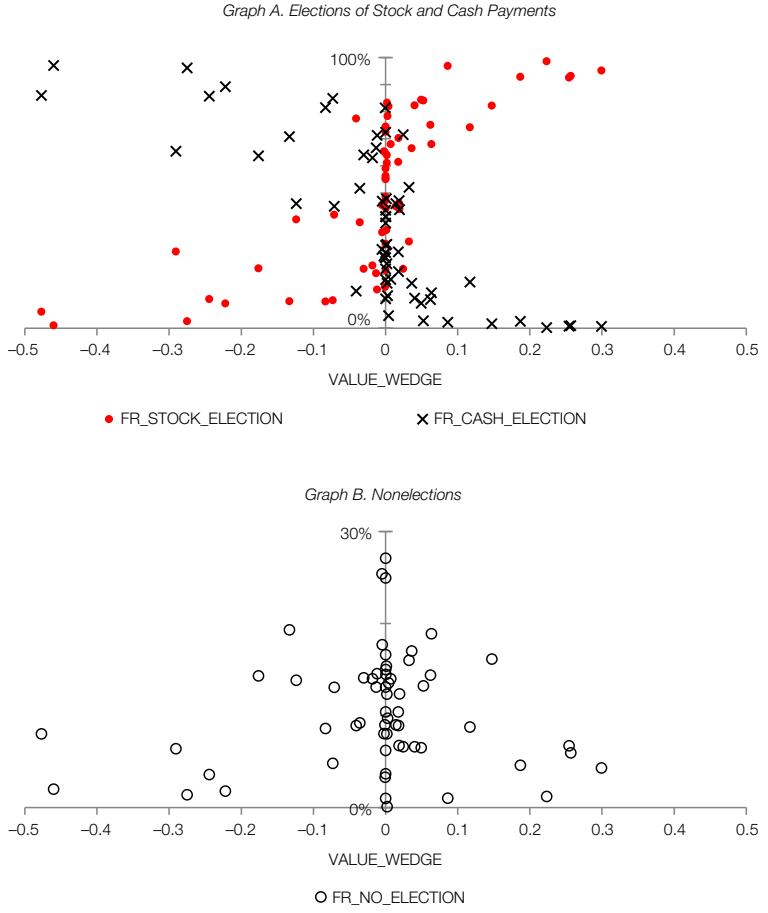


Figure 4: i) Stock is preferred when VALUE_WEDGE is close to 0, with an average fraction of shares submitted for stock and cash, respectively, of 55% and 32% when VALUE_WEDGE is between −0.01 and +0.01, and ii) the fraction of shares submitted for stock (cash) payment increases with VALUE_WEDGE, with an average fraction of shares submitted for stock and cash, respectively, of 22% and 69% when VALUE_WEDGE is below −0.01, and 72% and 19% when VALUE_WEDGE exceeds +0.01.

Panel C of Table 2 presents regressions of the fraction of shares submitted for stock, FR_STOCK_ELECTION, against VALUE_WEDGE. Because of the nonlinearity, or S-shape, of the relation that can be seen in Graph A of Figure 4

(resulting from the constraint that the fraction falls between 0 and 1), I applied a simple logit transformation of the independent variable. As expected, the coefficient of VALUE_WEDGE is positive and statistically different from 0 in all models, and based on the R^2 statistic, the variation in VALUE_WEDGE explains

TABLE 2
Payment Choices

Table 2 provides descriptive statistics for target shareholders' payment choices (Panel A) and regressions of those payment choices (Panels B–D). VALUE_WEDGE is the natural logarithm of the ratio of the estimated value of the stock payment to the value of the cash payment at the end of the election date, where the election date is the trading day immediately before the election deadline. ABS_VALUE_WEDGE is the absolute value of VALUE_WEDGE. FR_STOCK_ELECTION, FR_CASH_ELECTION, and FR_NO_ELECTION are the fractions of the target shares that were submitted for stock, cash, or neither stock nor cash payment, respectively. FR_INFERIOR is the fraction of shares that were submitted for stock if VALUE_WEDGE is negative and the fraction of shares that were submitted for cash if VALUE_WEDGE is positive. SIMPLE is an indicator variable that equals 1 if the payment choices include a fixed cash value and a fixed stock exchange ratio, and 0 otherwise. LN_MKT_CAP_TARGET is the natural logarithm of the market capitalization of the target on the acquisition announcement date. INST_HOLDINGS is the fraction of institutional holdings in the target. The sample is restricted to acquisitions where the target shareholders have a choice of payment type and complete election results are available. Statistical significance is indicated in bold.

