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Earnings management by acquiring firms in cash mergers

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We examine earnings management by cash bidders with debt financing. We hypothesise and find that highly leveraged cash bidders seeking to fund bids with debt manage earnings in the pre-merger period to secure the funding with better terms. Leverage plays a key role in this setting because we expect more leveraged bidders to find it more difficult to obtain the necessary funds with good lending terms to carry-out the bid, which increases their incentives to manage earnings. We consider earnings management through classification shifting and accruals, and find that classification shifting is more prevalent when managers appear to be constrained in their ability to manage accruals. Additionally, we find evidence that greater earnings management is associated with lower interest rates, larger debt amounts, and fewer financial covenants. This suggests that pre-merger earnings management efforts by highly leveraged cash bidders appear to be successful in securing debt funds with better terms. Whereas prior research on earnings management by bidders focuses primarily on stock bidders, we extend this research to cash bidders; we highlight that highly leveraged debt-financed bidders also engage in opaque financial reporting decisions prior to the bid announcement.

Keywords: Cash bidders; mergers and acquisitions; leverage; classification shifting; accruals earnings management

JEL Classification: M40; M41; G21; G34

1. Introduction

The accounting literature suggests that mergers and acquisitions (M&A) is a fruitful setting for earnings management and it provides evidence that stock acquirers manage earnings in the period prior to the bid announcement to temporarily inflate their share prices, thereby reducing the cost of buying target firms (Erickson and Wang 1999, Botsari and Meeks 2008, Higgins 2013,

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Lehmann 2016). While these studies are significant, they pay limited attention to cash acquirers, implicitly assuming that these bidders do not engage in earnings management. Nevertheless, cash mergers are prevalent (eg Meng and Vijh 2021), and debt financing represents a significant source for funding cash bids (eg Bharadwaj and Shivdasani 2003, Fischer 2017). Although prior research shows that accounting information plays a key role in debt contracts (Li 2010, Dyreng et al. 2017), it is still an open research question whether cash bidders using debt to finance their bids manage earnings to influence the perceptions of debt providers. Our study attempts to fill this gap.

Specifically, we investigate whether debt-financed cash bidders manage earnings prior to the bid announcement if they have high levels of leverage. Leverage plays a key role in our examination because potential lenders tend to consider highly leveraged firms as riskier borrowers, which makes it more difficult for these firms to raise additional debt with favourable terms.¹ Debt providers typically charge higher interest rates and impose tighter non-price terms, when the lending risk is higher (Kim et al. 2011, Chen et al. 2016a). We expect this increases highly leveraged borrowers' incentives to manage earnings in order to signal to lenders that they are still able to generate high profits and that their projects are of high quality. Prior research shows that firms reporting higher profits obtain new debt at better terms (Hasan et al. 2012, Chen et al. 2016a) and this is more pronounced in firms with higher default risk (Jiang 2008, Kitagawa and Shuto 2021). We therefore predict that highly leveraged debt-financed bidders use earnings management in the pre-merger year in the hope of obtaining the necessary funds at favourable terms.

However, it is not clear *ex-ante* whether on average highly leveraged debt-financed cash bidders would manage earnings prior to bid announcements. Debt providers are sophisticated users who can see through managerial opportunism, which in turn increases managers' incentives to report higher quality financial information that may enhance the probability of obtaining the required debt funds with better terms. In support of this, several studies demonstrate that high earnings quality and conditional conservatism lead to better debt contract terms (Bharath et al. 2008, Zhang 2008, Gormley et al. 2012, García Lara et al. 2016). Furthermore, as leverage increases firms' credit risk, it is likely to prompt existing lenders to exercise close monitoring of borrowers' financial statements to continuously assess firms' credit risk and mitigate managerial wealth expropriation (Rodríguez-Pérez and Van Hemmen 2010, Anagnostopoulou and Tsekrekos 2017). Therefore, to the extent that borrowers' leverage increases monitoring by lenders, highly leveraged debt-financed cash bidders will have fewer opportunities to engage in earnings management prior to raising additional debt. Consequently, whether highly leveraged borrowers in an M&A setting manage earnings is a useful open research question and we argue that some highly leveraged debt-financed bidders find themselves better off with earnings management.

