

EPS-Sensitivity and Mergers*

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Abstract. Announcements of mergers very often discuss the impact of the deal on the acquirer's earnings per share (EPS), especially when the deal is done in stock and is EPS-accretive for the acquirer. In this paper, we document that the acquirer's EPS-sensitivity affects how deals are structured, the premium that is paid, and the types of deals that are done. We provide evidence that acquirer managers prefer to do avoid even minor EPS dilution when (a) shareholder approval is required for deals (b) institutional investor horizon is shorter, and (c) managers' compensation is tied to EPS. We find that EPS-sensitivity is especially pronounced in the post-2001 period, when market overvaluation of the 1990s had disappeared and accounting rule changes no longer favored stock-financed acquisitions.

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I. Introduction

Practitioners and market participants pay close attention to how stock-financed deals impact the acquirer's earnings per share (EPS). Merger announcements are regularly accompanied by discussions of whether the deal will be accretive or dilutive for the acquirer's EPS (i.e., whether the combined firm's EPS will be higher or lower than pre-merger acquirer's EPS), and if immediately dilutive, how quickly the deal would turn accretive. Investment bankers often conduct a combined EPS analysis when advising a deal, and such analyses are commonly included in merger-related proxy filings. Moreover, acquirer management frequently presents a favorable portrayal of the EPS impact of a deal to convince shareholders about the desirability of an acquisition.¹ A remarkable feature of these combined EPS forecasts is that potential deal synergies, which are more long-term and likely more uncertain in nature, are largely ignored. In contrast, finance theory does not imply any particular benefit of an EPS-accretive deal but rather focuses on deal value creation, which raises the concern that over-emphasis on EPS may suggest underweighting deal synergies, leading to distortions in the M&A market. Despite the importance of this issue, previous literature presents little systematic or large-sample evidence on whether and how EPS concerns affect M&A decisions.²

A merger's immediate impact on EPS is easy to estimate, unlike deal synergies, especially for a stock-financed deal in which a fixed number of shares in the combined firm is offered to each target share (the number is called the "exchange ratio"). Ignoring synergies, the combined EPS is higher than the stand-alone EPS of the acquirer when the exchange ratio is smaller than the ratio of the target's and acquirer's stand-alone EPS ($\frac{e_T}{e_B}$). We hypothesize that this calculation is widely used by acquirer shareholders, or by practitioners communicating to shareholders, to evaluate a merger's per-share impact on their wealth.³ The acquirer's stand-alone EPS could create a reference point for investors,

¹ A *Factiva* search reveals 309,505 results when the keywords "Merger" along with "EPS Accretion" and "EPS Dilution" are used. Phrases that frequently occur are: "Immediately accretive," "Slightly accretive," "No material impact on EPS," "Slightly dilutive in the first year but turn accretive in 3 years," "Minimizes dilution and builds shareholder value," or close variants of these.

² One exception is Bates et. al. (2019) which shows that EPS-bootstrapping is an important motivation for mergers.

³ Synergies are likely to be ignored by investors, because at deal announcement there may not be available synergy forecasts. Based on a *Factiva* search, Bernile and Bauguess (2011) and Dutodoir, Roosenboom, and Vasconcelos (2014) report that only about 20% of all deals are accompanied by a management forecast of synergies, and only

making the perceived losses from a dilutive deal much larger than the perceived gains from an accretive deal with the same degree of change in EPS (combined EPS minus acquirer's stand-alone EPS).⁴ One way to avoid dilution is to make an offer in cash or a combination of cash and stock.⁵ However, cash deals can trigger immediate tax payment by target shareholders, causing a value leakage of the target and acquirer combined. Therefore, one would expect cash payments are more likely to be used when doing these deals in stock would entail dilution.

In this paper, we build on these insights to examine whether and how EPS-sensitivity affects how acquirer management structures a merger deal structure, sets the premium offered, as well as the reasons underlying this sensitivity. We find that immediately around the potential dilution threshold, there is a discontinuous increase in the number and propensity of cash and mixed deals, suggesting dilution avoidance as a major consideration for the way these deals are structured. If a deal is wealth-creating and positive NPV for the acquirer, immediate earnings accretion should be irrelevant. The extent to which deals are influenced by accretion considerations sheds light on the extent of distortion that EPS focus creates in the market for corporate control. We further examine what considerations motivate managers to overweight EPS-accretion and find that seeking shareholder voting support plays a critical role. In addition, we find short-termism also amplifies the impact of immediate EPS changes on deal structure.

2% actually provide an NPV number. The discussion of timing of certain aspects of synergy gains is also typically quite imprecise. It is possible that synergy estimates are often vague or non-existent because managers can be sued for misleading synergy disclosure and may even have to disclose the basis of their synergy estimates in court (e.g. Hewlett-Packard's merger with Compaq).

⁴ Prospect Theory (Tversky and Kahneman (1979)) suggests that utility can be affected by the deviation from a reference point. The value function defined over the changes in value relative to a reference point is often "S" shaped, leading to "loss aversion", namely, losses are disliked more than equal-sized gains. As pointed out by Kahneman (1992), the status quo can be a natural reference point. In the context of M&A, while target shareholders could compare offer price with the stand-alone stock price to assess a deal's value impacts, acquirer shareholders are more likely to focus on valuation-relevant per-share metrics, among which EPS is the most common one. We argue that the status quo of EPS is likely to create a reference point for the acquirer shareholders, and the management tends to structure a deal to avoid any apparent losses relative to that.

⁵ If a cash deal is financed by debt, the total net earnings would be reduced by the incremental (after-tax) interest payment. In general, as long as the borrowing cost (or the opportunity cost of forgoing excess cash) is not too high, paying cash would still mitigate dilution to the earnings per share, since it avoids issuing new equity. We discuss these issues in more detail in Section 2.

We first calculate a “pseudo EPS impact” (henceforth P_CH_EPS) for all the cash deals and mixed deals (deals paid in a combination of stock and cash). This measure indicates what the change in EPS would have been if these deals had been done entirely in stock, assuming the total consideration in terms of the value of the acquirer’s stock (either immediately prior to the announcement or immediately after) would be the same. We first find that pseudo dilutive deals ($P_CH_EPS < 0$) are more likely to be paid in cash. This is true not only in the cross-section controlling for year and industry, but also in the time-series correlation. Figure 1 shows that the increasing trend of cash deals in recent years is highly correlated with the proportion of pseudo dilutive deals. The pattern suggests that especially since 2002, there is an increase in the frequency of deals done in cash, ostensibly to avoid dilution if done entirely in stock.

For more direct evidence, we examine the distribution of cash and mixed deals with respect to P_CH_EPS . If investors take the current EPS of the acquirer as a reference point, a slightly dilutive deal would be much less acceptable than a slightly accretive one. Thus, we expect that cash is more likely to be paid for the deals that would incur slight dilution under full stock payment. In other words, there should be a disproportionate cluster of cash and mixed deals with P_CH_EPS right below 0. Figure 2 confirms that there is a sharp discontinuity at 0: the number of deals done in cash is discontinuously higher for slightly negative values of P_CH_EPS as opposed to slightly positive values. We get very similar results for mixed deals, as evidenced in Figure 3. Figure 4 zooms in on a narrow band around the zero P_CH_EPS threshold and shows that the fraction of deals that involve cash and the percentage of cash in the total payment change discontinuously around the zero threshold. These results speak to the sensitivity of acquires to dilution: cash deals are preferred to avoid even minor dilution in stock deals. However, by affecting the structure of the deal, EPS considerations affect the capital structure of the resulting firm, potentially pushing it off its optimum in a way that takes years to correct (see evidence in Harford, Klasa, and Walcott (2009)).

Almost all merger deals are associated with a positive offer premium for target shareholders. Consequently, a deal that combines a positive premium and is at the same time EPS-accretive for acquirer shareholders is most likely to receive the approval of both groups of shareholders. In a stock

merger, a positive premium requires the exchange ratio to be higher than the ratio of target's and acquirer's stock price ($\frac{p_T}{p_B}$). Thus, if a high P/E acquirer is bidding for a low P/E target ($\frac{p_T}{e_T} < \frac{p_B}{e_B}$), an exchange ratio in the interval $(\frac{p_T}{p_B}, \frac{e_T}{e_B})$ would satisfy both "requirements" that the deal offers a positive premium to the target and is also accretive for the acquirer. This implies that in most pure stock deals, the P/E ratio of the acquirer will be higher than that of the target. On the other hand, if the acquirer's P/E is lower than the target's P/E ($\frac{p_T}{e_T} > \frac{p_B}{e_B}$), it is not possible for a pure stock swap to offer a positive premium and still be accretive for the acquirer. To avoid EPS dilution, the latter type of deal is more likely to be paid in cash or a combination of cash and stock.

These predictions are in line with the idea that overvalued acquirers tend to use stock as currency to buy target assets (Shleifer and Vishny (2003), Rhodes-Kropf, Robinson, and Viswanathan (2005), Dong et al. (2006), Ang and Chen (2006)). Although the hypotheses of "EPS-sensitivity" and "misvaluation" are not mutually exclusive, and acquirer management can appeal to "EPS accretion" to justify a deal paid in overvalued stock,⁶ we emphasize that our results cannot be fully attributed to the "misvaluation" story for two reasons. First, the "misvaluation" argument does not predict the distributions of cash and mixed deals to have a sharp discontinuity around 0 of P_CH_EPS . In other words, "misvaluation" argument focuses on relative valuations, or equivalently, the relative position between $\frac{p_T}{p_B}$ and $\frac{e_T}{e_B}$, while our "EPS-sensitivity" hypothesis emphasizes whether the pseudo exchange ratio⁷ exceeds $\frac{e_T}{e_B}$. Second, even after controlling for the relative position between $\frac{p_T}{p_B}$ and $\frac{e_T}{e_B}$, we continue to find strong evidence for "EPS-sensitivity." Specifically, in the subsample of stock deals with $\frac{p_T}{p_B} < \frac{e_T}{e_B}$, we find in Figure 5 that there is a cluster of deals with exchange ratio just to the left of $\frac{e_T}{e_B}$ (which renders these deals accretive) relative to just to the right (where they are dilutive). The unsmooth distribution in this subsample suggests one or several of the following possibilities: (1) the acquirer

⁶ Such justification can be used not only to convince the acquirer shareholders about the plausibility of the deal, but also to communicate with the target firm without discussing the overvaluation issue of acquirer stocks.

⁷ The pseudo exchange ratio for a cash or mixed deal reflects the hypothetical exchange ratio if the deal consideration had been fully paid in stock. It is the offer price per share scaled by the stock price of acquirer. The pseudo exchange ratio for a stock deal is the same as the exchange ratio.

management is able to bargain down the deal premium and achieve accretion when the initial bargaining outcome suggests an exchange ratio slightly above $\frac{e_T}{e_B}$; (2) some slightly dilutive stock deals have been substituted by cash or mixed deals; (3) some slightly dilutive stock deals (with positive NPV) have been forgone and/or some slightly accretive deals (with low deal value) have excessively gone through. Since all these possibilities suggest distortions, we do not focus on disentangling the specific reasons. However, we provide evidence that the slightly accretive stock deals involve a lower premium, a higher acquirer market reaction to announcement (three-day abnormal return), and a lower combined shareholder gain (abnormal returns of the acquirer and target from 42 trading days before announcement to deal completion) compared with the slightly dilutive deals.

Accounting rules have also been shown to be a significant determinant of the method of payment (stock vs. cash) and the EPS impact of a deal. Prior to 2001, the pooling method of accounting was allowed for stock deals but not for cash deals.⁸ All else equal, post-merger earnings were higher under pooling accounting since it did not require recognizing goodwill. It has been argued that stock was the favored form of payment in 1990s, as deals were structured to qualify for pooling (Lys and Vincent (1995); Aboody, Kasznik, and Williams (2000)). After the abolition of the EPS-friendly pooling method of accounting in 2001,⁹ the attractiveness of stock-financed deals declined (de Bodt, Cousin, and Roll (2017)) and the choice of accounting method was no longer a major factor for EPS impact or for the form of payment. Nonetheless, EPS still affected deal structure post-2001. In fact, we find that our results are stronger in the post-2001 period. In untabulated figures, we find the discontinuities in the pseudo change in EPS are mainly concentrated in the later period since 2001. Moreover, from Figure 1, we also observe a tighter correlation between the propensity of paying stock and pseudo EPS accretion after 2001. Our evidence suggests that EPS impact on deal structure has been

⁸ To qualify for pooling accounting, all the consideration must be paid in stock. Pooling accounting also requires some other conditions, such as the acquirer needs to purchase at least 90% of target stocks. Thus, not all the stock deals qualified for pooling accounting, while all the cash deals did not qualify for pooling.

⁹ Purchasing accounting is the only allowed accounting method since 2001. Goodwill amortization was also abolished in 2001. The recognized goodwill has been subjective to impairment tests since 2001 regardless of the form of payment.

significant especially when accounting rules have created a more level playing field between cash and stock deals in recent decades.

Next, we examine what drives the sensitivity of acquirer managers to EPS dilution. First, we examine whether obtaining shareholder approval is a reason why acquirer managers are concerned about the EPS impact. Shareholder approval is required if a deal involves share issuance in excess of 20% of outstanding shares (Li, Liu and Wu (2018)). Given this, we hypothesize that acquirers will be reluctant to register and issue more than 20% when the deal is dilutive, preferring cash or mixed deals. Consistently, in the spirit of Li, Liu, and Wu (2018), we find that among all deals, the percentage of cash in deal consideration increases discontinuously as the anticipated share issuance associated with a counterfactual stock deal crosses the 20% threshold, and that this effect is only present for deals that would be dilutive if done entirely in stock. We also observe that deal completion rates are higher for accretive deals, and there is a discontinuous increase in the completion rate when the deal becomes slightly accretive, and this effect is only present for deals that involve more than 20% stock issuance. “Deeply dilutive” deals are twice as likely to be withdrawn as other types of deals. These results strongly suggest that shareholder approval of deals is an important reason why EPS accretion matters for acquirers.

Second, we examine whether EPS-sensitivity is associated with ownership structure. Management estimates of deal synergies could be discounted by the market unless they are validated by analysts, which takes time after the announcement. Thus, at announcement, market participants may focus on the immediate impact on earnings per share, causing the stock price reaction to be sensitive to EPS effects. Institutional investors who are sensitive to the short-term price will therefore prefer deals that are accretive. Thus, we hypothesize that when the firm’s institutional investors trade more frequently, if the deal is done in stock, it is more likely to be accretive, and more likely to be accretive by a small margin than be dilutive by a small margin.¹⁰ We find consistent evidence.

¹⁰ One might wonder why there should at all be any slightly dilutive deals, since (i) a small amount of cash might render the deal accretive, and (ii) as noted above, slightly dilutive deal announcements are associated with lower stock price reaction. As regards the first issue, it is possible that the target management is reluctant to add a small amount of cash as it might trigger tax obligations for shareholders and distribution costs. As regards the second,

Finally, we examine whether deals are more likely to be accretive when the CEO's compensation is linked to EPS targets. Specifically, we expect that when the CEO has a larger proportion of compensation tied to unvested incentive plans and EPS is a vesting hurdle, deals are more likely to be done in cash, and more likely to be accretive when stock payments are involved. We find supportive evidence.

Our paper contributes to the recent literature on how behavioral biases affect mergers and acquisitions. Baker, Pan, and Wurgler (2012) document that the recent peak prices (especially the 52-week high) of the target firm have been used as reference points or anchors in valuing the target and negotiating the deal. The targets' recent peaks have a strong impact on the offer prices, deal completion rates, and acquirers' market reactions. Ma, Whidbee, and Zhang (2019) find that the recent peaks of the acquirer stock prices also affect the acquirer's market reactions to deal announcement. Our paper suggests that absent reliable synergy estimates, the current level of EPS is likely taken as a reference point by the acquirer investors, which has a strong influence on the management's decision about deal structures, especially the method of payment. The findings of our paper also echo the behavioral literature on earnings management. For example, Degeorge, Patel, and Zeckhauser (1999) find that executives manage earnings to exceed the thresholds of reporting positive profits, sustain recent profits, and meet analyst's expectations. Burgstahler and Dichev (1997) also find that there are disproportionately high frequencies of small earnings gains than small earnings losses. Our paper establishes evidence in the M&A context that managers structure the deal to maintain current per-share earnings.

More broadly, our paper also speaks to the literature on how non-fundamental factors affect merger decisions. Shleifer and Vishny (2003) propose a theory that predicts over-valued firms can benefit from making acquisitions with stocks as currency. Rhodes-Kropf and Viswanathan (2004) further show that such bids with over-valued acquirer stock can be accepted rationally by target firms

in results not reported in tabular form, we find that when slightly dilutive deals are done in spite of high ownership by short horizon institutional investors, deal synergies as reflected in combined cumulative returns of target and acquirer is higher. This suggests that these are possibly deals where synergy is more visible, and EPS accretion may not be as necessary to convince shareholders.

given information asymmetry. Empirical support for mispricing-driven mergers is found in Rhodes-Kropf, Robinson, and Viswanathan (2005), Ang and Cheng (2006), and Dong et al. (2006). Our paper adds to the literature by highlighting EPS impact as another important non-fundamental factor in merger decisions. Our paper is closely related to the recent work of Bates et al. (2019) that suggests “EPS-bootstrapping” (seeking EPS accretion through acquiring low-P/E targets by high-P/E acquirers) as an important channel on how misvaluation affects merger decisions. While Bates et al. (2019) focus on the matching between acquirers and targets and the propensity of acquisitions, we emphasize how the deal structure and premium is affected by the EPS concerns.

II. Hypothesis

Our key hypothesis is that in a merger, the managers of the acquiring firm are sensitive to whether the merger results in a dilution of EPS, that is, a lower EPS for the combined firm (based on the latest earnings forecasts of both firms prior to deal announcement). Because synergies are long-term and unverifiable, market participants, especially those with short horizons, will focus on the immediate impact on EPS ignoring any potential synergy (the term “immediately accretive” is commonly used to describe the EPS impact of a deal). Target shareholders will judge the deal by the premium they receive. We are not arguing that EPS accretion is the primary driver of mergers. Rather, the immediate implication of EPS-sensitivity could manifest in the way the deal consideration is structured. Nonetheless, to the extent that payments in cash could be costly for certain types of acquirer and target shareholders, EPS-sensitivity could well affect the types of deals that are done.

In a stock merger, the combined EPS is immediately affected by the exchange ratio (“ x ” hereafter). Ignoring synergies and other accounting adjustments such as amortization of goodwill, the combined EPS $(\frac{e_b \cdot m + e_t \cdot n}{m + n \cdot x})$ ¹¹ is higher than pre-merger EPS of the acquirer (e_b) when $x < \frac{e_t}{e_b}$. Although the immediate change in EPS does not have direct value implications, in practice, acquirer shareholders appear to focus on it to assess the deal’s per-share impact on their wealth. This can be rational if it is

¹¹ e_b and e_t refer to the latest EPS forecasts of the acquirer and target prior to deal announcement. n and m refer to the numbers of shares outstanding for the target and acquirer at deal announcement.

the one salient, verifiable signal they have about the merger. Additionally, and non-exclusively, acquirer shareholders could regard the pre-merger EPS as a reference point and perceive EPS dilutions as imposing greater losses than equal-sized accretions. This implies that $\frac{e_t}{e_b}$ could create a threshold on exchange ratios, crossing which would significantly increase the risk of shareholder disapproval. As a result, EPS accretion can be perceived as a more favorable outcome of deal negotiation.