Panel A. Mean and Median Fractions of Stock, Cash, and No Elections by VALUE_WEDGE

	VALUE_WEDGE below −0.01 ($n=18$)		VALUE_WEDGE between −0.01 and +0.01 ($n=23$)		VALUE_WEDGE above +0.01 ($n=21$)	
	Mean	Median	Mean	Median	Mean	Median
FR_STOCK_ELECTION	0.215	0.173	0.550	0.563	0.717	0.751
FR_CASH_ELECTION	0.690	0.687	0.320	0.279	0.190	0.111
FR_NO_ELECTION	0.095	0.091	0.130	0.131	0.093	0.087

Panel B. Mean and Median Fractions of Stock, Cash, and No Elections if VALUE_WEDGE Is below −0.15 or above 0.05

	VALUE_WEDGE below −0.15 ($n=7$)		VALUE_WEDGE above +0.05 ($n=11$)		VALUE_WEDGE below −0.15 or above +0.05 ($n=18$)	
	Mean	Median	Mean	Median	Mean	Median
FR_STOCK_ELECTION	0.114	0.091	0.866	0.925		
FR_CASH_ELECTION	0.833	0.860	0.047	0.021		
FR_INFERIOR	0.114	0.091	0.047	0.021	**0.073**	0.026
FR_NO_ELECTION	0.054	0.036	0.087	0.067	**0.074**	0.062

Panel C. Regressions of ln[FR_STOCK_ELECTION/(1 − FR_STOCK_ELECTION)]

	Model 1		Model 2		Model 3	
	Coefficient	*p*-Value	Coefficient	*p*-Value	Coefficient	*p*-Value
Intercept	0.067	0.223	−0.077	0.313	−1.219	0.010
VALUE_WEDGE	4.288	0.000	4.421	0.000	4.443	0.000
SIMPLE			0.275	0.011	0.347	0.002
LN_MKT_CAP_TARGET					0.097	0.016
INST_HOLDINGS					−0.353	0.203
Adj. R^2	0.657		0.683		0.711	
No. of obs.	62		62		61	

Panel D. Regressions of ln[FR_CASH_ELECTION/(1 − FR_CASH_ELECTION)]

	Model 1		Model 2		Model 3	
	Coefficient	*p*-Value	Coefficient	*p*-Value	Coefficient	*p*-Value
Intercept	−0.420	0.000	−0.226	0.012	0.832	0.128
VALUE_WEDGE	−5.042	0.000	−5.221	0.000	−5.237	0.000
SIMPLE			−0.369	0.003	−0.438	0.001
LN_MKT_CAP_TARGET					−0.089	0.059
INST_HOLDINGS					0.297	0.362
Adj. R^2	0.654		0.696		0.709	
No. of obs.	62		62		61	

(continued on next page)

TABLE 2 (continued)
Payment Choices

Panel E. Regressions of FR_NO_ELECTION

	Model 1		Model 2		Model 3	
	Coefficient	*p*-Value	Coefficient	*p*-Value	Coefficient	*p*-Value
Intercept	0.125	0.000	0.136	0.000	0.322	0.000
ABS_VALUE_WEDGE	−0.229	0.002	−0.170	0.029	−0.141	0.057
SIMPLE			−0.029	0.091	−0.046	0.010
LN_MKT_CAP_TARGET					−0.014	0.018
INST_HOLDINGS					−0.001	0.983
Adj. R^2	0.141		0.168		0.275	
No. of obs.	62		62		61	

approximately 66% of the variation in the fraction of shares submitted for stock payment. Panel D of Table 2 presents analogous regressions of the fraction of shares submitted for cash, FR_CASH_ELECTION, against VALUE_WEDGE. As expected, the coefficient of VALUE_WEDGE is negative and statistically different from 0 in all models, and the variation in VALUE_WEDGE explains approximately 66% of the variation in the fraction of shares submitted for cash payment.

Next, I analyze the variation in the fraction of shares that were deemed not to have made a valid election of either stock or cash payment. Graph B of Figure 4 displays the nonelecting fraction relative to the value wedge. There is a notable pattern that the fraction peaks at a value wedge of 0 and declines as the value wedge either decreases or increases from 0. Indeed, Panel A of Table 2 reports that the average fraction of nonelecting shares is 9.5%, 13.0%, and 9.0%, respectively, when VALUE_WEDGE is below −0.01, between −0.01 and +0.01, and above +0.01. I also run a regression of the nonelecting fraction, FR_NON_ELECTION, against the absolute value wedge, ABS_VALUE_WEDGE. The results, which are presented in Panel E, suggest that the coefficient of ABS_VALUE_WEDGE is negative and statistically significant from 0 at the 1% level, confirming that the peak in the fraction of nonelecting shares decreases as the value wedge deviates from 0.[8]

Shareholders presumably fail to submit a valid election either because they are inattentive or indifferent to the payment choice.[9] It is reasonable to assume that whereas the tendency for shareholders to be inattentive is independent of the value wedge, shareholders' indifference peaks when the value wedge is close to 0 and diminishes when the absolute value wedge increases. The peak in the fraction of nonelecting shares at a value wedge of 0 is consistent with this reasoning. When the absolute value wedge is sufficiently large, the nonelections due to indifference

[8] As noted earlier, the acquiring firms sought 100% of the shares of the target firms in all transactions in the sample. Thus, the nonelections should not be attributable to toeholds held by the acquiring firms. Nevertheless, I also read news announcements and the Synopsis and History File Event in SDC for observations for which nonelections were significant to rule out toeholds as an explanatory factor.

[9] Inertia, which is related to indifference, might also play a role. That is, investors might prefer the path of least resistance, which often implies taking no action (although it could also imply being inattentive). In a related study, Baker, Coval, and Stein (2007) argue that investor inertia makes stock mergers preferred to cash mergers financed with stock issues because the former allow the acquiring firm to retain target shareholders prone to inertia.

should be almost entirely diminished, enabling us to disentangle the fraction of nonelecting shares that is due to inattention.