To address this research question, we consider two earnings management practices – *classification shifting* and *accruals-based earnings management*. We focus on these methods because they are likely to be viable practices for debt-financed cash acquirers to employ prior to bid announcements, given that creditors usually base their lending decisions on firms' core earnings and operating performance (Li 2010, Dyreng et al. 2017, Fan et al. 2019). We measure classification shifting via income-decreasing special items, and accruals-based earnings management via discretionary working capital accruals in accordance with extant research (eg Dechow et al. 1995, McVay 2006). We analyse 2,178 debt-financed cash deals over the period 2000–2019.

¹Favourable terms comprise both pricing elements (interest rates) and non-pricing elements (ie debt amounts, restrictive covenants) of the debt contracts.

We find that highly leveraged debt-financed cash bidders use more classification shifting and accruals-based earnings management in the pre-merger year than their low leveraged debt-financed counterparts do. This evidence supports our prediction that riskier debt-financed cash bidders (in our case highly leveraged) have incentives to manage their earnings with the hope of increasing their chance of obtaining the necessary funds with better lending terms. Our baseline result is robust to alternative methods of measuring classification shifting and accruals-based earnings management and to controlling for corporate governance.

We then perform two sets of analyses to deal with potential endogeneity concerns. First, we include matched non-M&A firms that issue debt, or cash acquirers that do not issue debt, as a control group in our main analysis to better identify casual effects. These tests suggest that our baseline finding is attributable to earnings management incentives by debt-financed cash bidders rather than simply by all firms that issue debt, or by all firms that engage in M&As. Second, we employ propensity score matching to mitigate the concern that there might be some unobserved characteristics that affect both leverage and the use of earnings management. Using the matched sample, we find that our baseline finding remains unchanged.

Given that our baseline result suggests both classification shifting and, to some extent, accruals earnings management appear to be viable practices for highly leveraged debt-financed cash bidders, we further investigate how these bidders decide between the two. We argue and find that these cash bidders tend to use classification shifting rather than accruals earnings management when they appear to be constrained from using the latter. This result is consistent with the evidence that firms with limited flexibility to use accruals earnings management shift to other methods (Zang 2012).

Finally, since our baseline result is based on the assumption that highly leveraged debt-financed bidders manage earnings to intentionally influence the perception of debt providers, we examine whether pre-merger earnings management efforts by these bidders actually lead to obtaining the necessary debt funds with better terms. We find some evidence that greater earnings management is associated with lower interest rates, larger debt amounts, and fewer financial covenants. This evidence suggests that pre-merger earnings management efforts by highly leveraged cash bidders appear to be successful in securing debt funds with better terms.

This paper contributes to the literature in several respects. First, we extend the earnings management and M&A literature by providing evidence that not only stock bidders (eg Erickson and Wang 1999, Botsari and Meeks 2008, Higgins 2013, Lehmann 2016) but also highly leveraged debt-financed cash bidders engage in opaque financial reporting decisions prior to a merger announcement. This result provides new insights into earnings management in M&A as prior studies imply that earnings management in this setting is restricted to stock bidders. Second, we extend the growing literature on classification shifting (eg McVay 2006, Athanasakou et al. 2009, Haw et al. 2011, Liu and Wu 2021, Anagnostopoulou and Malikov 2023) by providing evidence that highly leveraged debt-financed bidders have incentives to engage in this practice. Prior studies examine the use of classification shifting in the context of, for example, meeting or beating earnings benchmarks, or IPOs. In this study, we document the existence of classification shifting in the M&A setting. Finally, we extend the literature by providing evidence about how firms decide to use classification shifting or accruals earnings management in a new setting. Indeed, in contrast to prior research (Abernathy et al. 2014), we investigate the decision to use these earnings management methods in a setting where firms, arguably, have *ex-ante* incentives to increase earnings to influence the perceptions of debt providers to obtain debt financing with better terms.