Cash deals are more friendly to EPS when the acquirer’s borrowing costs (or opportunity costs of forgoing cash) are not too high. To understand the EPS impact of a deal done partially or entirely in cash relative to being done entirely in stock, we can decompose a merger deal into two hypothetical steps. In the first step, the target is combined with acquirer through an offer of acquirer stock. The combined EPS is determined by the number of shares issued to target shareholders. In the second step, a fraction of the shares issued is “repurchased”—if none (part/ all) of the new shares are repurchased, the deal ends up as a pure stock (mixed/ cash) deal. Such a “repurchase” can increase the combined EPS if the acquirer’s after-tax borrowing cost (or opportunity costs of forgoing cash) is lower than the ratio between combined EPS and the repurchase price (“accretion condition” hereafter).¹² Thus, whenever the “accretion condition” is satisfied, cash and mixed deals are more accretive to EPS than stock deals with the same offer value. However, cash deals can be less desirable than stock deals because taxes are immediately payable for the target shareholders receiving cash, which reduces target shareholders’ value and in turn causes a value leakage of target and acquirer combined. Therefore, we expect that cash deals are more likely to take place when (a) paying stock would induce immediate dilution to EPS, and (b) the “accretion condition” is satisfied.

We construct a counterfactual or “pseudo” exchange ratio, x_{ps} , for cash and mixed deals, which is defined as the offer price per target share divided by the acquirer’s stock price one day prior to the

¹² The condition applies to any stock repurchase. The $e_{post} = \frac{n \cdot e_{pre} - (1 - \tau)E(R) \cdot k \cdot p}{n - k}$, n is the pre-repurchase number of shares, k is the number of shares repurchased, p is the repurchase price, and $E(R)$ is the expected cost of borrowing. A repurchase is EPS-accretive ($e_{post} > e_{pre}$), if $\frac{EPS_{pre}}{p} > (1 - \tau)E(R)$.

deal announcement.¹³ We also construct a pseudo change in EPS (P_CH_EPS), which is what the change in EPS would be if the deal were done in stock with $x = x_{ps}$. Since even small dilutions to EPS could cause large perceived losses under prospect theory, and pose risks to deal success, we expect cash deals to be more likely when the offer price implies pseudo dilution to EPS, even if it is minor dilution. These arguments lead to the following hypotheses.

Hypothesis 1. (i) In the time series, the fraction of deals that are done in cash each year has a positive correlation with the fraction of deals that are pseudo dilutive ($P_CH_EPS < 0$). (ii) In the cross section, pseudo dilution is positively related to the likelihood of a cash deal and the fraction of the deal value that is paid in cash.

Hypothesis 2: (i) The frequency of both cash and mixed deals increases discontinuously as the pseudo change in EPS (P_CH_EPS) goes from slightly positive values to slightly negative values. (ii) The “accretion condition” (that ratio of combined EPS over acquirer price exceeds acquirer’s after-tax borrowing cost) is more likely to be satisfied for the cash deals with P_CH_EPS right below 0 than those above 0.

Given that target shareholders would seldom accept a deal with non-positive premium, the exchange ratio has to exceed $\frac{p_t}{p_b}$ in a stock deal.¹⁴ To simplify notation, we will define $x_1 = \frac{p_T}{P_B}$ and $x_2 = \frac{e_T}{e_B}$. When $x_1 \geq x_2$, a positive premium paid to the target must cause EPS dilution in stock deals, making stock the less favorable method of payment than cash. On the other hand, when $x_1 < x_2$, stock deals with x between x_1 and x_2 are most likely to be approved by the shareholders on both sides, as these deals would satisfy both conditions of positive premium to the target and EPS accretion to the acquirer.

Note that even among pure stock deals with $x_1 < x_2$, there is a range of exchange ratios that support a positive premium and earnings accretion, but the actual exchange ratio is the outcome of

¹³ As robustness check, we also construct x_{ps} using the acquirer’s stock price one day after deal announcement and find our results are robust to such alternative measurement.

¹⁴ In our study, the prices are those that prevail one day prior to deal announcement. This is consistent with the common practice that deal premium ($x \cdot p_b - p_t$) is measured using the stock prices before deal announcement. Our results are robust to using the stock prices four weeks before deal announcement.

bargaining between the target and acquirer and need not fall below x_2 . Absent EPS-sensitivity the distribution of exchange ratios would be smooth around the threshold of x_2 . However, we expect a discontinuity with $x > x_2$ to be the less likely case, since the acquirer management can bargain aggressively for an EPS-accretive deal when the acceptable exchange ratio is close to x_2 , claiming, somewhat accurately as we will later show, that the deal will not be successful if dilutive. Even if such bargaining is not successful, these deals with $x > x_2$ could be paid in cash or forgone eventually, and so within the sample of pure stock deals, we expect to see an abnormal bunching of exchange ratios just below x_2 such that we see more pure stock deals at exchange ratios that imply slightly positive change in EPS.

These arguments lead to the following hypothesis.

Hypothesis 3: (i) The condition of $x_1 \geq x_2$ is positively related to the likelihood of a cash deal and the fraction of the deal value that is paid in cash. (ii) For deals with $x_1 < x_2$, there is a discontinuous increase in the frequency of pure stock deals as the change in EPS (CH_EPS) crosses the threshold of 0 from the left.

Last, we consider the possible reasons why acquirers are concerned about the EPS impact of deals. As mentioned before, EPS-sensitivity is rooted in investors' aversion to EPS dilution. Such preference of acquirer investors can affect managers' decisions on deal structure, since shareholder support is crucial to deal success. In all the major U.S. exchanges during our sample period, an acquirer must obtain shareholder voting approval when more than 20% of outstanding shares are issued to finance an acquisition. Investors are more likely to reject a deal that is immediately dilutive to EPS. However, as found by Li, Liu, and Wu (2018), acquirers sometimes can avoid shareholder voting by increasing the proportion of cash as deal payment and decreasing the share issuance proportion to lower than 20%.¹⁵ We expect voting-avoidance to be more likely when the deal would incur dilution under full stock payment. In other words, the percentage of cash used in the deal consideration would increase

¹⁵ Li, Liu, and Wu (2018) show that there is a large cluster of mixed deals that issue shares just below 20% compared with just above it.

discontinuously as counterfactual “pseudo issuance” associated with a deal crosses the 20% threshold from the left, and this effect should be only observed for deals that are pseudo dilutive. Finally, as further evidence that shareholder approval (with or without the formal voting mechanism) is related to the EPS impact of a deal, we expect deal completion rates for pure stock deals to be higher when the deal is EPS-accretive, and to increase discontinuously when the EPS change crosses 0 from negative to positive values, but only if the deal involves share issuance in excess of 20%. This leads to the following:

Hypothesis 4. (i) The percentage of cash payment in the total deal consideration among all deals increases discontinuously as the pseudo share issuance crosses the 20% threshold from the left, and this effect only exists for the sub-sample of deals with $P_CH_EPS < 0$. (ii) Accretive deals are more likely to be completed than dilutive deals, and when share issuance is above the 20% threshold, the likelihood of deal completion increases discontinuously as the change in EPS (CH_EPS) goes from negative to positive.

EPS-sensitivity can be driven not just by investors’ aversion to losses in comparison to a reference point, but also by the short-term focuses of shareholders and managers. The existing literature finds that managers sometimes overweight short-term cash flows and distort long-term decisions. For example, certain types of investors could have short-term goals and influence managers to take myopic decisions (e.g., Bushee (1998), Gaspar, Massa, and Matos (2005), Chen, Harford, and Li (2007), and Asker, Farre-Mensa, and Ljungqvist (2014)). Moreover, EPS, as a major metric of short-term cash flows, plays a critical role in companies’ financing and investment decisions. Several papers find that CEO compensation structures with over-emphasis on EPS generate myopic incentives (e.g., Cheng, Harford, and Zhang (2015) and Bennett et al. (2017)). A survey paper Almeida (2018) provides a detailed overview of this literature. Drawing on this literature, we argue that acquirers are more likely to be dilution-sensitive if a higher fraction of the firm is owned by institutional investors who trade more frequently (short-term oriented), and if the acquirer CEO’s compensation is directly tied to EPS.

Hypothesis 5: (i) When a larger fraction of the firm is owned by short-term institutional investors, there is a higher likelihood that a stock deal with $x_1 < x_2$ is slightly accretive than slightly

dilutive. (ii) When acquirer CEO compensation is directly tied to EPS, there is a higher likelihood that a stock deal is accretive than dilutive.¹⁶

III. Data

1. Sample Construction

We obtain the merger events from SDC and impose the following restrictions on our sample: (1) Both the target and acquirer are US public firms; (2) Deal size is at least 1 million US dollars; (3) The acquirer owns less than 50% of the target before the deal and 100% after the deal; (4) The form of the transaction is “Merger”, “Acquisition of Majority Interests” or “Acquisition of Assets”;¹⁷ (5) The deal announcement occurs between 1991 and 2017;¹⁸ (6) Deal transaction value accounts for at least 1% and no more than 150% of the acquirer’s capitalization; (7) Both the acquirer and target can be matched with a single “Permno” in CRSP;¹⁹ (8) The deal is paid with common stock, cash, or a mixture of them;²⁰ (9) The deal status is either “Completed” or “Withdrawn”. There are 3242 mergers in our sample, 2796 of which are completed. We focus on the sample of completed deals, except for section IV.4.1 (Tables 7 and 8) where we include the withdrawn deals as well. We classify the deals in our sample into three types, pure stock, pure cash, and mixed deals, based on the method used to pay the target firm’s common shareholders.²¹ The SDC M&A data are further matched with the I/B/E/S data for the annual forecasts

¹⁶ As we explain in Section IV.4.3, Hypothesis 5 (ii) requires linking detailed information on CEO compensation contracts with our M&A sample, leading to serious data loss. Consequently, we are not able to test whether short-termism induces by CEO compensation contracts results in exactly the same effects as envisioned in Hypothesis 5 (i).

¹⁷ We keep the deals in from of A, AP, AA, AC, AM, AR, and M, and exclude buyout and repurchase deals.

¹⁸ We exclude the deals announced before 1991, because the information on deal consideration is not complete.

¹⁹ We exclude deals in which either the acquirer or target have dual-class shares, since the “earnings per share” does not have a clear definition in these cases.

²⁰ We exclude the deals involving non-cash and non-stock consideration (“other consideration” hereafter). “Other consideration” include convertible bond, preferred stock, and profit-sharing unit, choice between different types of considerations, and assumption of liability. Assumption of liability is the most common form of “other consideration.” We exclude the deals involving assumption of liability, because they usually involve wealth transfer from acquirer’s shareholders to the target’s debtholders, and thus the value paid to target common stockholders is unlikely to be comparable with that in a deal without assumption of liability.

²¹ We rely on both the SDC variable of “consideration structure” and manual examination to classify deal types. The SDC “consideration structure” does not always reflect the payment method to the holders of target firms’ common shares. For instance, if the common shareholders receive stock and preferred stock holders receive cash, the deal may be classified as “mixed deal” according to SDC “consideration structure.” We reclassify such deal as pure stock deal.

of EPS, with CRSP for stock prices and returns, with Compustat for financial data, and with Thomson Reuters 13F for the ownership structure data.

2. Measures

In stock deals, the exchange ratio, x , is defined as the number of shares in the combined firm obtained by target shareholders for each share of their common stock. The acquirer shareholders usually continue to hold 1 share in the combined firm for each share of their common stock. We use the “exchange ratio” field in SDC to measure x in stock and mixed deals. When the variable is missing, we hand fill it from the textual description of “deal consideration.” x has been set as a missing value if only the dollar value per target share is mentioned in deal consideration.²²

For cash and mixed deals, we construct a “pseudo exchange ratio,” x_{ps} , which is defined as the ratio of “offer price per share” and acquirer’s stock price on the day prior to deal announcement.²³ The “offer price per share” reflects the value of deal consideration received by target shareholders for each share of their common stock. For pure stock deals, x_{ps} is the same as x .

To measure the combined EPS, we focus on analysts’ EPS forecasts for the current year of deal announcement. Specifically, we obtain the latest forecasts of annual EPS before deal announcement from I/B/E/S and use the median forecasts to measure e_b for the acquirer and e_t for the target. When the median forecast is missing, we take the “last-twelve-month EPS” from SDC to enlarge the sample coverage. Our results are robust to constructing x_2 using only the forecasted EPS or only the last twelve months’ EPS.

²² For a few deals with collars, the exchange ratio is not fixed at the announcement. The EPS implication is then determined by the number of shares issued eventually. For robustness, we construct a measure of “Adjusted Exchange Ratio”, which is the number of shares issued scaled by the target’s number of shares outstanding before the deal. We only report the results using the “Exchange Ratio”. Our results are robust to using the “Adjusted Exchange Ratio”.

²³ Using acquirer’s stock price one day before announcement is consistent with the industry practice in determining the exchange ratios in stock deals. Our results are robust to constructing x_{ps} using the stock price at the day after deal announcement.

The combined EPS in a pure stock deal is defined as $\frac{e_b \cdot m + e_t \cdot n}{m + n \cdot x}$, where m and n refer to the numbers of shares outstanding for the acquirer and target at deal announcement, and the change in EPS (CH_EPS) is defined as $(\frac{e_b \cdot m + e_t \cdot n}{m + n \cdot x} - e_b)$. For cash and mixed deals, we construct the (pseudo) combined EPS using x_{ps} and define the pseudo change in EPS (P_CH_EPS) as $(\frac{e_b \cdot m + e_t \cdot n}{m + n \cdot x_{ps}} - e_b)$.

We also assess the “accretion condition” that indicates whether cash is more accretive to EPS than stock as the form of payment for a deal. Specifically, we are interested in whether the ratio of combined EPS under x_{ps} and the “repurchase price” proxied by the acquirer’s stock price (either one day prior to or following deal announcement) is higher than the after-tax expected cost of borrowing, $(1 - \tau) \cdot E(R)$. Following Hribar, Jenkins, and Johnson (2006) and Almeida, Fos, and Kronlund (2016), we measure $E(R)$ as follows. We first estimate each acquirers’ excess cash holding using the residual term of OLS regressions of their cash holding on firm characteristics and industry and year fixed effects following Pinkowitz, Stulz, and Williamson (2015). If the excess cash holding exceeds the deal value, $E(R)$ is assumed to be the same as the 3-month Treasury-bill rate at deal announcement to capture the opportunity costs of forgoing excess cash holding. Otherwise, we assume that the component of deal value exceeding the excess cash holding is financed with debt at the implied interest rate of the acquirer,²⁴ while the opportunity cost of spending the excess cash holding is still the 3-month Treasury-bill rate. We use the statutory tax rate for our sample period ($\tau = 0.34$).

Last, we discuss the thresholds of $x_1 = \frac{p_t}{p_b}$ and $x_2 = \frac{e_t}{e_b}$. Consistent with above, e_t and e_b are measured with the median EPS forecasts that are filled by “last-twelve-month” EPS when missing. x_2 is set as a missing value if either the target or acquirer has a negative value of the median EPS forecast. p_t and p_b are measured with the stock prices of the target and acquirer one day prior to deal announcement. Our results are robust to using the stock prices four weeks before the deal announcement.

²⁴ Implied interest rate is estimated using the acquirer’s total interest expenses scaled by the lagged total debt. When this variable is missing, it is filled up by the median implied interest rate of the firms in the same (Fama-French 49) industry and size quintile.

3. Sample overview

As shown in Panel A of Table 1, there are 2050 out of the 2796 completed deals with positive EPS of both the target and acquirer. Stock deals account for 56% and cash deals account for 31% of the completed deals. In the subsample of deals in which the acquirer has positive EPS and the target has negative EPS, the fraction of cash deals is close to 43%, significantly higher than the average of the full sample. This is consistent with the prediction that, to avoid EPS dilution, an acquirer with positive EPS is more likely to use cash rather than stock to buy a target with negative EPS.

In Panel B of Table 1, we find that the majority (56%) of the completed cash deals have $x_1 > x_2$, while the majority (66%) of stock deals have $x_1 \leq x_2$. This is consistent with Hypothesis 3(i) that cash is more likely to be paid than stock when $x_1 > x_2$. Moreover, the proportion of cash deals is much higher among deals with $x_1 > x_2$ than among deals with $x_1 \leq x_2$, and the proportion of stock deals is much lower among deals with $x_1 > x_2$ than among deals with $x_1 \leq x_2$.

IV. Empirical Results

1. Pseudo Change in EPS and Cash Payments

To examine Hypothesis 1, we plot in Figure 1 the proportion of cash (and stock) deals along with the fraction of deals that are pseudo dilutive (and accretive) to EPS. We first notice that the relative importance of cash deals has been going up in recent years, while the fraction of stock deals has been going down. After 2001, cash has become the more frequent form of payment than stock.²⁵ We observe a positive correlation between the fraction of cash (stock) deals and that of pseudo dilutive (accretive) deals. The correlation is as high as 0.80 (0.88). These patterns seem to suggest that there is a growing tendency for mergers to be dilutive to the acquirer's EPS under stock payments, and in order to avoid dilution, these deals are increasingly done with cash.

²⁵ Such pattern has been documented in the literature. de Bodt, Cousin, and Roll (2017) argue that the 2001-abolishment of pooling accounting in takeovers contributed to lowering (earnings-based) managerial incentives to make stock payments. Eckbo, Makaew, and Thorburn (2018) suggest that potential competition for the target from cash-paying private bidders may have driven the increasing popularity of cash deals.

Time-series correlations are only suggestive about EPS-sensitivity, since the increasing popularity of cash payments could also be driven by other factors unrelated to EPS concerns, such as the reduced borrowing costs in recent years. To control for time fixed effects, we further estimate cross-sectional regressions in which either an indicator variable for cash deals or the fraction of cash in deal consideration is regressed on an indicator variable for pseudo dilution. We also control for the acquirer's characteristics that are relevant for capital structures and deal characteristics such as the relative deal size. The regression results in Table 2 suggest that the likelihood of all-cash deals increases by 5.5 percentage points,²⁶ and the fraction of the deal value that is paid in cash increases by 43 percent, if the deal is pseudo dilutive to EPS. These results are in general robust to further controlling for the acquirer's and target's industry fixed effects. Our evidence supports Hypothesis 1 that cash is the more likely form of payment when doing the deal in stock would induce immediate EPS dilution.

To further control for confounding factors and identify the EPS impacts, we investigate the distributions of cash and mixed deals with respect to their pseudo change in EPS. As illustrated in Hypothesis 2, consistent with a reference point argument, the deals incurring minor dilution in EPS could be perceived as imposing a disproportionately larger loss to the acquirers' shareholders compared to the gain from minor accretion, so that such deals are more likely to be paid in cash to avoid dilution. In other words, EPS-sensitivity would imply a disproportionate clustering of cash and mixed deals with P_CH_EPS right below 0.