However, tax effects could complicate shareholders' preferences. Several studies, including those by Erickson (1998) and Ayers, Lefanowicz, and Robinson (2003), (2004), examine the role of the taxation of target shareholders.[10] When shareholders receive cash, they face an immediate tax liability, which depends on i) the difference between the cash price and how much they paid for the shares and ii) the capital gains tax (for holdings more than a year) or the income tax rate (for holdings less than a year). To establish an upper limit for this tax liability, I assume that some shareholders bought the shares for the lowest price during the previous year and paid the maximum income tax rate on the capital gain (which ranges from 37.9% to 44.6% for the sample) and that other shareholders bought the shares for close to \$0 (because they invested at the inception of the company) and paid the maximum tax rate on capital gains (which ranges from 15% to 29.2% for the sample). The maximum tax liability is simply the larger of these two assumed tax-liability scenarios. I find that the maximum tax liability could theoretically explain a preference for cash over stock in all cases in which the value wedge is between −0.15 and 0, but it cannot explain the preference for cash in any of the cases in which the value wedge is below −0.15.[11] Furthermore, this means that some shareholders are rationally indifferent between cash and stock in cases in which the value wedge is between −0.15 and 0.

My estimation of the maximum tax liability suggests that all shares should be submitted for cash in those cases in which the value wedge is less than −0.15. Furthermore, if the value wedge is nontrivially above 0 (I use a cutoff of +0.05 for the purpose of my analysis), all shares should be submitted for stock. Panel B of Table 2 shows the election results for the cases in which the value wedge is below −0.15 or above +0.05. Among the seven cases in which the value wedge is below −0.15, an average of 11.4% of the shares were submitted for stock, and among the 11 cases in which the value wedge exceeds +0.05, an average of 4.7% of the shares were submitted for cash. Combined, the elections of the inferior payment types across the 18 cases with a value wedge below −0.15 or above +0.05 represent a weighted average of 7.3% of the shares. These results complement irrational investor behavior that has been documented in other settings (e.g., Poteshman and Serbin (2003), Coval and Shumway (2005), and Holderness and

[10]Erickson (1998) predicts that the probability that an acquisition is financed with cash is negatively related to the capital gains of target shareholders. However, he finds no relation between deal structure and target shareholder gains, and he estimates capital gain tax liabilities to be economically insignificant. Conversely, Ayers et al. (2003) report that higher tax rates on capital gains for individual investors inflate the premium paid in cash acquisitions. Moreover, Ayers et al. (2004) find that the probability of cash acquisitions decreases with the tax rate on capital gains for individual investors, especially for low levels of institutional ownership. But even Ayers et al. (2004) fail to find a significant relation between capital gains for target shareholders and deal structure.

[11]The cases closest to the cutoff of −0.15 serve as illustrations. There is one case with a value wedge of −0.12 and another with a value wedge of −0.13, both of which have maximum tax liabilities in excess of 17%. Thus, the tax liability might explain the preference for cash in both of these cases. Conversely, there is a case with a value wedge of −0.18 and a maximum tax liability of 16%, and any preference for cash in this case cannot be explained solely by the tax liability. Incidentally, there are no cases with a value wedge between −0.14 and −0.17, so I could have stated the cutoff to be any value in this range.

Pontiff (2016)). The seemingly irrational elections can be viewed as shareholders being inattentive to at least part of the relevant information (i.e., they are partially inattentive). As such, the average of 7.3% of the shares is an estimate of the fraction of shares held by partially inattentive shareholders. A caveat is that this estimate is biased downward because it does not consider elections by partially inattentive shareholders that turned out to be optimal by luck.

Panel B of Table 2 further shows that the average fraction of nonelections is 5.4% when the value wedge is below −0.15 and 8.7% when it is above +0.05, yielding a weighted-average fraction of nonelections across the two categories of 7.4%. The earlier discussion suggests that when the value wedge is below −0.15 or above +0.05, the fraction of shareholders who are truly indifferent between cash and stock payment is minimal. If so, the bulk of the 7.4% can be attributed to inattention. On this basis, I argue that shareholders owning a combined 7.4% are inattentive to the election between cash and stock. In fact, these shareholders seem to be so inattentive that they do not even make a random election, which would at least give them a chance for the better outcome. Combining the 7.3% partially inattentive shareholders and the 7.4% completely inattentive shareholders yields an estimate for the fraction of shares held by completely or partially inattentive shareholders of 14.7%.

Next, I examine the effect of complexity on the payment choice. Based on the notion that investors' ability to stay attentive and process relevant information is challenged when confronted with complexity or information overload (Hirshleifer and Teoh (2003), Agnew and Szykman (2005)), my primary conjecture is that complexity of the payment choice inflates the fraction of nonelections. I also put forth a secondary conjecture that complexity induces a relative preference for cash to stock because the cash option is generally easier to value and might be viewed as safer, much like shareholders flock to stocks with high cash dividends in the midst of economic turmoil. Such an aversion to stock payment when it is harder to value is consistent with theories of ambiguity aversion (Epstein and Schneider (2008), Ju and Miao (2012)).