The remainder of the paper is organised as follows. Section 2 reviews the related literature and develops the main research hypothesis. Section 3 presents the research design and discusses the data and sample selection. Section 4 reports the empirical results and Section 5 concludes.

2. Literature review and research hypothesis

2.1. Earnings management in M&A

In general, firms fund their M&A either through cash (from cash reserves or borrowing) or by issuing new stock. Extant studies have extensively investigated the determinants of this choice. For instance, highly leveraged firms are more likely to fund their bids through stock instead of issuing new debt, while large firms and those with significant tangible assets are more able to secure the required debt at favourable terms and, therefore, fund their bids by issuing new debt (Myers 1977, Faccio and Masulis 2005). Furthermore, acquirers with high levels of private information are more likely to use cash instead of stock, and they are more likely to use stock to acquire targets with high levels of private information (Bugeja et al. 2019).

Prior studies contend that the payment method used for the bid can influence a firm's motivation to engage in earnings management. These studies are driven by the argument that stock swap acquirers have incentives to increase earnings in the period prior to the merger announcement, as higher earnings lead to higher stock prices, which in turn reduces the cost of buying a target. To test this argument, using a sample of 55 US stock swap deals, Erickson and Wang (1999) find that acquirers employ accruals earnings management to increase earnings prior to a share-for-share bid. In a similar vein, Louis (2004) documents that US-based acquirers overstate their earnings in the quarter preceding a stock swap announcement.²

Several studies also test whether stock-financed acquirers outside the US engage in accruals earnings management in the pre-acquisition year. Botsari and Meeks (2008) use a sample of 42 UK stock-financed acquisitions and find that acquirers employ accruals earnings management prior to a share-to-share bid. Higgins (2013) finds similar results for Japanese stock swap acquirers. Subsequent studies extend the research in this area by showing that the use of accruals earnings management by stock swap acquirers is more pronounced ahead of a bid during a stock market and merger boom (Botsari and Meeks 2018) or when a firm has strong corporate governance (Lehmann 2016). While these studies examine stock bidders' opaque financial reporting decisions by focusing on accruals earnings management, Farooqi et al. (2017) investigate this issue by focusing on real earnings management. Their findings indicate that stock acquirers employ not only accruals earnings management but also real earnings management prior to bid announcements.

In summary, existing studies focus on stock swap deals to investigate earnings management in the context of M&A, and they implicitly assume that cash bidders do not have incentives to manage earnings. However, we argue that cash bidders are not homogenous and that, while some cash bidders fund their deals internally, the majority secure the required funds by debt-financing. For instance, Fischer (2017) finds that the majority of acquisition transactions (64.55%) are financed through bank loans (57.08%) or debt issuance (7.47%), against much fewer (9.21%) financed by issuing shares and the remainder of bidders (26.24%) using their cash reserves. Given that accounting information is equally important to both equity and debt markets (Li 2010, Wu and Zhang 2014, Dyreng et al. 2017), debt-financed cash acquirers could be equally or even more motivated to manage earnings to influence the perceptions of debt providers in order to obtain the necessary funds at favourable terms. On the other hand, debt-financed bidders may perceive some lenders as sophisticated users able to demarcate their opportunistic financial reporting decisions. That is, it can be argued that fear of lender detection constrains earnings management by debt-financed bidders. Whether these bidders engage in earnings management remains unknown; thus, it is worth investigating.

²Unlike these studies, using US-based acquisitions, Heron and Lie (2002) and Pungaliya and Vijh (2009) show evidence that stock-swap-acquiring firms do not engage in accruals management in the period prior to the merger announcement.