We conduct two tests on whether the distribution of P_CH_EPS involves a discontinuous point at 0. First, following Cattaneo, Jansson, and Ma (2019), we estimate the density functions of P_CH_EPS from both sides of 0 and test for the difference between left and right density estimates at 0. The idea of this method is to fit density functions using local-polynomial regressions and remove the boundary bias through a higher-order polynomial term. More details of our technical choices are provided in Appendix B. In Figure 2 (a), we plot the fitted densities in solid lines and the 95% confidence intervals are contained in the shaded area. We find the density of cash deals is significantly higher for P_CH_EPS

²⁶The results in Table 2, 5, and Appendix Table B2 are all robust to using an indicator for cash and mixed deals combined as the dependent variable.

to the left of 0 than to the right of 0. The p-value of the difference between the left and right density estimates is close to 0 and is reported in the subtitle of the figure. This test is in the same spirit as the McCary (2008) test. Our results are all robust to using the McCary Test.²⁷

As one may wonder whether the distribution involves other discontinuity points, we conduct a second test following Bollen and Pool (2009) that does not require pre-specifying the test-threshold. We first assume the underlying distribution is smooth everywhere and then test whether the observed data rejects the null hypothesis that no discontinuity exists. In Figure 3 (b), we plot the histogram of P_CH_EPS applying the optimal bin size following Bollen and Pool (2009) and fit a smooth kernel density function. We next test whether the actual number of observations in each bin is significantly different from the expected number of observations implied by the estimated smooth density. The test-statistic of such a difference is presented as dots in Figure 3 (c) and the 95% confidence interval is indicated with dashed lines. More details of this method are provided in Appendix B. We find in Figure 3 (c) that the bin of P_CH_EPS right below 0 is the only place in the whole distribution of cash deals that rejects the null hypothesis.

We repeat the two tests for mixed deals and find similar results, shown in Figure 3. These results strongly support Hypothesis 2 (i) that cash payments are disproportionately more likely to take place when full stock payment would be slightly dilutive to EPS than when it would be slightly accretive.

Next, we conduct a regression discontinuity analysis using the three forms of deals to examine how the propensity for cash payment changes in a narrow neighborhood of zero P_CH_EPS . Figure 4 (a) plots the fitted linear lines for the indicator of cash and mixed deals with respect to P_CH_EPS from

²⁷ The figures reveal that the deals cluster around the zero value of P_CH_EPS on both sides. This is not only a feature of cash deals, but also of pure stock deals (see Figure B1 in the Appendix). It is likely that this tendency reflects Rhodes-Kropf and Robinson's (2008) finding that acquisition patterns are better described as "like buys like": buyers and targets tend to have similar P/E ratios. Note that if the acquisition premium is zero, the pseudo exchange ratio is $x_{ps} = \frac{P_T}{P_B}$, since the cash offer per share is equal to the target price. Further, if the P/E ratios of the buyer and the target are close, we have $\frac{P_T}{P_B} \cong \frac{e_T}{e_B}$, that is $x_{ps} \cong \frac{e_T}{e_B} = x_2$, so that the pseudo change in EPS is small, that is, P_CH_EPS is close to zero. Figure 2(a) and (b) and Figure B1 in the Appendix suggest that even with a positive premium, this property of deals is preserved, that is, the P_CH_EPS continues to cluster around 0. However, it is important to point out that the single discontinuity from the left of 0 is only present for cash deals in Figures 2(a) and 2(b). We interpret this as suggesting that some stock deals are replaced with cash deals when doing the deals in stock would have implied minor dilution.

both sides of 0, and Figure 4 (b) plots the corresponding fitted lines for the fraction of deal value that is paid in cash. We find that there is a discontinuous increase in both the likelihood of cash and mixed deals (as opposed to stock deals) and the fraction of deal payments in cash when P_CH_EPS crosses 0 from the positive to the negative side. To control for the firm characteristics that possibly affect the choice of payment methods, we further estimate the effect of P_CH_EPS in a local regression discontinuity design. As shown in Table 3, after we control for an extensive set of firm characteristics of both the acquirer and target, the regression discontinuity effect remains significant, consistent with Figure 4. These findings confirm that cash is disproportionately more likely to be paid when full stock payment would incur minor dilution to EPS.

We also report in Appendix Table B1 that, except for acquirer total assets, the control variables in Table 3 are smoothly distributed around the zero P_CH_EPS threshold. Acquirers engaged in slightly pseudo accretive deals are smaller in terms of total assets. These findings in Figure 4 and Table 3 are robust to an alternative specification of global regression discontinuity design, the results of which are reported in Figure OA1 and Table OA1 of the Online Appendix.

We next examine the second part of Hypothesis 2 that the “accretion condition” should be satisfied if some deals are done in cash instead of stock to mitigate adverse EPS impact. We focus on the deals that would incur small dilution to EPS had these been done fully in stock, as the cash payments in these deals are likely to have been added to mitigate dilution. In Panel A of Table 4, we report the proportion of each type of deal that satisfies the “accretion condition” (that ratio of combined EPS over acquirer price exceeds the acquirer’s after-tax interest rate) within the ranges of slight pseudo-dilution (P_CH_EPS from -0.05 to 0) and slight pseudo-accretion (P_CH_EPS from 0 to 0.05).²⁸ In Panel B, we report the mean value of the gap between the ratio of combined EPS over acquirer price and acquirer’s after-tax interest rate. We first find that 73% (71%) of the cash (mixed) deals that are slightly pseudo-dilutive satisfy the “accretion condition.” Moreover, these proportions are 49% (50%) among the slightly pseudo-accretive cash (mixed) deals, which is significantly lower. The gap between the

²⁸ Our results are robust to using different bandwidths to define slight change in pseudo EPS.

ratio of combined EPS over acquirer price and acquirer's after-tax interest rate is also more profound for the slightly pseudo dilutive cash (mixed) deals than the accretive ones. Our findings in Table 4 strongly support Hypothesis 2 (ii).

Before leaving this section, it is worthwhile to clarify that while we utilize the schematics of regression discontinuity tests, we do not assume that there is no manipulation of the running variable (P_CH_EPS) around the zero threshold, and neither do we intend to make any causal inference from the exogenous variations of this variable. Rather, we focus on demonstrating that there is “bunching” of certain types of deals around the threshold, which suggests that the threshold is relevant for decision making.²⁹

We highlight two possible forms of manipulation of the running variable, both of which are consistent with our argument that deal-making is sensitive to its EPS impact. First, since the method of payment and offer price are both negotiation outcomes, “bunching” could imply the existence of manipulation on both the payment form and the offer price (which in turn determine the pseudo change in EPS). Fixing the offer price, the form of payment could be adjusted to accommodate the acquirer's demand for EPS accretion. This is what the evidence from Figures 2 and 3 suggest. On the other hand, if for certain types of acquirers, cash payment is not feasible or could not improve EPS (i.e., the “accretion condition” is not satisfied), the management can continue to do the deal in stock but bargain aggressively for a lower offer price to avoid dilution. We notice supportive evidence on this point in Table 4—there is abnormally low percent (40%) of slightly accretive stock deals that satisfy the accretion condition, suggesting that these deals could not have avoided dilution even if done in cash, and therefore the exchange ratio has to be slightly adjusted in favor of the acquirer to make the deal accretive.³⁰ Second, we do not rule out the possibility that the extensive margin of acquisition decisions can also be affected by whether the pseudo change in EPS is positive or negative. For example, the financially constrained acquirers could forgo the deals that are EPS-dilutive under stock payments,

²⁹ This approach is common in the Public Economics literature – see Kleven and Waseem (2013) and Kleven (2016). For a recent application in Finance, see Babenko, Choi and Sen (2019).

³⁰ In section IV.2, we examine pure stock deals and find a significant discontinuity around the dilution threshold, consistent with this possibility.

when they could not raise cash and a low offer price in the stock deal could not be acceptable with the target.

2. The Relative P/E of the Acquirer and Target

As we discussed in formulating Hypothesis 3 (i), the dual conditions of a positive premium and EPS accretion can both be met for a stock deal only when the acquirer buys a target with a lower P/E ratio (that is, when $\frac{p_t}{e_t} < \frac{p_b}{e_b}$, or equivalently, $x_1 = \frac{p_t}{p_b} < \frac{e_t}{e_b} = x_2$)—hence, stock deals are popular when “high buys low,” otherwise cash deals are more likely. In Table 1, we find supporting evidence: the fraction of cash (stock) deals is higher (lower) when $x_1 > x_2$ as opposed to $x_1 \leq x_2$. The positive correlation between $x_1 > x_2$ and cash payment remains after we control for deal and firm characteristics, and year and industry fixed effects. The regression results are reported in Appendix Table B2.

Hypothesis 3 (i) is in line with the prediction of an influential theory that argues that stock mergers can be driven by overvalued acquirers buying less overvalued targets using their stock as currency (Shleifer and Vishny (2003)). This phenomenon is hypothesized to have contributed to the merger wave in the 1990s. We emphasize that our results cannot be fully explained by the misvaluation theory, although EPS-sensitivity and misvaluation are not mutually exclusive hypotheses.

We contrast our results with the misvaluation theory in two ways: time subperiods and discontinuities.

2.1 Sub-Periods

First, misvaluation was hypothesized to be a major contributor to mergers in the 1990s; however, as shown in Table 5, the associations between pseudo dilution and cash payment (both the likelihood of cash deals and the fraction of cash in deal payments) are actually stronger for the sub-period of 2002-2017 compared to the earlier sub-period of 1991-2001. The discontinuity corresponding to Figure 2 is also only significant for the later sub-period (this result is not shown separately). One reason for the weaker results for the earlier sub-period has to do precisely with the misvaluation theory. As is noticeable from Figure 1, prior to 2001 many dilutive deals were done in stock, in contrast to the later

sub-period. This could have been because targets were willing to accept potentially overvalued acquirer stock only if the premium was substantial, resulting in EPS dilution, which in turn was more acceptable for acquirers since they were able to offer overvalued stock. Note also that by claiming that they were issuing stock to obtain pooling accounting treatment, overvalued acquirers were able to “pool” with correctly valued acquirers when using their stock as a currency would otherwise have been revealing. In other words, the EPS-accretion constraint did not bind as tightly during this period, but mattered more in the later period, once market-wide overvaluation disappeared.

2.2 Pure Stock Deals

Second, we look for evidence of EPS-sensitivity within the subset of “high buys low” deals. Hypothesis 3 (ii) has a strong implication, namely, that even among the stocks with $x_1 < x_2$, EPS-sensitivity would introduce a discontinuity on the distribution of exchange ratios around the threshold of x_2 . In contrast, one would expect a smooth distribution if EPS dilution did not matter. Misvaluation, however, does not have any such prediction. In Figure 5, we test Hypothesis 3 (ii) using the two methods described in the previous section and find that there are disproportionately more stock deals in this subsample that involve slight accretion to EPS as opposed to slight dilution.

There are multiple possible mechanisms related to EPS dilution sensitivity that could be driving the discontinuity observed in Figure 5. We discuss two of these below.

First, managers can add cash to the consideration of deals that are pseudo dilutive, and so the all-stock slightly dilutive deals are replaced with mixed accretive deals and represent the missing mass from the distribution of all-stock deals presented in Figure 5. In addition to the evidence established in the previous section, we show that when a mixture of cash and stock is the form of payment associated with a pseudo-dilutive deal, the fraction of cash is chosen to ensure a non-negative change in EPS. In Figure 6, we plot the actual change in EPS with respect to the pseudo change in EPS among the mixed deals with P_CH_EPS near 0. We find that for negative P_CH_EPS , the relation is relatively flat and is in general non-negative. Thus, for a range of potentially negative changes in EPS, acquirers add enough cash to make the actual change in EPS almost uniformly slightly positive. Only when the

pseudo change in EPS is positive anyway, is there a positive and near 1-for-1 relation between the pseudo and actual changes in EPS.

A second possibility for the discontinuity is that the slightly accretive pure stock deals are in fact deals that would have been slightly dilutive, but that adding cash was not feasible so the target had to sacrifice some premium so that these deals could become slightly accretive. One reason adding cash would not have been feasible is if the deal does not satisfy the “accretion condition” required for cash to be more accretive to EPS than stock as the method of payment. Evidence for this possibility can be seen from Table 4. The accretion condition holds only for an abnormally low proportion of the stock deals that are slightly accretive to EPS. In addition, everything else equal, such bargaining by the acquirer would imply a lower offer premium to the target to allow for accretion. In Appendix Table B3, we find consistent evidence that the slightly accretive stock deals pay a significantly lower premium than 1) the slightly dilutive stock deals and 2) the slightly accretive mixed deals. In these regressions, we control for an extensive set of target firm characteristics that could affect offer premiums, and P_CH_EPS that may have a mechanical relationship with premiums.

2.3 Value implications of EPS-sensitivity

If the EPS impact of a deal receives too much weight in managerial decision making, the set of deals completed and the form of payment used will differ from their optimal sets. For example, the discontinuity in Figure 2(a) and Figure 3(a) around the zero P_CH_EPS threshold suggests that some deals that could have been done entirely in stock are done (at least partially) in cash, which triggers immediate tax payments and causes a leakage from the total wealth of target and acquirer shareholders. Figure 5 suggests that if adding cash is too costly or cash does not mitigate dilution (because the accretion condition is not satisfied), the target has to be willing to sacrifice premium to accommodate acquirer’s EPS accretion demand. This could lead to more EPS-friendly deals being favored at the expense of higher NPV deals.

To examine this question, we compare the abnormal stock returns (CAR) around deal announcement for stock deals with $x_1 \leq x_2$. We design the specification to allow us to distinguish

between slightly dilutive or accretive deals from those much further from the dilution border. We expect the slightly dilutive deals to involve a higher and likely more verifiable synergy, suggesting that shareholders would be supportive of such deals despite EPS dilution. In other words, the combined value creation for the target's and acquirer's shareholders should be higher for slightly dilutive deals than for slightly accretive deals that can expect shareholder support due to the more favorable EPS outcome. We measure the combined value gain by value-weighted average cumulative abnormal return from forty-two trading days before deal announcement to deal completion (CAR [-42, C]) of the target and acquirer. The pre-announcement period is included to capture the runup of target stock prices due to information leakage about the deal (Schwert, 1996).³¹ In Panel A of Table 6, we regress the combined CAR [-42, C] on an indicator of positive change in EPS (*CH_EPS*). As we control for the polynomial terms of *CH_EPS*, the coefficient on the indicator captures the difference in the dependent variable from just crossing the boundary between the two sides of zero *CH_EPS*. We find that indicator has a negative sign, which indicates that the combined CAR [-42, C] is significantly lower for the slightly accretive deals than slightly dilutive deals. This supports the argument that managers were able to make the case for shareholder value creation in these slightly dilutive deals so that they could be completed. We also find that both target and acquirer shareholders share the higher value creation, as the indicator of positive *CH_EPS* is significant and negative for the CAR [-42, C] of both target and acquirer firms. The relative magnitudes of all of the dummy variable and the polynomial terms is such that for large enough accretion or dilution, the total effect switches sign, confirming our interpretation that the coefficient on the dummy variable isolates the effect of slightly dilutive versus slightly accretive deals. These results notwithstanding, in section 4.1 we discuss the difficulties that acquirer managers face in completing certain dilutive deals.

We next examine the short-term market reactions to deal announcement in a three-day window around the announcement date. The short-term announcement will reflect the immediate market reaction to the deal, without the post-announcement time spent by managers to explain the value

³¹ It is the conventional practice to measure target shareholders' value gain (or acquisition premium) by CAR [-42, C] (see Schwert (1996), Barger, et. al. (2008), and Fu, Lin, and Officer (2013)), and acquirer shareholder' value gain in the same window (see Schwert (2000) and Gaspar, Massa, and Matos (2005)).

proposition and for analysts and investors to analyze this information. Thus, the announcement return will reflect the excess focus on the EPS effect of the announced deal. If perceived losses or gains for the acquirer change discontinuously around the zero EPS change threshold, we expect that acquirers' stock prices react more negatively to deal announcement if the deal incurs slight dilution rather than slight accretion. In Panel B of Table 6, we find supporting evidence that the indicator of positive *CH_EPS* has a significant and positive sign in the regression of acquirer's CAR [-1, +1]. Moreover, we find that target's CAR [-1, +1] is significantly lower for the slightly accretive deals, and the combined CAR [-1, +1] is not distinguishable between slightly accretive and slightly dilutive deals. These are consistent with our argument that the target shareholders have to accept a lower premium in some of the slightly accretive stock deals to accommodate the acquirer's EPS accretion demand.³² The polynomial terms are insignificant, consistent with the proposition that at announcement, the market focuses simply on whether the deal is accretive or not.

3. Accounting Rules

Our arguments about the importance of EPS-sensitivity also raise the issue of the possible role an important accounting change that occurred in 2001 might have played. Under the "Pooling" method of accounting (only available for pure-stock deals prior to 2001), the book values of the target and acquirer could be combined and there was no amortization of goodwill. In contrast, under the "Purchase" method, target assets and liabilities were recognized at fair value. The gap between acquisition price and recognized fair value (the step-up) would be recorded as goodwill, which would be amortized. Thus, the Pooling method was much more EPS-friendly and was the overwhelming method of choice for pure stock deals. The Statement of Financial and Accounting Standards (SFAS) 141 and 142 were adopted in June 2001. SFAS 141 essentially abolished the pooling method of accounting for M&A transactions, so that the purchase method would apply to all transactions. SFAS 142 abolished the goodwill amortization principle, which was replaced by a yearly impairment test procedure. It has been argued

³² In the regressions reported in Table 6, we control for acquirer and deal characteristics. Results in Panel B remain unchanged when target characteristics are included. The coefficient of $D(CH_EPS > 0)$ becomes marginally insignificant at the 10 percent level for the first two and last two columns of Panel A. This suggests that target characteristics explain part of the synergy gain or loss from the deal.

(de Bodt, Cousin, and Roll (2017)) that this rule change greatly contributed to the subsequent rapid decline of stock deals.

The accounting rule change no doubt contributed to the decline in the popularity of stock deals post-2001. However, our results show that another factor contributed to the decline as well – as Figure B2 in the Appendix shows, the post-2001 period witnessed an increasing trend of deals between public acquirers and targets that involved “low buys high”, that is, buyers had lower P/E ratios than the targets. As we have discussed before, in this situation (which involves $x_1 > x_2$), deals would be necessarily dilutive if done in stock, so cash deals would become more prevalent due to concern for the EPS impact of the deal. Interestingly, we find in Table 5 that methods of payment are even more sensitive to pseudo dilution, once goodwill amortization was essentially abolished after 2001. It is worth pointing out that the EPS-sensitivity we document is fundamentally distinct from the accounting treatment of goodwill. Specifically, we highlight that forms of payment affect post-merger EPS through whether new shares are issued, which is a denominator effect, while goodwill treatment is essentially a numerator effect, on the EPS metric. As far as we know, we are the first to show that EPS-sensitivity is stronger in recent years when accounting rules created a more level playing field between cash and stock deals.

4. Why do Managers Care about EPS?

The results documented so far support the general hypothesis that deal-making is sensitive to the impact on EPS, which is consistent with the observation made earlier that the impact on EPS features prominently in the way deals are announced in the media. Investment bankers advising their clients on M&A transactions routinely do a “dilution analysis”, also known as a “merger consequences analysis”. Form S-4 filings also often provide information on the combined EPS analysis in comparison with the stand-alone EPS of the acquirer and target firm.