I deem payment terms involving a fixed cash value and a fixed exchange ratio to be simple and all other payment terms to be complex. Then I introduce an indicator variable, SIMPLE, for whether the payment terms are deemed to be simple as an independent variable in the payment-choice regressions. Consistent with my primary conjecture, Panel E of Table 2 shows that the coefficient of SIMPLE is negative in the regressions of the fraction of nonelections. The p-value for the coefficient is 0.091 in model 2 and 0.010 in model 3 (which also controls for firm size), suggesting that the coefficient is statistically different from 0 at the 10% level or better. The magnitude of the coefficient of −0.029 (model 2) or −0.046 (model 3) suggests that complex payment terms induce an economically significant increase in nonelections of approximately 3%–4%.

Consistent with my secondary conjecture, Panel C of Table 2 shows that the coefficient of SIMPLE is positive in the regressions of the fraction of stock elections, and Panel D of Table 2 shows that it is negative in the regressions of the fraction of cash elections. The p-values are 0.011 or lower. Thus, investors

exhibit a statistically significant preference for cash when the payment terms are complex.[12]

The last of the regression models in each of Panels C–E of Table 2 also include LN_MKT_CAP_TARGET, the natural logarithm of the market capitalization of the target firms, and INST_HOLDINGS, the fraction of shares held by institutional investors based on 13-F filings with the SEC. The market capitalization variable is included because small firms might attract less attentive shareholders. Indeed, small firms seem to be associated with a larger fraction of nonelections, and as noted earlier, the inclusion of this variable strengthens the statistical significance of the simple terms indicator variable.

I included institutional holdings because institutions might be more informed and, therefore, exhibit more attention or a certain payment preference relative to other shareholders. However, the coefficients of INST_HOLDINGS are all statistically insignificant at the 0.10 level.[13] I also partitioned institutional holdings into bank trusts, insurance companies, independent investment advisors, corporate pension funds, public pension funds, and university and foundation endowments and included these subcategories as separate independent variables (not tabulated). But again, none of the coefficients is statistically significant at the 0.10 level. Thus, controlling for other factors, including market capitalization, there is no statistically significant evidence that institutional investors behave differently in this context.

B. Analysis of Valuations around Election Dates

The election results suggest that there are a significant number of inattentive shareholders who leave money on the table for more attentive shareholders. This wealth transfer largely depends on the value wedge, which is observable on the election day. In this section, I assess the impact of the wealth transfer on stock prices around the election day.

I estimate the weighted deal value per share on the election day and the day thereafter as the weighted average of the cash and stock values, where the weights are the fractions of shares that receive cash and stock, respectively. This represents what the average target shareholder receives in the deal. Then I form a ratio of the stock price of the target to the weighted deal value on each of the 2 days. In the absence of both a wealth transfer and uncertainty about deal completion, the ratio should equal 1 on both the election day and the postelection day. But if there is an anticipated wealth transfer, attentive shareholders might bid up the price beyond the weighted deal value on the election day. Because the bid-up should increase with the value wedge, I conjecture that the ratio on the election day increases with the value wedge.

On the postelection day, only shares that have not been submitted for election are trading. These shares generally receive the less popular payment type, which

[12] I also tried to interact the simple terms indicator variable with the value wedge to test whether investors are less responsive to the value wedge when the payment terms are complex. However, the interactive effects are statistically insignificant at the 10% level.

[13] Incidentally, the correlation between LN_MKT_CAP_TARGET and INST_HOLDINGS is 0.65, and if I exclude LN_MKT_CAP_TARGET as an explanatory variable, I find that INST_HOLDINGS is negatively related to the fraction of shares that are not submitted for election (p-value of 0.04).

has a value similar to or lower than the weighted deal value, depending on the value wedge. Thus, the ratio of the weighted deal value to the stock price should decrease as long as the value wedge differs from 0. Indeed, I conjecture that the price ratio declines from the election day to the postelection day and that the decline intensifies with the value wedge.

Figures 5 and 6 depict the price ratios on the election day and the postelection day, respectively, for different values of the value wedge. Panels A and B of Table 3 provide corresponding statistics. On average, the price ratio on the election day, PRICE_RATIO, is 0.99. The discount of 1% from 1 suggests some embedded uncertainty about the completion of some of the acquisitions. But Figure 5 shows

FIGURE 5
Price Ratios on Election Day

Graphs A and B of Figure 5 display PRICE_RATIO, defined as the ratio of the stock price of the target to the deal value on the day of the election deadline. The deal value is calculated as the weighted average of the stock and cash payments, where the weights are the realized fractions of target shares that receive stock and cash payments, respectively. VALUE_WEDGE is the natural logarithm of the ratio of the estimated value of the stock payment to the value of the cash payment at the end of the election date, where the election date is the trading day immediately before the election deadline. Graph A shows all the price ratios, while Graph B shows only price ratios between 0.98 and 1.02.