In this section, we explore which factors contribute to EPS-sensitivity of managers. We first show that shareholder approval of deals is an important factor behind managerial preference for accretive deals. Next, we show that ownership by short-term oriented institutional investors influences

the deal structure's sensitivity to EPS impact. Finally, we show that managers are more concerned about the EPS impact of deals when their compensation is tied to EPS.

4.1. Shareholder Voting and EPS-Sensitivity

While managers may care about how shareholders evaluate a deal for many reasons, the most obvious context is when shareholder approval is necessary for a deal to go through. In all three major U.S. exchanges, when the shares issued to finance a deal exceed 20% of the outstanding shares, shareholder approval is required.

In Table 7, we report OLS regression results to test Hypothesis 4 (i). The dependent variable is the percentage of cash in deal consideration among all deals. The independent variable of interest is the number of shares that would have to be issued had the deal been done entirely in stock ("pseudo issuance"). We include an indicator variable corresponding to when this exceeds 20%, as well as polynomial terms of the difference between pseudo issuance and the 20% threshold. We test for discontinuity around the 20% threshold for this variable. We find that the coefficient of the indicator variable indicating that the pseudo share issuance exceeds 20% is significantly positive, consistent with our hypotheses. The last six columns show that the discontinuity is only present for the subsample of deals with $P_CH_EPS < 0$. These findings suggest that pseudo dilutive deals are likely to be structured in a way that avoids shareholder voting.

Next, we examine the impact of EPS accretion on deal completion rates. Institutional shareholders can communicate displeasure about management decisions directly, even without voting, and managers, responding to such feedback, should be more likely to withdraw deals that are not supported by shareholders. Panel A in Table 8 presents some summary information about accretive and dilutive deals and deal completion rates. Dilutive deals are about 2% more likely to be withdrawn than accretive deals. Given that the average withdrawal rate is 10%, this is a substantial difference. Contrasting deeply dilutive deals (defined as deals in the bottom quartile of dilution for pure stock deals) with all other stock deals, we find that the withdrawal rate for deeply dilutive deals is twice as high

(16%) as other deals (8%). These results are consistent with Hypothesis 4 (ii) that EPS-dilutive deals, especially the deeply dilutive deals, are less likely to be completed.

Regression results provide further evidence that the EPS impact of stock deals matters for deal completion. Panel B Table 8 presents the results where the dependent variable takes a value of one for completed deals and zero for withdrawn deals, and the independent variable of interest is an indicator variable denoting that the change in acquirer EPS is negative. We include polynomial terms for the change in EPS (*CH_EPS*) and other control variables. The indicator variable's coefficient is significantly negative for regressions on the overall sample of stock deals, reported in the first 3 columns. Moreover, results from the remaining columns indicate that this effect is entirely confined to deals involving greater than 20% share issuance. These findings confirm Hypothesis 4 (ii) that slight dilution is associated with a significantly higher failure rate than slight accretion, and such difference is only observed where shareholder voting is required. Taken together, the results in Tables 7 and 8 provide a shareholder-driven explanation for managers' sensitivity to EPS in mergers; managers have a rational fear that dilutive deals will fail if put to a shareholder vote and actively structure potentially dilutive deals to avoid a vote.

4.2 Acquirer Investors' Horizon

Since deal synergies are difficult to estimate, realized only in the longer term, and likely to be imperfectly reflected in the acquirer's stock price at deal announcement, the short-term or immediate EPS impact of a deal is most likely to matter when shareholders are more myopic. We next examine whether acquirers that are largely held by short-term investors are more sensitive to EPS dilution (Hypothesis 5 (i)). We measure the acquirer's short-term ownership using the weighted average institutional investors' churn rate³³ two quarters before the deal announcement. As illustrated in Table 9, when its institutional investors have a higher churn rate, the acquirer is more likely to announce a slightly accretive rather than slightly dilutive stock deal in the sample with $x_1 \leq x_2$. Moreover, we also

³³ Following Gaspar, Massa, and Matos (2005), Yan and Zhang (2009) among others, we first calculate each institutional investor's quarterly churn rate from their portfolio positions. Next, we calculate a four-quarter moving-average churn rate for each quarter-institution. Last, we aggregate the moving-average churn rate of all the institutions holding one stock, using their ownership in that stock as the weight.

find that acquirers with higher investor churn rate are more likely to make accretive rather than dilutive deals in the larger samples of 1) stock deals with $x_1 \leq x_2$ and 2) all-stock deals.

4.3 CEO Compensation with EPS as Vesting Hurdles

Several authors have argued that short-term performance measures such as EPS are over-emphasized in CEO compensation structure and distort managerial incentives (e.g., Cheng, Harford, and Zhang (2015) and Bennett et al. (2017)). We examine whether having EPS as a performance metric in a CEO's incentive plan affects the method of payment and deal outcomes (Hypothesis 5 (ii)). We match the acquirers in our sample of mergers to Incentive Lab data, which collects information on the performance metrics of incentive plans granted to top managers of large US public firms. We restrict our attention to the deals after 2006, since the disclosure of performance metrics in compensation is more complete since 2006. To measure how much the CEOs care about EPS due to their compensation package, we calculate the value of unvested incentive plans with EPS as one of the performance metrics at the time of deal announcement. The value of unvested compensation is scaled by the three-year average salary for the CEO. Limited by the coverage of Incentive Lab and the more recent sample period, we end up with a much smaller sample of deals with available data on acquirer managers' compensation. In the first four columns of Table 10, we find that the higher is the value of unvested compensation directly linked to EPS, the more likely a deal is paid with cash. To validate our hypothesis, we also calculate the value of unvested compensation linked to total earnings (such as earnings, EBT, EBITDA, etc.). The measures on total earnings should reflect the same economic rationale as EPS, except that they do not punish the new share issuance as in a stock merger. We find that CEO compensation linked to total earnings does not have a significant impact on the method of payment in mergers.

Next, we test whether linking payment to EPS affects the likelihood of making accretive deals in the sample of stock and mixed deals. In the last four columns of Table 10, we find that the higher is the value of unvested compensation linked to EPS, the more likely is the acquirer to make an accretive deal. Again, the unvested compensation linked to total earnings is insignificant.

Overall, the results in this section suggest that even when acquirer CEOs know that EPS should not influence their merger decisions, there are circumstances when the EPS impact cannot be ignored. Regardless of the underlying reason for shareholders to focus on EPS, the evidence presented here confirms the impression given from merger advisor behavior and merger announcement press releases; shareholders focus on EPS, and this creates powerful incentives for managers to present accretive deals. For example, when shareholder voting support is required, the EPS impact of a deal becomes extremely important. External incentives created by short-term-focused shareholders or internal incentives from their own compensation plan can also force managers to consider EPS effects, and when they do so, what should otherwise be a straightforward investment decision is likely to be distorted.

V. Conclusion

Merger announcements are very often accompanied by discussions of the impact of the deal on the acquirer's EPS. We show that this reflects the shareholders' and management's focus on whether the deal will be EPS-accretive. This focus not only affects how deals are paid for, but also the acquisition premium, and the types of deals that occur. We find that acquirers' EPS-sensitivity is related to short-termism of its shareholders as well as the inclusion of EPS as a performance metric in the CEO's compensation contract. Our results do not imply that EPS accretion is the primary driver of mergers; indeed, many dilutive deals are proposed and completed. Rather, we show that while efficiency would require that the NPV of the acquisition, as determined by the total synergies created and the split between the acquirer and target, should be the only consideration in determining which deals get done, the EPS impact of the deal is also an important factor, and this factor distorts merger decisions.

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Figure 1: Time trend of cash (stock) deals and pseudo-dilutive (accretive) deals

Subfigure (a) shows the fraction of cash deals together with the fraction of deals with $P_CH_EPS < 0$ announced in each calendar year. Subfigure (b) shows the fraction stock deals together with the fraction of deals with $P_CH_EPS \geq 0$. The sample contains only the completed deals with positive EPS for both acquirer and target.

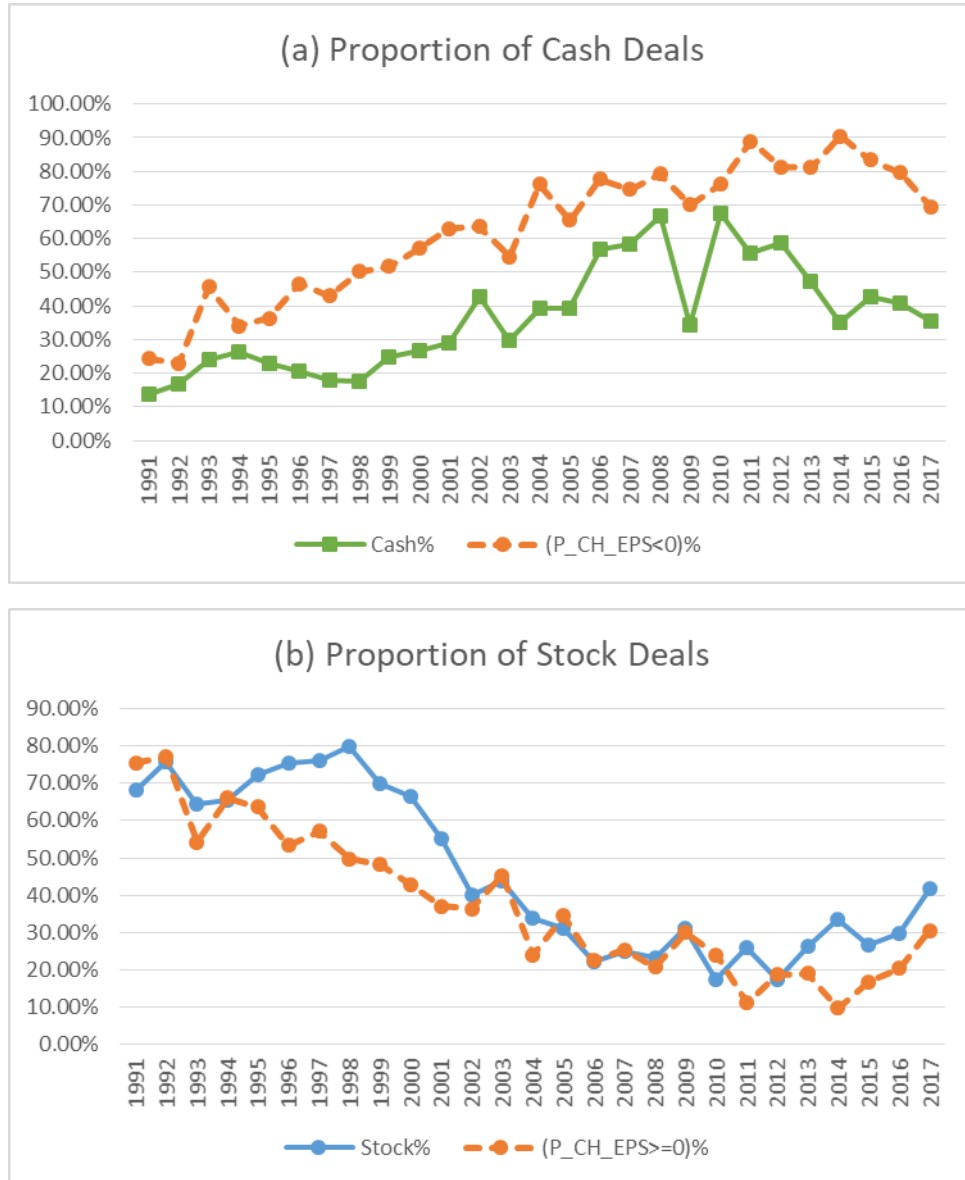


Figure 2: Distribution of pseudo change in EPS for cash deals

Subfigure (a) shows the local-polynomial density estimation (Cattaneo, Jansson, and Ma (2019)) of P_CH_EPS from both sides of zero (using the unrestricted model with up to 3rd order polynomial terms) among the completed cash deals. We choose the optimal bandwidths for both sides following Cattaneo, Jansson, and Ma (2019), which are reported in the figure subtitle. The shaded area indicates 95% confidence interval using jackknife standard error. The subtitle also reports the robust (bias-corrected) p-value of the difference between the left and right densities around zero. In subfigure (b), we report the histogram of P_CH_EPS using the optimal bin size following Bollen and Pool (2009), and fit a smooth density function. Subfigure (c) reports the t-statistic for the difference between the actual numbers of observations in each bin and the estimated number of observations from the smooth density in (b). The dashed lines indicate the 95% confidence interval for the t-statistic. P_CH_EPS is winsorized at 1 percentile on both sides. (b) and (c) plot the distribution between the 5th to 95th percentile range.

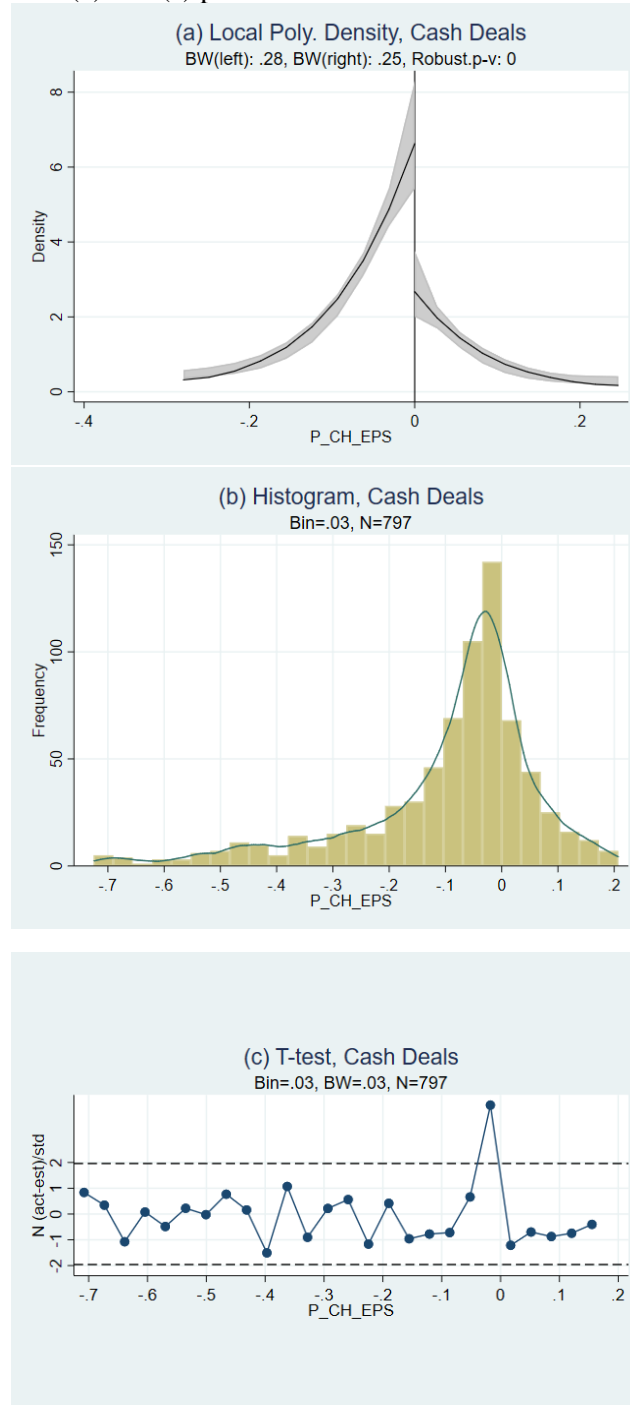


Figure 3: Distribution of pseudo change in EPS for mixed deals

Subfigure (a) shows the local-polynomial density estimation (Cattaneo, Jansson, and Ma (2019)) of P_CH_EPS from both sides of zero (using the unrestricted model with up to 3rd order polynomial terms) among the completed mixed deals. We choose the optimal bandwidths for both sides following Cattaneo, Jansson, and Ma (2019), which are reported in the figure subtitle. The shaded area indicates 95% confidence interval using jackknife standard errors. The subtitle also reports the robust (bias-corrected) p-value of the difference between the left and right densities around zero. In subfigure (b), we report the histogram of P_CH_EPS using the optimal bin size following Bollen and Pool (2009), and fit a smooth density function. Subfigure (c) reports the t-statistic for the difference between the actual numbers of observations in each bin and the estimated number of observations from the smooth density in (b). The dashed lines indicate the 95% confidence interval for the t-statistic. P_CH_EPS is winsorized at 1 percentile on both sides. (b) and (c) plot the distribution between the 5th to 95th percentile range.

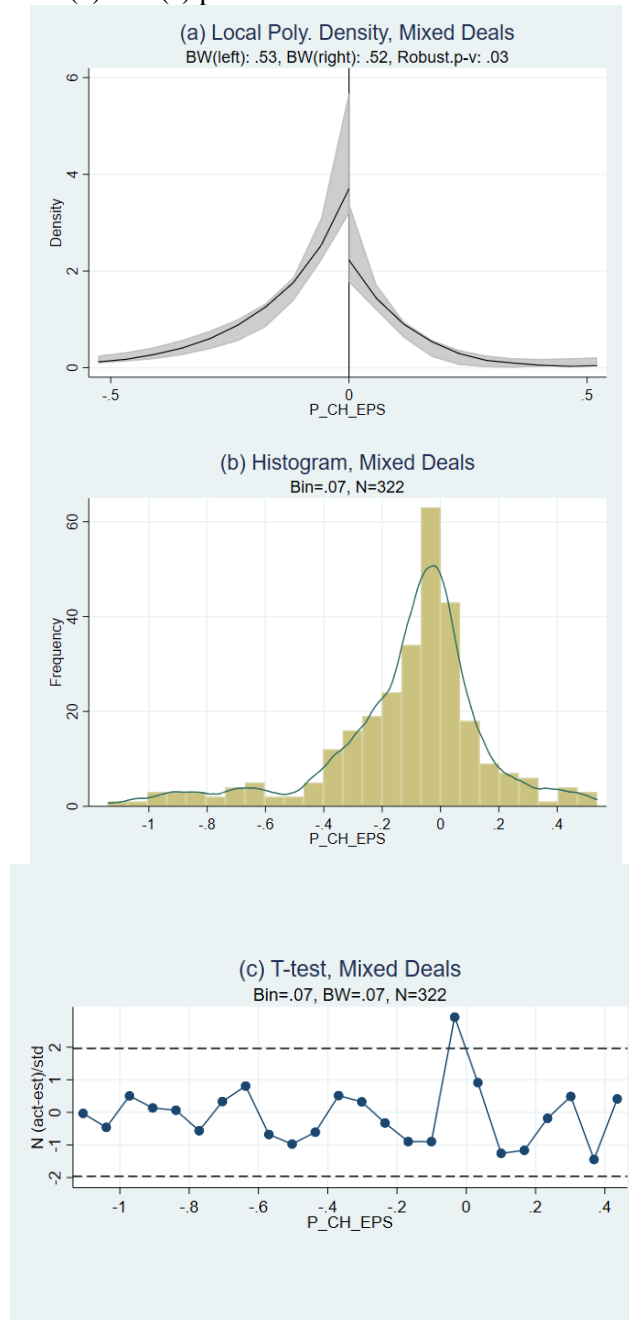


Figure 4: Tendency of paying cash around zero pseudo change in EPS

Subfigure (a) shows the fraction of cash and mixed deals in each bin of P_CH_EPS . Subfigure (b) shows the mean level of fraction of cash in deal consideration in each bin of P_CH_EPS . The figures plot the deals within a narrow neighborhood of zero. The bandwidths are chosen using the mean squared error-optimal rule (Calonico, Cattaneo and Titiunik (2014)) allowing for different bandwidths on two sides of the threshold. Observations are grouped into evenly-spaced bins on both side of zero. The lines are fitted linear functions from both sides of zero using triangular kernel. The sample contains all the completed deals. P_CH_EPS is winsorized at 2.5 percentiles on both sides.