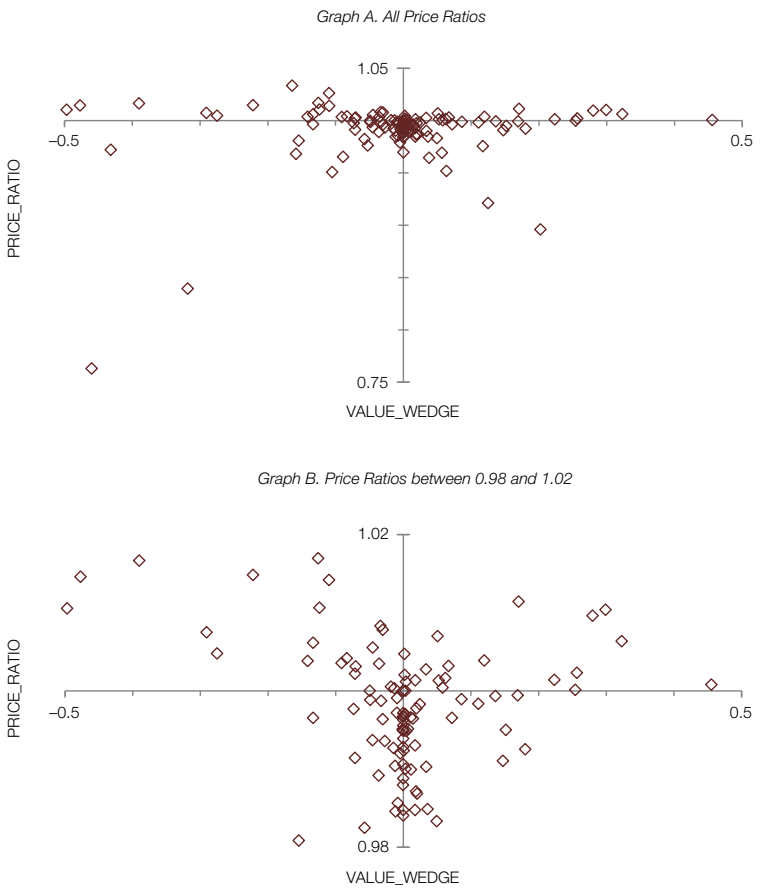
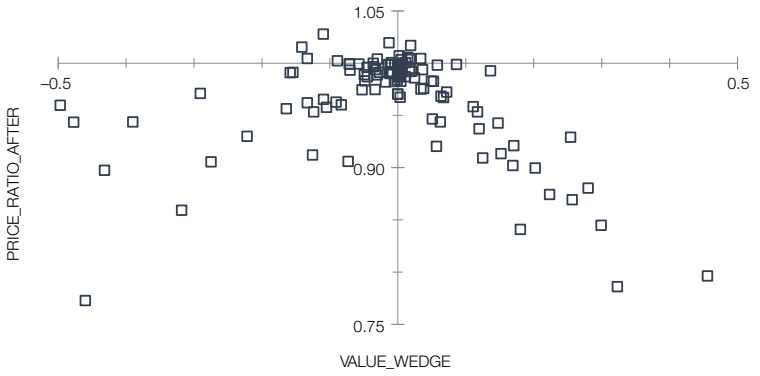


FIGURE 6
Price Ratios after Election

Figure 6 displays PRICE_RATIO_AFTER, defined as the ratio of the stock price of the target to the deal value on the day after the election deadline. The deal value is calculated as the weighted average of the stock and cash payments, where the weights are the realized fractions of target shares that receive stock and cash payments, respectively. VALUE_WEDGE is the natural logarithm of the ratio of the estimated value of the stock payment to the value of the cash payment at the end of the election date, where the election date is the trading day immediately before the election deadline.



that there are some outliers on the lower end, such that it is hard to tell from the average the extent to which the price ratio is bid above 1.[14]

Further analysis shows that PRICE_RATIO exceeds 1 in 37% of the cases. Panel A of Table 3 shows that the fraction above 1 increases from 12% of the cases where VALUE_WEDGE is between −1% and 1% to 38% of the cases where VALUE_WEDGE exceeds 1% and to 53% of the cases where VALUE_WEDGE is below −1%. Furthermore, Panel B of Table 3 shows that the fraction above 1 is 37% of the cases where ABS_VALUE_WEDGE is between 1% and 10% and 58% of the cases where ABS_VALUE_WEDGE exceeds 10%. These statistics are consistent with my conjecture, and I interpret them as evidence that shareholders' inattention gives rise to an expected wealth transfer to attentive shareholders that affects stock prices.

On the postelection day, the average price ratio drops by 2% to 0.97, and only 13% of the price ratios remain above 1. The magnitude of the drop increases with the value wedge; when the value wedge is 0, there is no decline, and when the absolute value wedge is in the upper tertile (roughly above 0.09), the decline is approximately 6%. These results suggest that the shares that have not been submitted for election are worth less, especially if the value wedge is large, such that the adverse consequence of not having made an election is large. I further interpret the results to mean that the average cost of inattention to payment

[14]The most extreme price ratio on the election day is 0.76. Further examination shows that the price for the target dropped significantly during the election day and that the price ratio on the morning of the election day was actually close to 1.00. Given the large absolute value wedge for this observation, I expected a large price drop immediately after the election deadline (which, according to my sources, was after the close on the election day), but not before, unless logistical issues made it difficult to submit elections in the hours before the deadline.