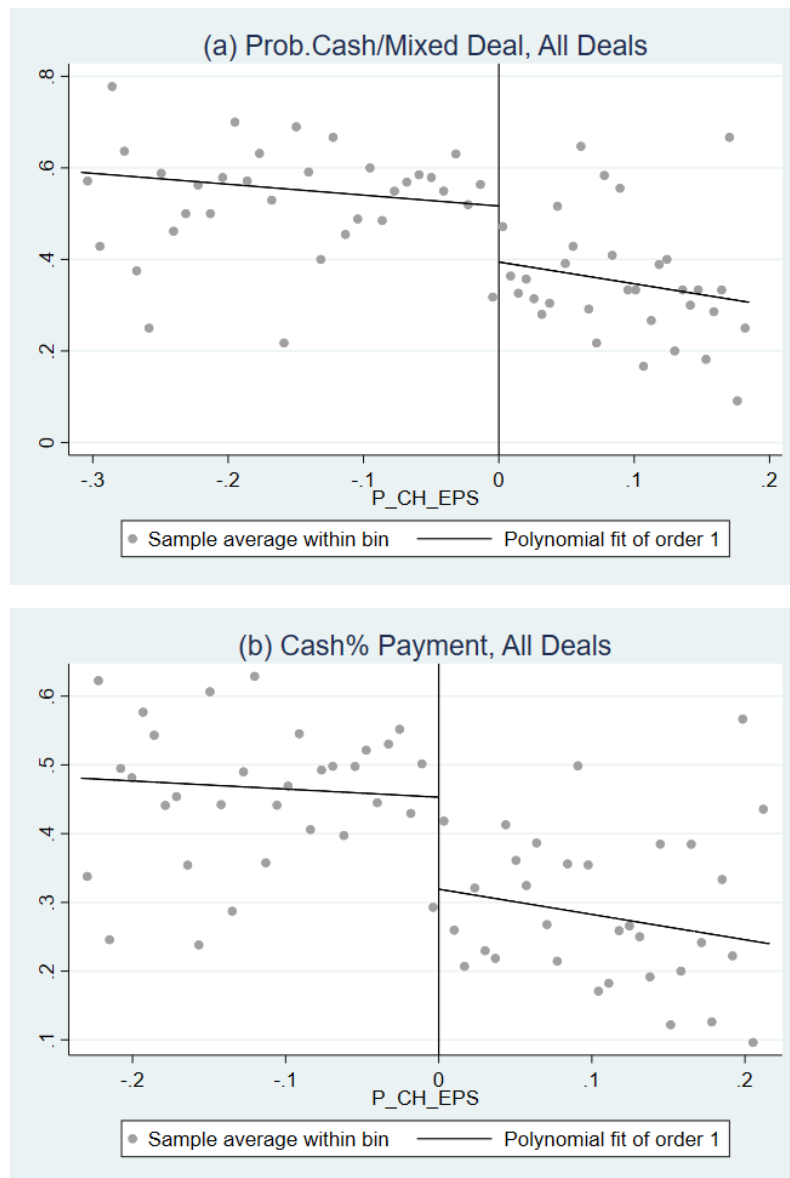


Figure 5: Distribution of change in EPS for stock deals with $x_1 \leq x_2$

Subfigure (a) shows the local-polynomial density estimation (Cattaneo, Jansson, and Ma (2019)) of CH_EPS from both sides of zero (using the unrestricted model with up to 3rd order polynomial terms) among the completed stock deals with $x_1 \leq x_2$. We choose the optimal bandwidths for both sides following Cattaneo, Jansson, and Ma (2019), which are reported in the subtitle. The shaded area indicates 95% confidence interval using jackknife standard errors. The subtitle also reports the robust (bias-corrected) p-value of the difference between the left and right densities around zero. In subfigure (b), we report the histogram of CH_EPS using the optimal bin size following Bollen and Pool (2009), and fit a smooth density function. Subfigure (c) reports the t-statistic for the difference between the actual numbers of observations in each bin and the estimated number of observations from the smooth density in (b). The dashed lines indicate the 95% confidence interval for the t-statistic. CH_EPS is winsorized at 1 percentile on both sides. (b) and (c) plot the distribution between the 1st to 95th percentile range.

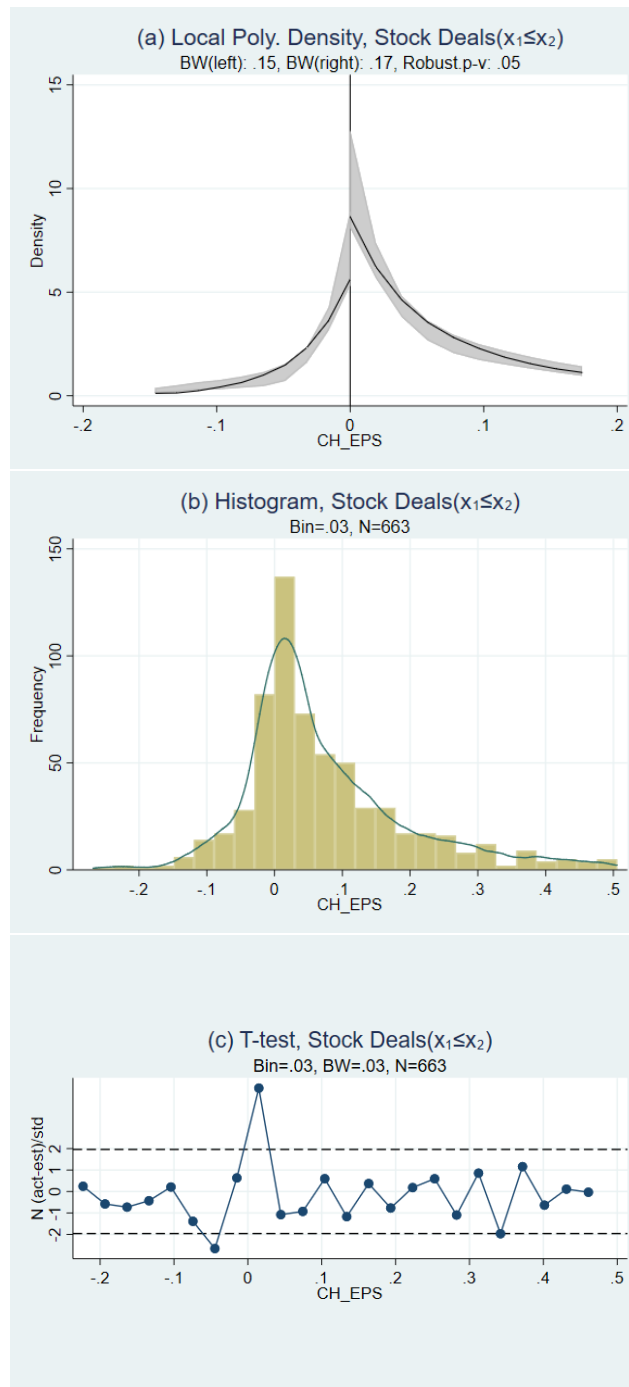


Figure 6: The EPS implications of mixed deals with pseudo change in EPS around zero

This figure shows the mean of CH_EPS (calculated based on the actual exchange ratio) in each bin of P_CH_EPS (calculated based on the pseudo exchange ratio). We focus on the sample of mixed deals with pseudo change in EPS from -0.42 to +0.42. Observations are grouped into evenly spaced bins with bin size of 0.7 (corresponding to Figure 3(b)). The lines are fitted polynomial functions from both sides of zero of P_CH_EPS based on the mean values of each bin.

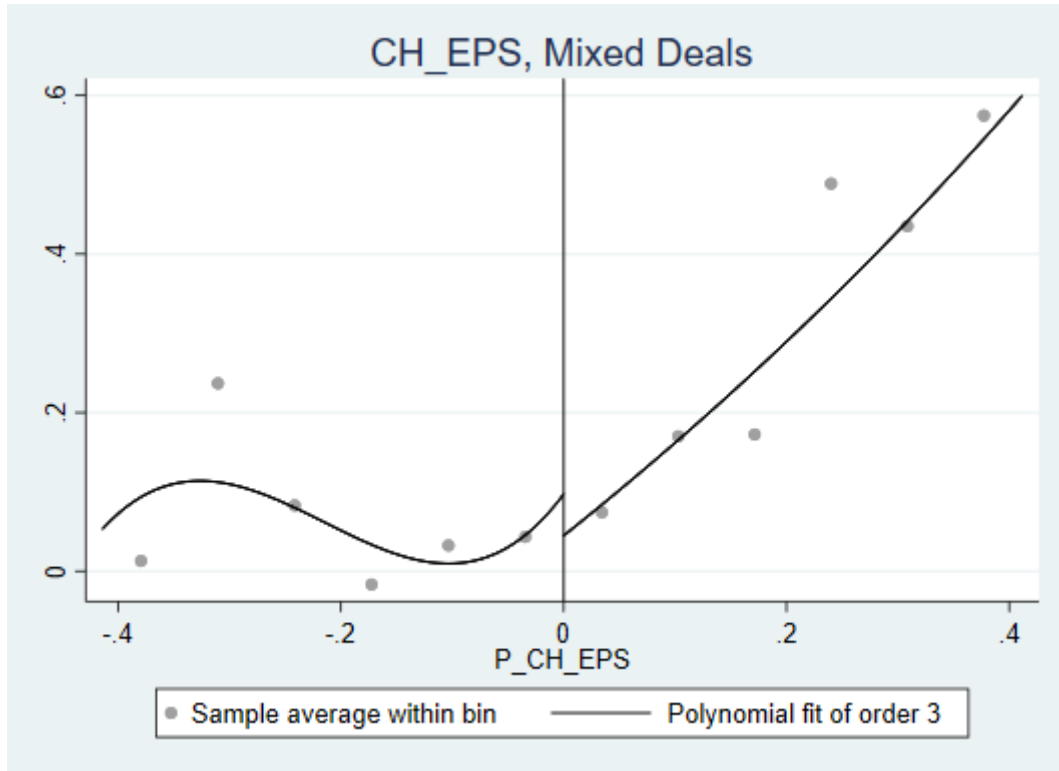


Table 1: Sample Overview

Panel A shows the number and fraction of each type of completed deal associated with different EPS conditions of the target and acquirer. Panel B shows the number and proportion of each type of completed deal associated with different relative relation between x_1 (P_T/P_B) and x_2 (e_T/e_B). The square brackets show the column percentages, while the parentheses report the row percentages.

Panel A:

Deal Type	EPS(Acq)≤0	EPS(Acq)>0, EPS(Tar)≤0	EPS(Acq)>0, EPS(Tar)>0	Missing EPS	Total
Cash	30 [11.07%] (3.50%)	161 [42.59%] (18.79%)	642 [31.32%] (74.91%)	24	857 [30.65%]
Mix	36 [13.28%] (9.86%)	48 [12.70%] (13.15%)	274 [13.37%] (75.07%)	7	365 [13.05%]
Stock	205 [75.65%] (13.02%)	169 [44.71%] (10.74%)	1134 [55.32%] (72.05%)	66	1574 [56.29%]
Total	271 (9.69%)	378 (13.52%)	2050 (73.32%)	97	2796

Panel B:

Deal Type	Both EPS>0, P>0			Missing x_1, x_2	Total
	$x_1 \leq x_2$	$x_1 > x_2$	Total		
Cash	277 (44.39%) [24.43%]	347 (55.61%) [41.26%]	624 [31.59%]	233	857 [30.65%]
Mix	144 (53.53%) [12.70%]	125 (46.47%) [14.86%]	269 [13.62%]	96	365 [13.05%]
Stock	713 (65.90%) [62.87%]	369 (34.10%) [43.88%]	1082 [54.78%]	492	1574 [56.29%]
Total	1134 (57.42%)	841 (42.58%)	1975	821	2796

Table 2: Tendency of paying cash and pseudo dilution

The left panel reports the average marginal effects of Logit regressions for the propensity of cash deals. The right panel reports the coefficients of Tobit regressions for the fraction of cash in deal payments. The main explanatory variable is an indicator for pseudo dilution ($P_CH_EPS < 0$). Control variables include the acquirer's characteristics reflecting its capital structure and deal characteristics (defined in the appendix). Each variable is winsorized at 1% on both sides. Year dummies indicate the calendar year when the deal is announced. Industry dummies indicate the Fama-French 49 industry of the acquirer and target. An intercept is included but not reported. The sample contains the completed merger deals with positive EPS for both the acquirer and target. (The results are robust to the inclusion of negative-EPS deals.) In the left panel, Z-statistics are reported in parenthesis, using the standard error clustered on year or acquirer industry level (when acquirer industry dummies are controlled for). In the right panel, t-statistics are reported in parenthesis, using robust standard errors. *, **, and *** indicate statistical significance at 10%, 5%, and 1% level, respectively.

	Prob. Cash Deal			Cash% in Consideration		
D($P_CH_EPS < 0$)	0.055*** (2.69)	0.056* (1.67)	0.057 (1.58)	0.43*** (3.15)	0.40*** (3.01)	0.40*** (3.07)
ln(At) Acq	-0.015** (-1.98)	-0.0079 (-0.93)	-0.0091 (-1.00)	-0.053 (-1.28)	-0.023 (-0.56)	-0.028 (-0.70)
Book Lev. Acq	-0.023 (-0.26)	-0.066 (-0.91)	-0.048 (-0.63)	-0.31 (-0.69)	-0.35 (-0.75)	-0.22 (-0.47)
MTB Acq	-0.0063 (-1.55)	-0.011** (-2.01)	-0.014** (-2.29)	-0.045** (-2.03)	-0.085*** (-3.75)	-0.094*** (-4.08)
D(Dividend) Acq	-0.053** (-2.31)	-0.025 (-1.13)	-0.016 (-0.77)	-0.51*** (-3.19)	-0.23 (-1.45)	-0.18 (-1.16)
Cash Hold Acq	-0.063 (-1.51)	-0.10 (-1.52)	-0.079 (-1.28)	-0.14 (-0.46)	-0.26 (-0.80)	-0.20 (-0.68)
R&D Acq	-0.15 (-0.75)	-0.53 (-1.47)	-0.55 (-1.59)	-2.20** (-2.00)	-4.51*** (-3.33)	-4.29*** (-3.21)
Tangibility Acq	0.15** (2.36)	0.15** (2.00)	0.18** (2.19)	1.21*** (3.79)	0.91 (1.62)	1.08* (1.87)
DealValue/MktCap	-0.37*** (-8.39)	-0.36*** (-10.22)	-0.36*** (-10.39)	-1.75*** (-6.98)	-1.72*** (-7.05)	-1.69*** (-6.99)
Tender Offer	0.49*** (12.78)	0.42*** (9.82)	0.43*** (9.06)	4.06*** (12.43)	3.55*** (11.55)	3.55*** (11.29)
Same SIC2	-0.062*** (-2.82)	-0.0072 (-0.36)	-0.012 (-0.56)	-0.43*** (-3.17)	-0.045 (-0.31)	-0.12 (-0.80)
Year	YES	YES	YES	YES	YES	YES
Acq Industry	NO	YES	YES	NO	YES	YES
Tar Industry	NO	NO	YES	NO	NO	YES
Observations	1805	1781	1765	1805	1795	1791
Pseudo R-squared	0.357	0.409	0.434	0.268	0.307	0.331

Table 3: Tendency of paying cash round the zero of P_CH_EPS (local RD)

We estimate local linear model with triangular kernel as follows. T_i is an indicator variable taking the value of 1 if $P_CH_EPS=X_i>0$, and 0 otherwise.

$$Y_i = \alpha + \tau \cdot T_i + X_i \cdot \beta_1 + T_i \cdot X_i \cdot \gamma_1 + A \cdot Z_i + \varepsilon_i, \quad (-h_l \leq X_i \leq h_r)$$

We control for the covariates (Z_i) of the target's total assets, book leverage, market-to-book, cash holding, R&D, asset tangibility, deal transaction value relative to acquirer's market capitalization, and the acquirer's book leverage, market-to-book, cash holding, R&D, asset tangibility. We choose bandwidth (h) using the mean squared error-optimal rule (Calonico, Cattaneo and Titiunik (2014)) allowing for different bandwidths on two sides of the threshold. The table below reports robust bias corrected (Calonico, Cattaneo and Titiunik (2014)) point estimation for the RD effect (τ) and z-statistics. The standard errors are clustered on year level using nearest-neighbor method (Abadie and Imbens (2008)). The dependent variable for column (1) and (3) is an indicator for cash deals. The dependent variable for (2), (4), (5) is the fraction of cash as deal payment. In column (1) and (2), the sample includes all the completed deals. Column (3) contains completed cash and stock deals. Column (4) contains the completed mixed deals. Column (5) contains completed stock and mixed deals. P_CH_EPS is winsorized at 2.5% on both sides. *, **, and *** indicate statistical significance at 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)
	Prob. Cash	Cash%	Prob. Cash	Cash%	Cash%
<i>Sample:</i>	<i>All</i>	<i>All</i>	<i>Cash & Stock</i>	<i>Mixed</i>	<i>Stock & Mixed</i>
τ (Robust)	-0.111*	-0.122*	-0.121*	-0.200***	-0.034*
	(-1.744)	(-1.898)	(-1.660)	(-3.707)	(-1.885)
Robust 95% CI	[-.237 ; .014]	[-.249 ; .004]	[-.263 ; .022]	[-.306 ; -.094]	[-.069 ; .001]
Order Loc. Poly.(p)	1	1	1	1	1
Order bias(q)	2	2	2	2	2
BW est.left(h)	0.191	0.233	0.198	0.173	0.253
BW est.right(h)	0.145	0.216	0.144	0.094	0.071
BW bias left (b)	0.367	0.433	0.383	0.366	0.491
BW bias right (b)	0.270	0.437	0.266	0.200	0.171
N.Obs.	2026	2026	1752	274	1373
Eff.N.Obs.left	834	895	744	98	548
Eff.N.Obs.right	470	549	418	43	226

Table 4: Accretion conditions for slightly pseudo-accretive and dilutive deals

Panel A reports the proportion of deals satisfying the accretion condition, which is that the ratio of combined EPS and “repurchase price” exceeds after-tax borrowing costs. The combined EPS is calculated using the pseudo exchange ratio. The “repurchase price” is measured as the acquirer’s stock price one day before/ after deal announcement. The slightly accretive deals are defined as the ones with P_CH_EPS in $(0, +0.05)$, while the slightly dilutive ones have P_CH_EPS in $(-0.05, 0)$. Panel B reports the mean level of the ratio of combined EPS and “repurchase price” minus after-tax borrowing costs. Each variable is winsorized at 1 percentile on both sides. t-tests compare the slightly accretive and dilutive deals for each deal type. *, **, and *** indicate statistical significance at 10%, 5%, and 1% level, respectively.