TABLE 3

Price Ratios on and after the Election Day

Panels A and B of Table 3 provide descriptive statistics for price ratios on the election day and the day immediately thereafter. PRICE_RATIO is the ratio of the deal value per share to the stock price per share on the election date. PRICE_RATIO_AFTER is the ratio of the deal value per share to the stock price per share on the day after the election date. The deal value is calculated as the weighted average of the stock and cash payments, where the weights are the realized fractions of target shares that receive stock and cash payments, respectively. PRICE_RATIO_CHANGE is PRICE_RATIO_AFTER minus PRICE_RATIO. VALUE_WEDGE is the natural logarithm of the ratio of the estimated value of the stock payment to the value of the cash payment at the end of the election date, where the election date is the trading day immediately before the election deadline. ABS_VALUE_WEDGE is the absolute value of VALUE_WEDGE. Panel C provides regressions of PREMIUM, DISCOUNT_AFTER, and PRICE_RATIO_CHANGE. PREMIUM is the maximum of 0 and PRICE_RATIO less 1. DISCOUNT_AFTER is the minimum of 0 and PRICE_RATIO_AFTER less 1. The sample is restricted to acquisitions where the target shareholders have a choice of payment type and data are available to estimate the price ratios on the election day and the day afterward. In Panel B, the *p*-value for the difference between 36.7% and 12.1% is 0.02, and the *p*-value for the difference between 57.9% and 36.7% (12.1%) is 0.06 (< 0.01).

Panel A. Simple Statistics on Price Ratios by VALUE_WEDGE

	VALUE_WEDGE below −0.01 (n=45)			VALUE_WEDGE between −0.01 and +0.01 (n=33)			VALUE_WEDGE above +0.01 (n=42)		
	Mean	Median	>1	Mean	Median	>1	Mean	Median	>1
PRICE_RATIO	0.990	1.000	53.3%	0.993	0.995	12.1%	0.991	0.998	38.1%
PRICE_RATIO_AFTER	0.969	0.987	13.3%	0.992	0.995	12.1%	0.947	0.968	14.3%
PRICE_RATIO_CHANGE	−0.021	−0.007		−0.001	0.000		−0.044	−0.017	

Panel B. Simple Statistics on Price Ratios by ABS_VALUE_WEDGE

	ABS_VALUE_WEDGE below 0.01 (n=33)			ABS_VALUE_WEDGE between 0.01 and 0.10 (n=49)			ABS_VALUE_WEDGE above 0.10 (n=38)		
	Mean	Median	>1	Mean	Median	>1	Mean	Median	>1
PRICE_RATIO	0.993	0.995	12.1%	0.993	0.997	36.7%	0.986	1.002	57.9%
PRICE_RATIO_AFTER	0.992	0.995	12.1%	0.986	0.992	18.4%	0.923	0.934	7.9%
PRICE_RATIO_CHANGE	−0.001	0.000		−0.008	−0.002		−0.063	−0.062	

Panel C. Regressions of PREMIUM, DISCOUNT_AFTER, and PRICE_RATIO_CHANGE

	PREMIUM		DISCOUNT_AFTER		PRICE_RATIO_CHANGE	
	Coefficient	*p*-Value	Coefficient	*p*-Value	Coefficient	*p*-Value
Intercept	0.001	0.143	−0.006	0.092	−0.001	0.800
ABS_VALUE_WEDGE	0.018	0.004	−0.305	0.000	−0.251	0.000
Adj. R^2	0.144		0.559		0.386	
No. of obs.	120		120		120	

Panel D. Regressions of PREMIUM, DISCOUNT_AFTER, and PRICE_RATIO_CHANGE Excluding Observations with PRICE_RATIO of 95% or Less

	PREMIUM		DISCOUNT_AFTER		PRICE_RATIO_CHANGE	
	Coefficient	*p*-Value	Coefficient	*p*-Value	Coefficient	*p*-Value
Intercept	0.001	0.193	−0.007	0.051	0.000	0.907
ABS_VALUE_WEDGE	0.022	0.000	−0.272	0.000	−0.308	0.000
Adj. R^2	0.200		0.497		0.524	
No. of obs.	114		114		114	

elections is 2%, ranging from no cost when there is no value wedge to a 6% average cost when the absolute value wedge is in the upper tertile.

Next, I examine the relation between the bid-up portion of the price (i.e., the price premium) on the election day and the value wedge using a regression framework. I calculate the price premium on the election day, PREMIUM, as the maximum of 0 and PRICE_RATIO less 1 (e.g., a price ratio of 1.02 yields a premium of 2%). Then I regress PREMIUM against ABS_VALUE_WEDGE. Panel C of Table 3 presents the regression results using all observations, whereas

Panel D presents results when excluding six observations that had a price ratio on the election day of 95% or less. The intercept is close to 0, suggesting that there is no price premium when the value wedge is 0. The coefficient of the absolute value wedge is 0.018 in Panel C and 0.022 in Panel D (p-values < 0.01), suggesting that the price premium increases with ABS_VALUE_WEDGE, consistent with my earlier conjecture. For example, if ABS_VALUE_WEDGE is 10%, the regression models predict the price premium to be approximately 0.2%.