Panel A: Probability of satisfying accretion condition

	$\frac{EPS(C)/P[t-1,Acq]}{P_CH_EPS} > (1-0.34)E[R]$				$\frac{EPS(C)/P[t+1,Acq]}{P_CH_EPS} > (1-0.34)E[R]$			
	P_CH_EPS		Diff	t-stat	P_CH_EPS		Diff	t-stat
	$(-0.05, 0)$	$(0, +0.05)$			$(-0.05, 0)$	$(0, +0.05)$		
Stock	0.605	0.398	0.207***	(4.067)	0.610	0.409	0.201***	(3.940)
Obs	195	176	371		195	176	371	
Mixed	0.707	0.500	0.207*	(1.765)	0.732	0.467	0.265**	(2.282)
Obs	41	30	71		41	30	71	
Cash	0.734	0.487	0.247***	(3.722)	0.723	0.474	0.249***	(3.748)
Obs	184	76	260		184	76	260	

Panel B: Mean of accretion condition

	$\frac{EPS(Combine)/P[t-1;Acq]}{P_CH_EPS} - (1-0.34)E(R)$				$\frac{EPS(Combine)/P[t+1;Acq]}{P_CH_EPS} - (1-0.34)E(R)$			
	P_CH_EPS		Diff	t-stat	P_CH_EPS		Diff	t-stat
	$(-0.05, 0)$	$(0, +0.05)$			$(-0.05, 0)$	$(0, +0.05)$		
Stock	0.001	-0.015	0.016***	(2.730)	0.002	-0.014	0.016***	(2.673)
Obs	195	176	371		195	176	371	
Mixed	0.005	-0.008	0.012	(0.807)	0.006	-0.007	0.013	(0.878)
Obs	41	30	71		41	30	71	
Cash	0.016	-0.002	0.018***	(3.912)	0.016	-0.002	0.018***	(3.976)
Obs	184	76	260		184	76	260	

Table 5: Tendency of paying cash and pseudo change in EPS: subsample results

This table reports the sub-sample results for Table 2. The specifications resemble the corresponding tables. The same set of control variables as the corresponding tables are included but not reported.

Panel A: 1991-2001

	Prob. Cash Deals			Cash% in Consideration		
D(P_CH_EPS<0)	0.021 (1.56)	0.021 (0.51)	0.016 (0.40)	0.19 (0.59)	0.13 (0.41)	0.082 (0.27)
Control Variables	YES	YES	YES	YES	YES	YES
Year	YES	YES	YES	YES	YES	YES
Acq Industry	NO	YES	YES	NO	YES	YES
Tar Industry	NO	NO	YES	NO	NO	YES

Panel B: 2002-2017

	Prob. Cash Deals			Cash% in Consideration		
D(P_CH_EPS<0)	0.070 (1.47)	0.092** (2.08)	0.078** (2.08)	0.38*** (2.83)	0.40*** (3.20)	0.35*** (2.96)
Control Variables	YES	YES	YES	YES	YES	YES
Year	YES	YES	YES	YES	YES	YES
Acq Industry	NO	YES	YES	NO	YES	YES
Tar Industry	NO	NO	YES	NO	NO	YES

Table 6: Shareholder gains and short-term market reaction to deal announcement

This table reports the coefficients of OLS regressions of cumulative abnormal returns (CAR) around deal announcement. The dependent variable in Panel A is the CAR from 42 trading days before deal announcement till deal completion, and the dependent variable in Panel B is the three-day CAR around deal announcement. The main explanatory variable is an indicator that *CH_EPS* is positive. We control for up to 3rd order polynomial terms of *CH_EPS*. Other control variables include acquirer characteristics and deal characteristics, defined in the appendix. The sample contains all the completed stock deals with $x_1 \leq x_2$. Each variable is winsorized at 1% on both sides. Year dummies indicate the year when deal is announced. Industry dummies indicate the Fama-French 49 industry of the acquirer and target. t-statistics are reported in parenthesis, using the standard error clustered on year or acquirer industry level (when acquirer fixed effects are controlled for). *, **, and *** indicate statistical significance at 10%, 5%, and 1% level, respectively.

Panel A: Shareholder Gains

	CAR [-42, C] Acq		CAR [-42, C] Tar		CAR [-42, C] Combined	
<i>Sample:</i>	<i>Stock Deals ($x_1 \leq x_2$)</i>					
D(CH_EPS >0)	-0.057**	-0.054*	-0.11***	-0.11***	-0.064*	-0.065*
	(-2.10)	(-1.86)	(-3.06)	(-3.15)	(-2.00)	(-1.78)
CH_EPS	0.34***	0.36***	-0.070	-0.039	0.28**	0.32***
	(3.55)	(3.36)	(-0.41)	(-0.22)	(2.58)	(2.72)
CH_EPS ^2	0.25	0.38*	0.67	0.67	0.26	0.35
	(0.97)	(1.71)	(1.52)	(1.35)	(1.00)	(1.48)
CH_EPS ^3	-0.52**	-0.64***	-0.50	-0.47	-0.50**	-0.60***
	(-2.25)	(-3.21)	(-0.87)	(-0.69)	(-2.35)	(-3.36)
ln(At) Acq	0.013	0.012	0.0014	-0.0025	0.0086	0.0074
	(1.05)	(1.07)	(0.17)	(-0.26)	(0.73)	(0.66)
Book Lev. Acq	0.27**	0.23*	-0.027	0.014	0.28**	0.25*
	(2.36)	(1.96)	(-0.20)	(0.11)	(2.40)	(2.02)
MTB Acq	-0.021***	-0.023***	-0.019***	-0.019***	-0.024***	-0.026***
	(-3.75)	(-3.49)	(-2.72)	(-2.76)	(-4.64)	(-3.85)
D(Dividend) Acq	0.0033	-0.013	-0.055	-0.065	0.015	0.0024
	(0.07)	(-0.31)	(-1.06)	(-1.42)	(0.34)	(0.06)
Cash Hold Acq	-0.051	-0.071	-0.046	-0.033	-0.041	-0.042
	(-1.05)	(-1.26)	(-0.72)	(-0.55)	(-1.10)	(-0.99)
R&D Acq	0.63	0.84*	0.10	-0.11	0.62	0.73
	(1.56)	(1.84)	(0.23)	(-0.23)	(1.48)	(1.34)
Tangibility Acq	-0.20*	-0.14	-0.14	0.067	-0.16	-0.078
	(-1.73)	(-0.85)	(-1.03)	(0.49)	(-1.55)	(-0.55)
DealValue/MktCapAcq	-0.11*	-0.12**	-0.17***	-0.17***	0.010	-0.0033
	(-1.82)	(-2.29)	(-4.45)	(-4.28)	(0.20)	(-0.08)
Same SIC2	-0.0034	-0.044	-0.059	-0.10***	-0.030	-0.066**
	(-0.15)	(-1.11)	(-1.61)	(-2.85)	(-1.64)	(-2.24)
Constant	-0.080	-0.027	0.59***	0.63***	-0.0070	0.038
	(-0.65)	(-0.27)	(6.98)	(8.35)	(-0.06)	(0.38)
Year	YES	YES	YES	YES	YES	YES
Acq Ind	YES	YES	YES	YES	YES	YES
Tar Ind	NO	YES	NO	YES	NO	YES
Observations	599	598	605	604	593	592
Adjusted R-squared	0.193	0.207	0.193	0.194	0.204	0.212

Panel B: Short-term Market Reaction

<i>Sample:</i>	CAR [-1, +1] Acquirer		CAR [-1, +1] Target		CAR [-1, +1] Combined	
	<i>Stock Deals ($x_1 \leq x_2$)</i>					
D(CH_EPS>0)	0.015*** (3.78)	0.016*** (3.38)	-0.068** (-2.67)	-0.068*** (-2.83)	0.0039 (0.66)	0.0037 (0.63)
CH_EPS	0.0086 (0.36)	0.0043 (0.19)	-0.031 (-0.38)	-0.040 (-0.48)	-0.013 (-0.49)	-0.012 (-0.41)
CH_EPS ^2	0.0083 (0.17)	0.044 (0.79)	0.17 (0.91)	0.16 (0.84)	0.070 (1.23)	0.10* (1.80)
CH_EPS ^3	0.059 (1.02)	0.035 (0.48)	-0.070 (-0.34)	-0.029 (-0.12)	0.0022 (0.04)	-0.030 (-0.47)
ln(At) Acq	0.00086 (0.36)	0.00073 (0.28)	-0.0015 (-0.28)	-0.0027 (-0.53)	-0.0014 (-0.61)	-0.0017 (-0.85)
Book Lev. Acq	0.065*** (2.82)	0.065** (2.17)	-0.12* (-1.91)	-0.12 (-1.37)	0.048* (1.80)	0.049 (1.38)
MTB Acq	-0.0032** (-2.47)	-0.0030** (-2.11)	0.0022 (0.64)	0.0051 (1.66)	-0.0026* (-1.99)	-0.0021* (-1.69)
D(Dividend) Acq	0.0077 (0.74)	0.012 (1.14)	0.017 (0.81)	0.0075 (0.38)	0.0099 (1.26)	0.011 (1.19)
Cash Hold Acq	-0.0088 (-0.75)	-0.011 (-0.79)	-0.018 (-0.69)	-0.0075 (-0.27)	-0.0074 (-0.52)	-0.0080 (-0.44)
R&D Acq	0.060 (0.76)	0.10 (1.34)	-0.040 (-0.36)	-0.28*** (-2.84)	0.056 (0.66)	0.057 (0.64)
Tangibility Acq	-0.022 (-0.62)	-0.062** (-2.16)	-0.060 (-0.59)	-0.041 (-0.58)	-0.023 (-0.65)	-0.061* (-1.87)
DealValue/MktCapAcq	-0.058*** (-6.14)	-0.058*** (-5.63)	-0.11*** (-4.13)	-0.11*** (-3.73)	0.0013 (0.14)	-0.00091 (-0.09)
Same SIC2	-0.0051 (-0.65)	-0.011 (-1.43)	-0.017 (-0.66)	-0.038 (-1.51)	-0.011 (-1.38)	-0.015* (-2.01)
Constant	-0.030 (-1.34)	-0.024 (-0.93)	0.30*** (4.83)	0.32*** (5.61)	0.012 (0.58)	0.020 (0.94)
Year	YES	YES	YES	YES	YES	YES
Acq Ind	YES	YES	YES	YES	YES	YES
Tar Ind	NO	YES	NO	YES	NO	YES
Observations	599	598	602	601	590	589
Adjusted R-squared	0.221	0.239	0.158	0.184	0.167	0.180

Table 7: Shareholder voting threshold and payment of cash

The table reports coefficients of OLS regressions. The dependent variable is the proportion of cash in deal payment. The main explanatory variable is an indicator that the pseudo share issuance (implied by pseudo exchange ratio) exceeds 20% of the acquirer's shares outstanding. We control for up to 3rd order polynomial terms of the gap between pseudo share issuance percentage and 20%. Other control variables include target characteristics affecting deal premium, and acquirer characteristics affecting the likelihood for shareholder approval (all defined in the appendix). The sample for the left panel includes all deals (including withdrawn deals). The middle (right) panel contains the deals with $P_CH_EPS \geq 0$ ($P_CH_EPS < 0$). Each variable is winsorized at 1% on both sides. Year dummies indicate the year when deal is announced. Industry dummies indicate the Fama-French 49 industry of the acquirer and target. t-statistics are reported in parenthesis, using the standard error clustered on year or acquirer industry level (when acquirer fixed effects are controlled for). *, **, and *** indicate statistical significance at 10%, 5%, and 1% level, respectively.

	<i>Sample:</i>	Cash% Payment							
		<i>All Deals</i>			<i>P_CH_EPS ≥ 0</i>			<i>P_CH_EPS < 0</i>	
D[PS. Share Issue > 20%]	0.072* (1.78)	0.088** (2.08)	0.082 (1.40)	0.083 (1.51)	0.067 (0.77)	0.059 (0.61)	0.061 (1.06)	0.094** (2.31)	0.079* (1.71)
PS. Share Issue %-20%	-0.27 (-1.40)	-0.34 (-1.41)	-0.29 (-0.87)	-0.26 (-0.87)	-0.25 (-0.65)	-0.19 (-0.43)	-0.18 (-0.80)	-0.34 (-1.53)	-0.24 (-0.74)
(PS. Share Issue %-20%)^2	-0.0043 (-0.01)	0.059 (0.14)	-0.011 (-0.02)	-0.065 (-0.12)	0.043 (0.06)	-0.053 (-0.06)	-0.16 (-0.43)	-0.012 (-0.03)	-0.17 (-0.30)
(PS. Share Issue %-20%)^3	0.17 (0.87)	0.15 (0.61)	0.17 (0.47)	0.19 (0.56)	0.11 (0.26)	0.14 (0.25)	0.27 (1.15)	0.20 (0.80)	0.25 (0.78)
ln(At) Tar	-0.096*** (-6.09)	-0.077*** (-4.10)	-0.078*** (-3.32)	-0.077*** (-2.95)	-0.080*** (-3.45)	-0.074*** (-3.13)	-0.11*** (-6.09)	-0.072*** (-3.32)	-0.077*** (-2.53)
Book Lev. Tar	0.026 (0.51)	0.047 (0.51)	0.071 (0.83)	0.096 (1.51)	0.11 (1.16)	0.13 (1.46)	-0.031 (-0.36)	-0.022 (-0.23)	0.014 (0.12)
MTB Tar	-0.010*** (-3.00)	-0.015*** (-5.39)	-0.015*** (-5.75)	-0.014*** (-4.24)	-0.015*** (-2.80)	-0.016*** (-3.56)	-0.0094** (-2.17)	-0.015*** (-4.08)	-0.015*** (-3.97)
Cash Hold Tar	-0.011 (-0.69)	-0.012 (-0.76)	-0.010 (-0.69)	-0.00029 (-0.02)	-0.0036 (-0.14)	0.0090 (0.36)	-0.011 (-0.44)	-0.012 (-0.47)	-0.016 (-0.63)
R&D Tar	0.13* (1.75)	-0.042 (-0.47)	-0.089 (-0.84)	-0.0035 (-0.02)	0.066 (0.62)	-0.096 (-0.94)	0.13 (1.59)	-0.15 (-1.64)	-0.15 (-1.04)
Tangibility Tar	0.11 (1.30)	0.051 (0.52)	0.016 (0.17)	-0.063 (-0.46)	-0.16 (-1.33)	-0.059 (-0.57)	0.23*** (3.22)	0.19* (1.82)	0.10 (0.84)
Same SIC2	-0.091*** (-4.13)	-0.0067 (-0.33)	-0.016 (-0.77)	-0.052** (-2.49)	0.00089 (0.03)	0.0028 (0.12)	-0.12*** (-3.51)	-0.015 (-0.54)	-0.027 (-1.02)

ln(At) Acq	0.078*** (4.96)	0.076*** (7.31)	0.078*** (5.72)	0.059** (2.09)	0.067*** (4.40)	0.064*** (4.09)	0.088*** (5.52)	0.073*** (5.53)	0.079*** (4.21)
Book Lev. Acq	-0.054 (-0.65)	-0.040 (-0.75)	-0.013 (-0.20)	-0.11 (-0.98)	-0.11 (-1.18)	-0.055 (-0.52)	-0.034 (-0.33)	0.039 (0.47)	0.073 (0.85)
MTB Acq	0.0017 (0.85)	-0.0026 (-1.19)	-0.0023 (-0.97)	0.00039 (0.11)	0.00029 (0.10)	-0.000020 (-0.01)	0.0024 (0.91)	-0.0040 (-1.54)	-0.0028 (-0.91)
D(Dividend) Acq	-0.029 (-1.10)	0.047** (2.07)	0.042** (2.26)	-0.018 (-0.50)	-0.022 (-0.75)	-0.022 (-0.52)	-0.045 (-1.44)	0.071** (2.08)	0.059** (2.13)
Cash Hold Acq	-0.023** (-2.44)	-0.0081 (-0.65)	-0.0096 (-0.78)	-0.028** (-2.49)	-0.022** (-2.16)	-0.018 (-0.89)	-0.020 (-1.27)	-0.0091 (-0.41)	-0.010 (-0.80)
R&D Acq	-0.14 (-1.24)	-0.30** (-2.68)	-0.29*** (-2.87)	-0.091 (-0.69)	-0.035 (-0.33)	-0.054 (-0.45)	-0.13 (-0.88)	-0.38*** (-3.17)	-0.35*** (-2.98)
Tangibility Acq	0.12 (1.43)	0.022 (0.22)	0.041 (0.37)	0.13 (0.94)	0.25 (1.49)	0.31** (2.11)	0.11 (1.39)	-0.11 (-1.08)	-0.098 (-0.78)
Constant	0.43*** (7.20)	0.28*** (2.91)	0.29** (2.43)	0.38*** (4.67)	0.28** (2.29)	0.24 (1.57)	0.47*** (6.74)	0.33*** (3.48)	0.34*** (2.71)
Year	YES	YES	YES	YES	YES	YES	YES	YES	YES
Acq Ind	NO	YES	YES	NO	YES	YES	NO	YES	YES
Tar Ind	NO	NO	YES	NO	NO	YES	NO	NO	YES
Observations	2330	2316	2313	858	852	852	1471	1463	1460
Adjusted R-squared	0.248	0.332	0.339	0.199	0.272	0.286	0.267	0.388	0.392

Table 8: Deal completion and EPS dilution

Panel A reports the number and fraction of completed and withdrawn deals among the stock deals in our sample. Accretive (Dilutive) deals are defined as the ones with $CH_EPS \geq 0$ ($CH_EPS < 0$). Deeply dilutive deals are defined as those with CH_EPS in the bottom quartile of CH_EPS . Panel B reports the coefficients of a linear probability model for deal completion. The main explanatory variable is an indicator for EPS dilution. We control for up to 3rd order polynomial terms of CH_EPS . Other control variables include target characteristics affecting deal premium, and acquirer characteristics affecting the tendency for shareholder approval, all defined in the appendix. The sample for the left panel includes all the stock deals (including the withdrawn deals). The middle (right) panel contains the stock deals with share issuance (implied by the exchange ratio) exceeding (below) 20% of acquirer's shares outstanding. Each variable is winsorized at 1% on both sides. Year dummies indicate the year when deal is announced. Industry dummies indicate the Fama-French 49 industry of the acquirer and target. t-statistics are reported in parenthesis, using the standard error clustered on year or acquirer industry level (when acquirer industry fixed effects are controlled for). *, **, and *** indicate statistical significance at 10%, 5%, and 1% level, respectively.

Panel A:

	Accretive	Dilutive	Other	Deeply Dilutive	Total Stock
Withdrawn	66 [9.61%]	94 [11.66%]	100 [8.94%]	60 [16.04%]	160 [10.72%]
Completed	621 [90.39%]	712 [88.34%]	1019 [91.06%]	314 [83.96%]	1333 [89.28%]
Total	687	806	1119	374	1493

Panel B:

<i>Sample:</i>	Probability of Deal Completion								
	<i>All Stock Deals</i>			<i>Stock (Share Issue < 20%)</i>			<i>Stock (Share Issue > 20%)</i>		
D(CH_EPS < 0)	-0.037* (-1.83)	-0.046* (-1.75)	-0.052** (-2.22)	-0.017 (-0.61)	-0.026 (-0.88)	-0.015 (-0.56)	-0.061** (-2.45)	-0.064* (-1.74)	-0.072** (-2.21)
CH_EPS	-0.016 (-0.39)	-0.025 (-0.64)	-0.040 (-1.09)	-0.029 (-0.48)	0.0051 (0.05)	0.087 (0.80)	-0.020 (-0.48)	-0.024 (-0.56)	-0.038 (-0.90)
CH_EPS^2	-0.011 (-0.88)	-0.011 (-1.13)	-0.015 (-1.41)	-0.0021 (-0.18)	0.017 (0.38)	0.046 (1.02)	-0.013 (-1.06)	-0.0100 (-0.87)	-0.015 (-1.27)
CH_EPS^3	0.00055 (0.40)	0.00067 (0.54)	0.0012 (0.90)	0.00083 (0.48)	-0.0011 (-0.24)	-0.0041 (-0.93)	0.00073 (0.51)	0.00052 (0.36)	0.00099 (0.64)
CH_EPS^4	0.00018 (0.70)	0.00018 (0.86)	0.00026 (1.17)	0.00011 (0.43)	-0.00031 (-0.33)	-0.00093 (-0.98)	0.00022 (0.84)	0.00014 (0.58)	0.00025 (0.94)
ln(At) Tar	-0.031*** (-3.74)	-0.031*** (-3.20)	-0.029*** (-3.94)	-0.020* (-1.92)	-0.021* (-1.78)	-0.023 (-1.64)	-0.050*** (-2.99)	-0.059** (-2.37)	-0.051*** (-2.87)

Book Lev. Tar	-0.0056 (-0.09)	0.0095 (0.14)	0.0010 (0.02)	0.039 (0.45)	-0.0053 (-0.08)	-0.0010 (-0.01)	-0.027 (-0.26)	0.025 (0.20)	0.0044 (0.06)
MTB Tar	-0.0093* (-1.84)	-0.0076** (-2.11)	-0.0064 (-1.37)	-0.010** (-2.10)	-0.0042 (-0.82)	-0.0027 (-0.34)	-0.0094 (-1.66)	-0.0088 (-1.54)	-0.0083 (-1.32)
Cash Hold Tar	0.0083 (1.16)	0.0030 (0.39)	0.0040 (0.29)	-0.045* (-2.05)	-0.045** (-2.24)	-0.026 (-0.80)	0.028** (2.74)	0.021** (2.45)	0.015 (1.24)
R&D Tar	0.11 (1.04)	0.21*** (5.32)	0.23** (2.29)	0.25** (2.16)	0.30** (2.41)	0.26 (1.27)	-0.019 (-0.12)	0.093 (1.12)	0.16** (2.48)
Tangibility Tar	0.068 (0.67)	0.042 (0.39)	0.031 (0.40)	-0.079 (-0.45)	-0.051 (-0.33)	-0.016 (-0.08)	0.21* (1.78)	0.15 (1.11)	0.17 (1.34)
Same SIC2	0.034 (1.62)	0.0098 (0.39)	0.024 (0.83)	0.025 (1.23)	-0.0014 (-0.05)	0.024 (0.70)	0.046 (1.53)	0.019 (0.57)	0.020 (0.44)
ln(At) Acq	0.049*** (8.47)	0.042*** (5.10)	0.041*** (6.17)	0.052*** (4.67)	0.050*** (3.41)	0.051*** (2.94)	0.062*** (4.66)	0.062*** (3.22)	0.055*** (2.95)
Book Lev. Acq	-0.082 (-1.35)	-0.027 (-0.29)	0.016 (0.23)	-0.082 (-0.80)	-0.0020 (-0.02)	0.049 (0.49)	-0.055 (-0.63)	-0.038 (-0.28)	-0.0047 (-0.04)
MTB Acq	0.0041*** (2.86)	0.0039** (2.31)	0.0033* (1.83)	0.0042** (2.30)	0.0022 (1.09)	0.000028 (0.01)	0.0058*** (2.82)	0.0062* (1.82)	0.0065 (1.55)
D(Dividend) Acq	-0.022 (-0.94)	-0.037 (-0.97)	-0.033 (-1.07)	-0.049 (-1.57)	-0.082* (-1.91)	-0.074 (-1.54)	0.0030 (0.10)	-0.0074 (-0.13)	-0.0074 (-0.13)
Cash Hold Acq	0.015 (1.33)	0.0082 (0.93)	0.0067 (0.47)	0.038*** (5.96)	0.033*** (3.40)	0.034** (2.32)	0.0039 (0.19)	-0.0031 (-0.26)	-0.0057 (-0.33)
R&D Acq	-0.0035 (-0.04)	0.075 (0.94)	0.077 (1.37)	-0.052 (-0.60)	0.014 (0.16)	0.028 (0.33)	0.043 (0.31)	0.13 (0.66)	0.12 (0.81)
Tangibility Acq	-0.12 (-1.34)	-0.016 (-0.21)	-0.027 (-0.32)	0.021 (0.16)	0.17 (1.12)	0.14 (0.93)	-0.27** (-2.28)	-0.11 (-0.69)	-0.16 (-1.04)
Constant	0.74*** (22.16)	0.79*** (14.13)	0.77*** (16.62)	0.65*** (7.92)	0.68*** (6.45)	0.64*** (6.45)	0.77*** (13.48)	0.81*** (12.22)	0.81*** (12.14)
Year	YES	YES	YES	YES	YES	YES	YES	YES	YES
Acq Ind	NO	YES	YES	NO	YES	YES	NO	YES	YES
Tar Ind	NO	NO	YES	NO	NO	YES	NO	NO	YES
Observations	1235	1226	1225	513	510	510	722	716	715
Adjusted R-squared	0.076	0.121	0.132	0.112	0.165	0.194	0.074	0.120	0.114

Table 9: Propensity of (slightly) accretive deals and institutional investors' churn rate

This table reports the average marginal effects of Logit regressions for the propensity of (slightly) accretive deals. The left panel contains the stock deals with $x_1 \leq x_2$ and CH_EPS between -0.05 to 0.05. The middle panel uses the sample of stock deals with $x_1 \leq x_2$. The right panel uses the sample of all completed stock deals. The primary explanatory variable is the weighted average churn rate of the acquirer's institutional investors two quarters before the deal announcement. Control variables include the acquirer's characteristics reflecting its capital structure and deal characteristics such as size ratio of the target and acquirer, defined in the appendix. Each variable is winsorized at 1% on both sides. An intercept is included but not reported. Year dummies indicate the calendar year when the deal is announced. Industry dummies indicate the one-digit SIC for the left three columns and the Fama-French 49 industry for the other six columns. Z-statistics are reported in parenthesis, using the standard error clustered on year or acquirer industry level (when acquirer industry dummies are controlled for). *, **, and *** indicate statistical significance at 10%, 5%, and 1% level, respectively.

	<i>Sample:</i>	Slight Accretive			Accretive			Accretive		
		<i>Stock ($x_1 \leq x_2$; Small Ch_EPS)</i>			<i>Stock ($x_1 \leq x_2$)</i>			<i>Completed Stock</i>		
Churn Rate (Acq)		1.28	1.66**	1.74**	1.53**	1.47***	1.50***	1.29**	1.29***	1.26***
		(1.25)	(2.48)	(2.55)	(2.34)	(2.89)	(3.14)	(2.09)	(2.75)	(2.79)
Inst. Own (Acq)		-0.17	-0.15	-0.15*	0.013	-0.053	0.014	0.0020	-0.089	-0.068
		(-0.93)	(-1.63)	(-1.65)	(0.13)	(-0.73)	(0.26)	(0.04)	(-1.32)	(-1.24)
In(At) Acq		-0.011	-0.0053	-0.0097	0.0048	0.011	0.010	0.026***	0.038***	0.036***
		(-0.91)	(-0.26)	(-0.49)	(0.44)	(1.28)	(1.44)	(3.23)	(4.62)	(4.47)
Book Lev. Acq		-0.017	-0.14	-0.16	-0.12	-0.032	-0.15	-0.15*	-0.074	-0.084
		(-0.06)	(-0.46)	(-0.52)	(-1.13)	(-0.25)	(-1.53)	(-1.81)	(-0.58)	(-0.58)
MTB Acq		0.0038	0.0039	0.0043	0.0025	0.0059	0.013*	-0.0032	-0.0043*	-0.0043
		(0.70)	(1.31)	(1.10)	(0.49)	(0.65)	(1.76)	(-1.15)	(-1.67)	(-1.60)
D(Dividend) Acq		-0.096	-0.067	-0.048	-0.11***	-0.11	-0.089	-0.065	-0.034	-0.039
		(-1.30)	(-0.38)	(-0.32)	(-2.93)	(-1.08)	(-0.87)	(-1.63)	(-0.56)	(-0.61)
Cash Hold Acq		0.0012	-0.018	0.0039	0.018	-0.0036	0.012	-0.0056	-0.011	-0.012
		(0.01)	(-0.11)	(0.02)	(0.31)	(-0.05)	(0.14)	(-0.36)	(-0.76)	(-0.71)
R&D Acq		-0.080	-0.17	-0.19	-0.21	-0.0042	-0.32	-0.095	-0.11	-0.081
		(-0.12)	(-0.21)	(-0.25)	(-0.41)	(-0.00)	(-0.30)	(-0.82)	(-0.64)	(-0.43)
Tangibility Acq		0.20	0.49	0.24	0.19*	0.030	-0.45	0.044	-0.034	-0.061
		(1.59)	(0.86)	(0.47)	(1.92)	(0.08)	(-1.10)	(0.57)	(-0.18)	(-0.29)
DealValue/MktCapAcq		-0.19	-0.16	-0.19	-0.011	-0.010	-0.026	0.17***	0.18***	0.18***
		(-1.25)	(-1.19)	(-1.30)	(-0.17)	(-0.29)	(-0.90)	(2.59)	(5.52)	(5.70)
Same SIC2		0.063	0.072	0.058	-0.049	-0.00061	0.035	-0.050	-0.021	0.0029
		(0.93)	(0.82)	(0.85)	(-1.20)	(-0.01)	(0.60)	(-1.59)	(-0.59)	(0.10)

Year	YES	YES	YES	YES	YES	YES	YES	YES	YES
Acq Industry	NO	YES	YES	NO	YES	YES	NO	YES	YES
Tar Industry	NO	NO	YES	NO	NO	YES	NO	NO	YES
Observations	254	253	253	631	571	535	1253	1230	1216
Pseudo R-squared	0.118	0.136	0.160	0.104	0.110	0.144	0.065	0.090	0.109

Table 10: EPS-sensitivity and CEO compensation based on EPS

The left panel reports the average marginal effects of Logit regressions for the propensity of cash deals. The sample contains all the merger deals announced from 2006 to 2016 in our sample with the acquirer firm being covered by the Incentive Lab database. The right panel reports the average marginal effects of Logit regressions for EPS accretion. The sample contains stock and mixed deals with the acquirer being covered by Incentive Lab. The primary explanatory variables are the value of unvested compensation (including cash and equity incentive plans) using EPS (or total Earnings) as one of the vesting hurdles at the deal announcement for the acquirer's CEO. The amount of unvested compensation is scaled by three-year-average salary to gauge its relative importance. Control variables include the acquirer's characteristics reflecting its capital structure and deal characteristics such as size ratio of the target and acquirer, defined in the appendix. Each variable is winsorized at 1% on both sides. Year dummies indicate the calendar year when the deal is announced. Industry dummies indicate the one-digit SIC industry of the acquirer and target. An intercept is included but not reported. Z-statistics are reported in parenthesis, using the standard error clustered on year or acquirer industry level (when acquirer industry dummies are controlled for). *, **, and *** indicate statistical significance at 10%, 5%, and 1% level, respectively.

<i>Sample:</i>	Prob. Cash Deals				Prob. Accretive Deals			
	<i>Completed Deals (2007-2017)</i>				<i>Completed Stock & Mixed (2007-2017)</i>			
Unvest [EPS]/Salary(3yr)	0.011*** (2.66)	0.0094** (2.37)	0.0017** (1.99)	0.00044 (0.32)	0.028*** (3.01)	0.032*** (4.43)	0.027** (2.14)	0.021** (1.97)
Unvest [Earning]/Salary(3yr)	0.0053 (1.11)	-0.00014 (-0.04)	-0.00096 (-0.33)	-0.0022 (-0.77)	0.0038 (0.23)	0.0083 (0.64)	0.0040 (0.27)	0.0077 (0.39)
ln(At) Acq		-0.038* (-1.80)	-0.0082 (-1.02)	-0.0076 (-1.18)		-0.048 (-1.05)	-0.044 (-1.24)	-0.034 (-1.08)
Book Lev. Acq		-0.027 (-0.12)	-0.035 (-0.18)	-0.043 (-0.27)		-0.011 (-0.04)	0.018 (0.08)	-0.0024 (-0.01)
MTB Acq		-0.0097** (-2.30)	-0.011*** (-6.57)	-0.013*** (-10.37)		-0.0065 (-0.64)	-0.0087 (-0.63)	-0.0082 (-0.59)
D(Dividend) Acq		-0.030 (-0.58)	-0.027 (-0.44)	-0.0024 (-0.05)		-0.049 (-0.41)	-0.044 (-0.48)	0.0071 (0.07)
Cash Hold Acq		0.20 (1.12)	0.11 (0.57)	0.041 (0.20)		0.35 (0.55)	0.36 (1.10)	0.73** (2.45)
R&D Acq		1.30** (2.10)	-0.22 (-0.53)	-0.047 (-0.10)		-0.29 (-0.20)	-0.65 (-0.61)	-1.17 (-0.87)
Tangibility Acq		0.21 (1.34)	-0.012 (-0.13)	-0.029 (-0.52)		0.045 (0.18)	-0.038 (-0.10)	0.45 (0.97)
DealValue/MktCapAcq		-0.88*** (-12.76)	-0.73*** (-12.35)	-0.72*** (-11.67)		0.17 (0.83)	0.066 (0.34)	0.15 (0.54)

Same SIC2		0.020 (0.49)	0.022 (0.32)	0.0056 (0.24)		-0.073 (-0.86)	-0.016 (-0.18)	0.035 (0.38)
Year	NO	YES	YES	YES	NO	YES	YES	YES
Acq Ind	NO	NO	YES	YES	NO	NO	YES	YES
Tar Ind	NO	NO	NO	YES	NO	NO	NO	YES
Observations	391	380	380	380	143	135	134	134
Pseudo R-squared	0.015	0.317	0.448	0.498	0.035	0.152	0.185	0.249

Appendix A: Variable Definitions

Variables	Definition
Cash Deals	A merger or acquisition deal where the holders of common stocks in target firm receive only cash from the acquirer.
Stock Deals	A merger or acquisition deal where the holders of common stocks in target firm receive only common stocks from the acquirer.
Mixed Deals	A merger or acquisition deal where the holders of common stocks in target firm receive a combination of cash and stock from the acquirer.
Cash%	Proportion of cash in deal payment. It equals to 1 for pure stock deal, to 0 for pure cash deal, and is between 0 and 1 for mixed deals.
x_1 (or $\frac{p_t}{p_b}$)	The ratio of target's and acquirer's stock price at the end of the day before deal announcement.
x_2 (or $\frac{e_t}{e_b}$)	The ratio of target and acquirer most recent annual forecasted EPS (median value, from I/B/E/S) before deal announcement. When the EPS forecast is missing, it is filled up with the "last-twelve-month EPS" from SDC. When either acquirer or target has negative EPS, x_2 is set as missing.
x	Exchange ratio, the number of shares in the combined company per legacy target share.
x_{ps}	Pseudo exchange ratio, the exchange ratio if the entire deal consideration had been paid in stock. For a cash or mixed deal, it is measured by the ratio of "offer price per share" (dollar value per target common stock) and the acquirer's stock price one day before deal announcement. For a pure stock deal, the pseudo exchange ratio is the same as the exchange ratio.
Combined EPS	Combined EPS of the target and acquirer under pseudo exchange ratio, $\frac{e_t \cdot n + e_b \cdot m}{n \cdot x_{ps} + m}$.
P_CH_EPS	Pseudo change in EPS, the combined EPS under pseudo exchange ratio minus the acquirer's EPS. $P_CH_EPS = \frac{e_t \cdot n + e_b \cdot m}{n \cdot x_{ps} + m} - e_b$.
CH_EPS	Change in EPS, the combined EPS under (actual) exchange ratio minus the acquirer's EPS. $CH_EPS = \frac{e_t \cdot n + e_b \cdot m}{n \cdot x + m} - e_b$.
E(R)	The acquirer's borrowing cost or opportunity cost of forgoing excess cash. If the acquirer is holding excess cash, we assume the opportunity cost of not holding cash is the 3-month treasury-bill rate at deal announcement. If the excess cash does not fully cover the deal value, we assume the uncovered component is financed with debt at the implied interest rate of the acquirer, which is estimated using total interest expenses scaled by lagged total debt. When the acquirer has missing value on the implied interest rate, we fill it up with the median value of firms in the same (Fama-French 49) industry and size quintile. The excess cash holding is defined as the residual term of OLS regression of cash holding on firm characteristics controlling for the industry and year fixed effects following the specification in Pinkowitz, Stulz, and Williamson (2015).

Slightly (pseudo) Accretive	An indicator of deals with (pseudo) change in EPS above zero but below 0.05.
Slightly (pseudo) Dilutive	An indicator of deals with (pseudo) change in EPS below zero but above -0.05.
PS. Share Issue	The pseudo share issuance of a deal as percentage of the acquirer's number of shares outstanding before deal announcement, $\frac{n \cdot x_{ps}}{m}$.
Share Issue	The expected share issuance of a deal as percentage of the acquirer's number of shares outstanding before deal announcement, $\frac{n \cdot x}{m}$.
Deeply Dilutive	An indicator of the deals with <i>CH_EPS</i> in the bottom quartile of <i>CH_EPS</i> among all the pure stock deals. (Table 9)
Ln(AT)	The natural logarithm of total assets.
Book Lev.	The book leverage ratio, the sum of short-term and long-term liability scaled by lagged total assets.
MTB	The market to book ratio of equity.
D(Dividend)	An indicator of the firms paying dividend.
Cash Hold	Cash and equivalents scaled by lagged total assets.
R&D	The R&D expenditure scaled by lagged total assets.
Tangibility	The PPENT scaled by lagged total assets.
Deal Value/ MktCap	The ratio of deal transaction value and the market capitalization of the acquirer before announcement.
Same SIC2	An indicator that the acquirer and target are in the same two-digit-SIC industry.
Tender Offer	An indicator of tender offers.
Churn rate	The weighted average churn rate of institutional investors holding each firm, weighted by the investor's ownership in the firm.
Inst. Own	Percentage of shares owned by institutional investors.
Premium[1week]	The percentage premium of the "offer price per share" relative to the target's stock price one week before deal announcement.
CAR [-1, +1]	The cumulative abnormal return during a three-day event window (from one day before to one day after deal announcement). We estimate the parameters of a market model using the CRSP value-weighted index returns from 253 trading days to 43 trading days before deal announcement. We then compute the daily abnormal return and cumulate over the event window.
CAR [-42, C]	The cumulative abnormal return from 42 trading days before announcement to deal completion. We estimate the parameters of a market model using the CRSP value-weighted index returns from 253 trading days to 43 trading days before deal announcement. We then compute the daily abnormal return and cumulate over the event window.