I run an analogous regression on the postelection day using the price discount, DISCOUNT_AFTER, which is calculated as the minimum of 0 and the price ratio on the postelection day (PRICE_RATIO_AFTER) less 1 (e.g., a price ratio of 0.98 yields −2%). The results in Panels C and D of Table 3 show that the intercept is −0.006 (p-value of 0.092) and −0.007 (p-value of 0.051), respectively, suggesting that there is a slight discount, if any, when the value wedge is 0. The coefficient of ABS_VALUE_WEDGE is between −0.305 and −0.272 (p-values <0.01), suggesting that a greater value wedge is associated with a more pronounced discount.

In my final regression, I regress the change in the price ratio from the election day to the postelection day, PRICE_RATIO_CHANGE, against ABS_VALUE_WEDGE. The intercept is close to 0, and the coefficient of ABS_VALUE_WEDGE is −0.251 in Panel C and −0.308 in Panel D (p-values $<$ 0.01). This suggests that there is no perceptible change in the price ratio when the value wedge is 0, but as the absolute value wedge increases, the fall in the price ratio becomes pronounced. For example, if the value wedge is 10%, the price premium is predicted to fall by 2.5%–3.0%. These results corroborate my earlier estimates of the cost of inattention.

V. Summary and Conclusion

In this study, I examine target shareholders' election between cash and stock as the form of acquisition payment. The main purpose is to gauge the extent of inattention in such elections and to estimate the cost of inattention for shareholders and the effect of inattention on stock prices.

I find that 51% of the target shares are submitted for stock and 38% are submitted for cash. The preference for stock prevails when controlling for differences in values between the cash and stock payments. More importantly for the purpose of this study, no election is deemed for 11% of the shares, and these shares receive the less popular (effectively, the less valuable) form of payment. Even when the discrepancy in value between the cash and stock payments is so substantial that it cannot possibly be explained by differences in taxation, an average of 7.4% shares are not submitted for election, and an average of 7.3% are submitted for the inferior form of payment. On this basis, I argue that shareholders owning a combined 7.4% of shares are completely inattentive to the election, and shareholders representing another 7.3% are partially inattentive to the set of relevant information.

I further find that the stock price drops significantly from the election day to the postelection day. This shows that shareholders who fail to make an election (and whose shares are the only ones still trading on the postelection day) incur a

nontrivial cost. I estimate the average cost of inattention to be 2%, and it increases to 6% for the tertile of transactions with the greatest difference between the cash and stock values.

Finally, I report evidence that the stock price is bid up beyond the deal value on the election day, especially when there is a great discrepancy in value between the cash and stock payments. This suggests that attentive shareholders anticipate a wealth transfer from inattentive shareholders, and this gets incorporated into the stock price.

This study complements that of Holderness and Pontiff (2016) in estimating the extent of inattention and its cost for inattentive shareholders. Of course, the caveat applies that my estimates, like those of Holderness and Pontiff, pertain to shareholders in a particular setting. On most days, I would expect shareholders to be even less attentive to their individual shares (because there is no important news or decision to be made), but the cost of inattention should also be more modest.

More interestingly, whereas numerous studies have theorized and documented empirical evidence that inattention affects stock prices via over- and underreaction to news, I provide novel and unique evidence that inattention affects stock prices via the anticipation of a wealth transfer from inattentive to attentive shareholders. In my setting, the price effect is evident immediately before the election, and more research needs to be conducted to examine whether a similar effect is more permanent. That is, perhaps shares with a substantial ownership of inattentive shareholders are consistently priced higher when future situations might arise in which attentive shareholders fleece inattentive shareholders.

References

Agnew, J. R.; P. Balduzzi; and A. Sundén. "Portfolio Choice and Trading in a Large 401(k) Plan." *American Economic Review*, 93 (2003), 193–215.

Agnew, J. R., and L. R. Szykman. "Asset Allocation and Information Overload: The Influence of Information Display, Asset Choice, and Investor Experience." *Journal of Behavioral Finance*, 6 (2005), 57–70.

Andrei, A., and M. Hasler. "Investor Attention and Stock Market Volatility." *Review of Financial Studies*, 28 (2015), 33–72.

Ayers, B. C.; C. E. Lefanowicz; and J. R. Robinson. "Shareholder Taxes in Acquisition Premiums: The Effect of Capital Gains Taxation." *Journal of Finance*, 58 (2003), 2785–2803.

Ayers, B. C.; C. E. Lefanowicz; and J. R. Robinson. "The Effect of Shareholder-Level Capital Gains Taxes on Acquisition Structure." *Accounting Review*, 79 (2004), 859–887.

Babenko, I., and R. Sen. "Money Left on the Table: An Analysis of Participation in Employee Stock Purchase Plans." *Review of Financial Studies*, 27 (2014), 3658–3698.

Baker, M.; J. Coval; and J. C. Stein. "Corporate Financing Decisions When Investors Take the Path of Least Resistance." *Journal of Financial Economics*, 84 (2007), 266–298.

Barber, B. M., and T. Odean. "Trading Is Hazardous to Your Wealth: The Common Stock Investment Performance of Individual Investors." *Journal of Finance*, 55 (2000), 773–806.