Unvest [EPS]/ Salary(3yr)	The total value of unvested incentive plans based on EPS (as one of the performance metrics) of the acquirer CEO at deal announcement, scaled by his or her average salary over the past 3 years.
Unvest [Earnings] / Salary(3yr)	The total value of unvested incentive plans based on total earnings (such as EBIT, EBITDA, etc. as one of the performance metrics) of the acquirer CEO at deal announcement, scaled by his or her average salary over the past 3 years.

Appendix B: Discontinuity Test

We use two methods to test whether the distribution of a running variable is discontinuous at certain threshold.

The first method is the test proposed by Cattaneo, Jansson, and Ma (2019), which first estimates the density functions of a running variable from both sides of a (pre-specified) threshold using the local-polynomial technic. We control for up to the 3rd order polynomial terms and choose the optimal bandwidths based on asymptotic mean squared minimization. Different bandwidths on two sides of the threshold are allowed for. Then we test whether the point estimations of the left and right density at the threshold is significantly different from each other. Cattaneo, Jansson, and Ma (2019) provides a robust bias-correction approach, which removes the boundary bias by using a higher-order polynomial in the estimation of the densities and adjusting standard errors accordingly. In each figure of this test, we plot the fitted density functions within the range of bandwidths around threshold. The 95% confidence interval of density is indicated by a shaded area. The bandwidths and the robust p-value is reported in the subtitle of the figure. This test is conducted by using the stata command of *rddensity*. This test is in the same vein of McCary Test (McCary (2008)). Our results are all robust to using McCary test.

The second method assumes a smooth underlying distribution, and tests whether the observed data rejects the null hypothesis that no discontinuity exists. To conduct this test, we first group the running variable into fine bins. We choose the optimal bin size considering the dispersion of the distribution and sample size following Bollen and Pool (2009). We next estimate a smooth density function using Gaussian kernel. Last, we integrate the kernel density along the boundary of each bin to compute the probability that an observation will reside in it. Let p denote this probability and N the total number of observations in a sample. The DeMoivre-Laplace theorem states that the actual number of observations that will reside in the bin is asymptotically normally distributed with mean Np and standard deviation $\sqrt{Np(1-p)}$. We construct a test variable $(K - Np)/\sqrt{Np(1-p)}$, where K is the actual number of observations in each bin. We plot the test variable with respect to (the middle point of) each bin and use dashed lines to mark the 95% confidence interval. This test would indicate any point where the observed distribution rejects the smooth distribution assumption.

Figure B1: Distribution of change in EPS among stock deals

Subfigure (a) shows the local-polynomial density estimations (Cattaneo, Jansson, and Ma (2019)) of CH_EPS from both sides of zero (using the unrestricted model with up to 3rd order polynomial terms) among the completed stock deals. We choose the optimal bandwidths for both sides following Cattaneo, Jansson, and Ma (2019), which are reported in the subtitle. The shadow area indicates 95% confidence interval using jackknife standard errors. The subtitle also reports the robust (bias-corrected) p-value of the difference between the left and right density around zero. In subfigure (b), we report the histogram of CH_EPS using the optimal bin size following Bollen and Pool (2009), and fit a smooth density function. Subfigure (c) reports the t-statistic for the difference between the actual numbers of observations in each bin and the estimated number of observations from the smooth density in (b). The dashed lines indicate the 95% confidence interval for the t-statistic. CH_EPS is winsorized at 2.5 percentile on both sides. (b) and (c) plot the distribution between the 5th to 95th percentile range.

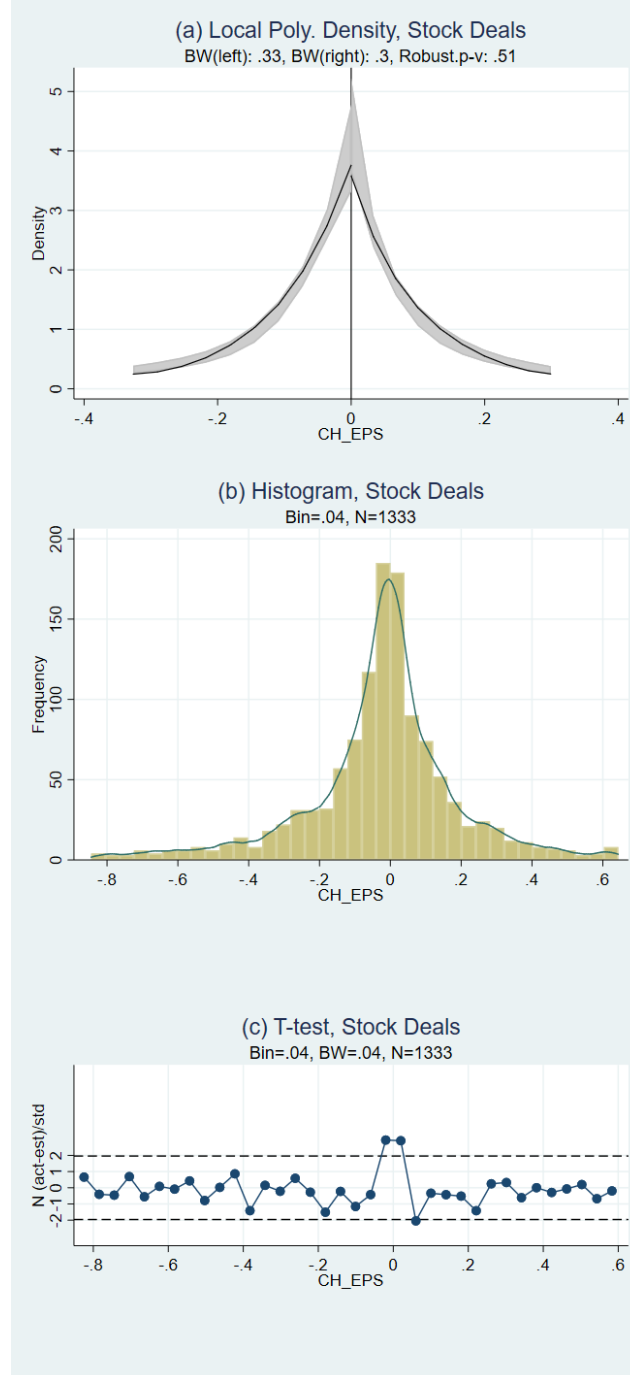


Figure B2: Time trend of cash (stock) deals and deals with $\frac{p_t}{p_b} > \frac{e_t}{e_b}$ ($\frac{p_t}{p_b} \leq \frac{e_t}{e_b}$)

Subfigure (a) shows the fraction of completed cash deals and deals with $\frac{p_t}{p_b} > \frac{e_t}{e_b}$ announced in each calendar year. Subfigure (b) shows the fraction of completed stock deals and deals with $\frac{p_t}{p_b} \leq \frac{e_t}{e_b}$ announced in each calendar year. The sample includes the completed deals with positive EPS for both the acquirer and target.

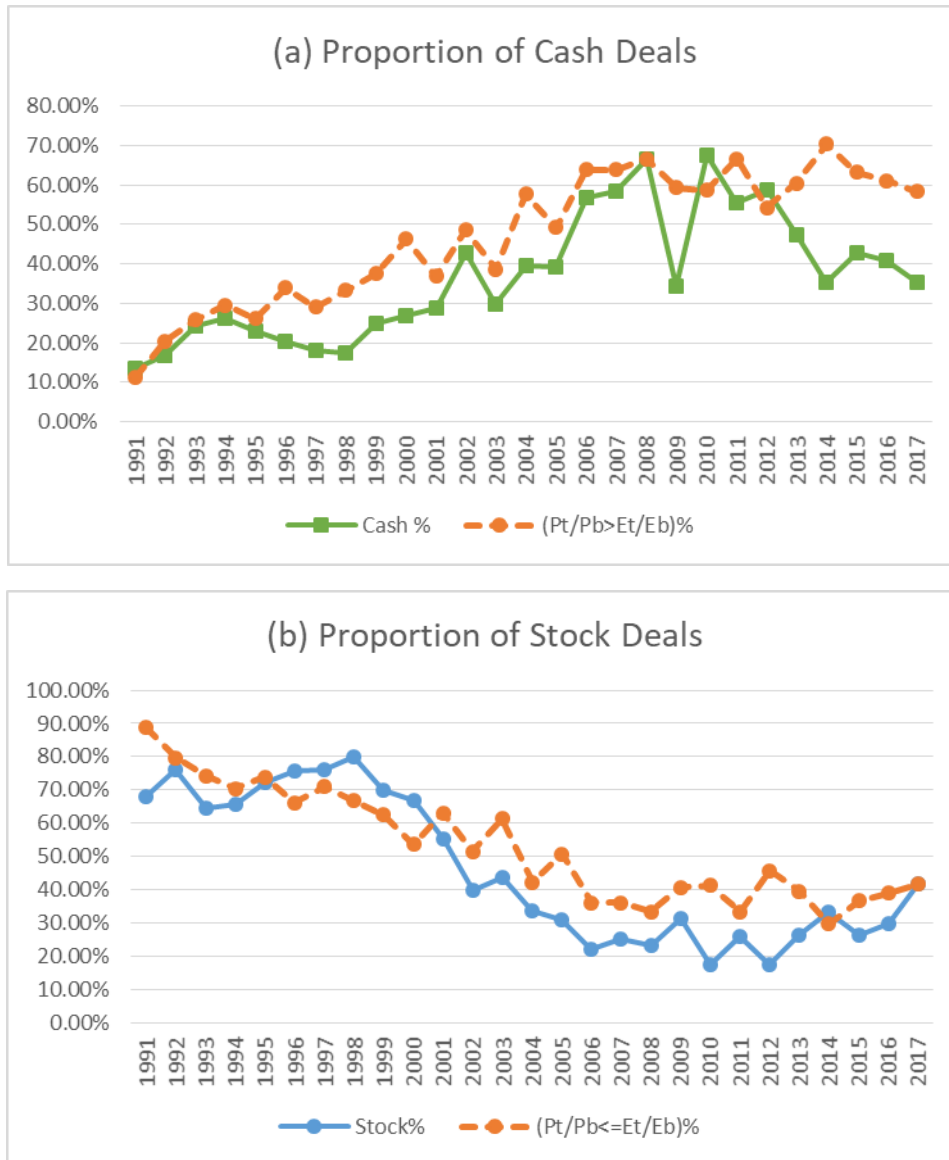


Table B1: Balance test of covariates around zero of P_CH_EPS

Each variable is regressed on P_CH_EPS using the local linear model using triangular kernel. Reported are the estimated RD effect and robust bias-corrected p-value. The bandwidth for estimation is 0.2 and bandwidth for bias correction is 0.5. More details are illustrated in Table 3. P_CH_EPS is winsorized at 2.5. *, **, and *** indicate statistical significance at 10%, 5%, and 1% level, respectively.

	RD Estimate	Robust p-v
AT Tar	-418.620	0.395
Book Lev. Tar	0.007	0.695
MTB Tar	-0.274	0.373
Cash Hold Tar	0.013	0.705
R&D Tar	-0.005	0.783
Tangibility Tar	0.007	0.807
AT Acq	-7387.267*	0.0123
Book Lev. Acq	-0.023	0.0713
MTB Acq	-0.627	0.0793
Cash Hold Acq	-0.065	0.0841
R&D Acq	-0.010	0.176
Tangibility Acq	0.006	0.781
DealValue/MktCapAcq	0.013	0.537
MktCap Tar/Acq	0.007	0.663
AT Ratio(Tar/Acq)	0.009	0.757
Same SIC2	0.039	0.287
Tender Offer	-0.050	0.0814
Premium[1week]	-1.843	0.558
CAR1[42 C]Tar	0.009	0.568

Table B2: Tendency of paying cash and the relative position of x_1 and x_2

The left panel reports the average marginal effects of Logit regressions for the propensity of cash deals. The right panel reports the coefficients of Tobit regressions for the fraction of cash in deal payments. The main explanatory variable is an indicator for x_1 larger than x_2 . Control variables include the acquirer's characteristics reflecting its capital structure and deal characteristics (defined in the appendix). Each variable is winsorized at 1% on both sides. Year dummies indicate the calendar year when the deal is announced. Industry dummies indicate the Fama-French 49 industry of the acquirer and target. An intercept is included but not reported. The sample contains the completed merger deals with positive EPS for both the acquirer and target. In the left panel, Z-statistics are reported in parenthesis, using the standard error clustered on year or acquirer industry level (when acquirer industry dummies are controlled for). In the right panel, t-statistics are reported in parenthesis, using robust standard errors. *, **, and *** indicate statistical significance at 10%, 5%, and 1% level, respectively.

	Prob. Cash Deal			Cash% in Consideration		
D($x_1 > x_2$)	0.051*** (2.85)	0.053** (2.37)	0.055** (2.33)	0.34*** (2.83)	0.33*** (2.87)	0.33*** (2.89)
ln(At) Acq	-0.015** (-2.13)	-0.0075 (-0.88)	-0.0087 (-0.99)	-0.061 (-1.55)	-0.026 (-0.68)	-0.032 (-0.86)
Book Lev. Acq	-0.020 (-0.23)	-0.073 (-0.98)	-0.065 (-0.83)	-0.31 (-0.71)	-0.48 (-1.09)	-0.40 (-0.89)
MTB Acq	-0.0064 (-1.63)	-0.011** (-2.08)	-0.014** (-2.27)	-0.047** (-2.18)	-0.085*** (-3.81)	-0.093*** (-4.08)
D(Dividend) Acq	-0.049** (-2.29)	-0.022 (-0.96)	-0.015 (-0.71)	-0.46*** (-3.05)	-0.21 (-1.35)	-0.16 (-1.10)
Cash Hold Acq	-0.054 (-1.35)	-0.091 (-1.53)	-0.072 (-1.23)	-0.14 (-0.51)	-0.26 (-0.88)	-0.20 (-0.70)
R&D Acq	-0.12 (-0.60)	-0.56 (-1.62)	-0.60* (-1.74)	-1.93* (-1.83)	-4.60*** (-3.48)	-4.51*** (-3.41)
Tangibility Acq	0.14** (2.33)	0.13* (1.69)	0.16* (1.94)	1.14*** (3.81)	0.83 (1.55)	1.00* (1.79)
DealValue/MktCap	-0.36*** (-8.21)	-0.34*** (-9.85)	-0.34*** (-9.61)	-1.58*** (-6.78)	-1.55*** (-6.83)	-1.51*** (-6.75)
Tender Offer	0.48*** (13.02)	0.42*** (9.96)	0.42*** (9.25)	4.01*** (12.78)	3.53*** (11.90)	3.51*** (11.67)
Same SIC2	-0.061*** (-2.86)	-0.0071 (-0.35)	-0.0078 (-0.39)	-0.40*** (-3.07)	-0.0079 (-0.06)	-0.045 (-0.32)
Year	YES	YES	YES	YES	YES	YES
Acq Industry	NO	YES	YES	NO	YES	YES
Tar Industry	NO	NO	YES	NO	NO	YES
Observations	1905	1881	1864	1905	1894	1890
Pseudo R-squared	0.358	0.410	0.434	0.268	0.305	0.327

Table B3: Premium paid in slightly accretive stock deals

This table reports the coefficients of OLS regressions of premium paid in each deal (relative to target price one week before announcement). The primary explanatory variable is an indicator for slight accretion (defined as CH_EPS in the range from 0 to 0.05). The left panel includes the completed stock deals with $x_1 \leq x_2$ and CH_EPS from -0.05 to 0.05. The right panel includes all the completed stock and mixed deals with $x_1 \leq x_2$. The control variables include the acquirer's characteristics reflecting its capital structure and deal characteristics, defined in the appendix. Each variable is winsorized at 1% on both sides. Year dummies indicate the calendar year when the deal is announced. Industry dummies indicate the Fama-French 49 industry of the acquirer and target. t-statistics are reported in parenthesis, using the standard error clustered on year or target industry level (when target industry dummies are controlled for). *, **, and *** indicate statistical significance at 10%, 5%, and 1% level, respectively.

	Premium [-1 Week]					
	<i>Sample:</i>	<i>Stock($x_1 \leq x_2$); Slight Change</i>			<i>Stock & Mixed ($x_1 \leq x_2$)</i>	
D(Slightly Acc.)	-0.082*	-0.067*	-0.046	-0.050**	-0.055	-0.057
	(-1.91)	(-1.91)	(-0.77)	(-2.68)	(-1.22)	(-1.14)
D(Mixed)				0.033	0.032	0.030
				(1.03)	(1.02)	(0.89)
D(Slightly Acc.)*D(Mixed)				0.11*	0.090**	0.086*
				(1.88)	(2.16)	(1.96)
P_CH_EPS	-0.64	-0.88*	-0.85*	-0.19***	-0.20***	-0.18***
	(-0.83)	(-1.87)	(-1.94)	(-4.25)	(-3.40)	(-3.01)
ln(At) Tar	-0.022**	-0.016	-0.020**	-0.0061	-0.0079	-0.0078
	(-2.45)	(-1.13)	(-2.62)	(-0.94)	(-1.15)	(-1.00)
Book Lev. Tar	-0.18*	-0.12	-0.21*	-0.11*	-0.071	-0.100
	(-1.81)	(-1.61)	(-1.82)	(-1.76)	(-1.01)	(-1.32)
MTB Tar	0.014*	0.014	0.0032	0.0072	0.0060	0.0064
	(1.96)	(1.08)	(0.35)	(1.57)	(0.86)	(0.93)
Cash Hold Tar	-0.078	-0.073	-0.14*	-0.050*	-0.031	-0.044
	(-1.30)	(-1.37)	(-1.91)	(-1.86)	(-0.86)	(-1.27)
R&D Tar	-0.055	-0.13	-0.24	0.046	-0.17	-0.18
	(-0.19)	(-0.61)	(-0.80)	(0.28)	(-1.15)	(-1.05)
Tangibility Tar	0.081	0.16	0.052	-0.097**	-0.015	-0.017
	(1.06)	(0.74)	(0.22)	(-2.33)	(-0.12)	(-0.15)
DealValue/MktCapAcq	-0.078	-0.093	-0.084	0.0021	0.014	0.0026
	(-1.24)	(-1.23)	(-0.79)	(0.05)	(0.57)	(0.08)
Same SIC2	-0.12**	-0.11	-0.11*	-0.031	-0.042	-0.029
	(-2.39)	(-1.18)	(-1.87)	(-1.68)	(-1.51)	(-1.08)
Constant	0.64***	0.57***	0.65***	0.44***	0.44***	0.44***
	(8.31)	(4.44)	(5.98)	(9.96)	(7.73)	(7.14)
Year	YES	YES	YES	YES	YES	YES
Acq Ind	NO	YES	YES	NO	YES	YES
Tar Ind	NO	NO	YES	NO	NO	YES
Observations	232	232	232	647	645	644
Adjusted R-squared	0.220	0.238	0.330	0.128	0.132	0.130