Barber, B. M., and T. Odean. "All That Glitters: The Effect of Attention and News on the Buying Behavior of Individual and Institutional Investors." *Review of Financial Studies*, 21 (2008), 785–818.

Boone, A. L.; E. Lie; and Y. Liu. "The Trends and Determinants of the Method of Payment in M&As." *Journal of Corporate Finance*, 27 (2014), 296–304.

Chetty, R.; A. Looney; and K. Kroft. "Salience and Taxation: Theory and Evidence." *American Economic Review*, 99 (2009), 1145–1177.

Cohen, L., and A. Frazzini. "Economic Links and Predictable Returns." *Journal of Finance*, 63 (2008), 1977–2011.

Coval, J. D., and T. Shumway. "Do Behavioral Biases Affect Prices?" *Journal of Finance*, 60 (2005), 1–34.
Dahlquist, M., and J. V. Martinez. "Investor Inattention: A Hidden Cost of Choice in Pension Plans?" *European Financial Management*, 21 (2015), 1–19.
DeHaan, E.; T. J. Shevlin; and J. R. Thornock. "Market (In)Attention and the Strategic Scheduling and Timing of Earnings Announcement." *Journal of Accounting and Economics*, 60 (2015), 36–55.
DellaVigna, S. "Structural Behavioral Economics." Working Paper, University of California at Berkeley and National Bureau of Economic Research (2017).
DellaVigna, S., and J. M. Pollet. "Demographics and Industry Returns." *American Economic Review*, 97 (2007), 1667–1702.
DellaVigna, S., and J. M. Pollet. "Investor Inattention and Friday Earnings Announcements." *Journal of Finance*, 64 (2009), 709–749.
Epstein, L. G., and M. Schneider. "Ambiguity, Information Quality, and Asset Pricing." *Journal of Finance*, 63 (2008), 197–228.
Erickson, M. "The Effect of Taxes on the Structure of Corporate Acquisitions." *Journal of Accounting Research*, 36 (1998), 279–298.
French, K. R. "The Cost of Active Investing." *Journal of Finance*, 63 (2008), 1537–1573.
Gabaix, X., and D. Laibson. "Shrouded Attributes, Consumer Myopia, and Information Suppression in Competitive Markets." *Quarterly Journal of Economics*, 121 (2006), 505–540.
Gilbert, T.; S. Kogan; L. Lochstoer; and A. Ozyildirim. "Investor Inattention and the Market Impact of Summary Statistics." *Management Science*, 58 (2012), 336–350.
Hirshleifer, D.; S. S. Lim; and S. H. Teoh. "Driven to Distraction: Extraneous Events and Underreaction to Earnings News." *Journal of Finance*, 64 (2009), 2289–2325.
Hirshleifer, D.; S. S. Lim; and S. H. Teoh. "Limited Investor Attention and Stock Market Misreactions to Accounting Information." *Review of Asset Pricing Studies*, 1 (2011), 35–73.
Hirshleifer, D., and S. H. Teoh. "Limited Attention, Information Disclosure, and Financial Reporting." *Journal of Accounting and Economics*, 36 (2003), 337–386.
Holderness, C. G., and J. Pontiff. "Shareholder Nonparticipation in Valuable Rights Offerings: New Findings for an Old Puzzle." *Journal of Financial Economics*, 120 (2016), 252–268.
Hossain, T., and J. Morgan. "…Plus Shipping and Handling: Revenue (Non) Equivalence in Field Experiments on eBay." *Advances in Economic Analysis and Policy*, 6 (2006), 1–27.
Huberman, G., and T. Regev. "Contagious Speculation and a Cure for Cancer: A Nonevent That Made Stock Prices Soar." *Journal of Finance*, 56 (2001), 387–396.
Ju, N., and J. Miao. "Ambiguity, Learning, and Asset Returns." *Econometrica*, 80 (2012), 559–591.
Lacetera, N.; D. G. Pope; and J. R. Sydnor. "Heuristic Thinking and Limited Attention in the Car Market." *American Economic Review*, 102 (2012), 2206–2236.
Madrian, B., and D. F. Shea. "The Power of Suggestion: Inertia in 401(k) Participation and Savings Behavior." *Quarterly Journal of Economics*, 116 (2001), 1149–1525.
Malmendier, U., and Y. H. Lee. "The Bidder's Curse." *American Economic Review*, 101 (2011), 749–787.
Odean, T. "Do Investors Trade Too Much?" *American Economic Review*, 89 (1999), 1278–1298.
Peng, L., and W. Xiong. "Investor Attention, Overconfidence and Category Learning." *Journal of Financial Economics*, 80 (2006), 563–602.
Poteshman, A. M., and V. Serbin. "Clearly Irrational Financial Market Behavior: Evidence from the Early Exercise of Exchange Traded Options." *Journal of Finance*, 58 (2003), 37–70.
Stango, V., and J. Zinman. "Limited and Varying Consumer Attention: Evidence from Shocks to the Salience of Bank Overdraft Fees." *Review of Financial Studies*, 27 (2014), 990–1030.
Tetlock, P. C. "All the News That's Fit to Reprint: Do Investors React to Stale Information?" *Review of Financial Studies*, 24 (2011), 1481–1512.