Furthermore, earnings management studies in the context of M&A pay significant attention to accruals earnings management, with limited attention to classification shifting. Unlike accruals earnings management, classification shifting does not change bottom-line earnings, but rather inflates core earnings by misclassifying some core operating expenses as special items (eg McVay 2006, Barua et al. 2010, Fan et al. 2010, Athanasakou et al. 2011, Alfonso et al. 2015, Nagar and Sen 2016). Since the debt market pays more attention to non-GAAP earnings, and often removes special items that are not indicative of firms' future core profitability when formulating a debt contract³ (Li 2010, Malikov et al. 2019), classification shifting could be at least as attractive as accruals earnings management for debt-financed bidders to influence lenders' decisions. As such, unlike prior studies in the M&A setting, we consider both accruals earnings management and classification shifting in investigating our research question.

2.2. Research hypothesis

Debt providers analyse borrowers' creditworthiness and default risk when they face the decision to initiate a debt contract. They use a price contract term (that is, interest rate) and non-price contract terms, such as loan size and restrictive financial covenants, to compensate themselves from the borrower's potential default risk (Kim et al. 2011, Chen et al. 2016a). The inclusion of such non-price terms is as important as that of a price term because they help debt providers monitor credit quality more closely subsequent to initiation of the debt. For example, breaching debt covenants gives creditors the option to modify interest rates, restrict capital spending, or accelerate the debt payment schedule, making it costly for borrowers (Nini et al. 2012).

The rendering of price or non-price terms in debt contracts as less or more favourable is dependent on borrowers' credit and default risk. Prior research shows that, due to their high default risk, highly leveraged firms struggle to obtain additional debt with preferential terms (eg Graham et al. 2008, Chen et al. 2016a, Anagnostopoulou and Tsekrekos 2017). We expect that this should increase highly leveraged debt-financed cash bidders' incentives to manage earnings so that they can signal to lenders that they are still able to generate high profits and that their projects are of high quality. Firms reporting higher profits enjoy lower costs of debt (Hasan et al. 2012, Chen et al. 2016a) and this is more pronounced in firms with higher default risk (Jiang 2008, Kitagawa and Shuto 2021).

Classification shifting and accruals earnings management can help highly leveraged cash bidders reduce lenders' perceived risk. These earnings management practices increase firms' core earnings, which play a key role in shaping lending agreements (Li 2010, Dyreng et al. 2017, Fan et al. 2019). Furthermore, it is likely to be challenging for debt providers to detect classification shifting and accruals earnings management in the periods following the debt issuance in an M&A environment. Firms that engage in acquisition activity are likely to have naturally occurring special items after the takeover (McVay 2006, Fan et al. 2019), offering scope to highly leveraged cash bidders to sustain their pre-merger classification shifting in the post-acquisition period. In terms of accruals earnings management, the reversal of inflated earnings via this practice in the pre-merger period is unlikely to be immediately observed in the post-merger period due to business combinations (Chen et al. 2016b).

Therefore, we predict that highly leveraged debt-financed cash bidders will have incentives to engage in classification shifting and accruals earnings management in the pre-merger year to

³In support of this, we manually check the annual reports of several acquirers in our sample, such as Crown Holdings (Annual Report, 2016), Rexnord Corporation (Annual Report, 2012), and TriMas Corporation (Annual Report, 2009), and find that their debt agreement is based on non-GAAP earnings.

be successful in obtaining the necessary funds with more favourable (or less restrictive) terms. To the extent that these practices reduce lenders' perceived risk, highly leveraged borrowers will secure additional debt funding with lower interest rates and/or fewer restrictive financial covenants. Classification shifting and accruals earnings management can also be beneficial in terms of facilitating access to the debt market and thereby obtaining more debt. This is an important factor for highly leveraged firms given their limited borrowing capacity.

However, one could argue that debt providers are sufficiently sophisticated users able to see through managerial opportunism. This would increase managers' *ex-ante* incentives to report higher quality financial information to enhance the probability of obtaining the necessary debt funds with more favourable terms. Prior studies demonstrate that high earnings quality and conditional conservatism are associated with better credit terms (Francis et al. 2005, Bharath et al. 2008, Zhang 2008, Gormley et al. 2012, García Lara et al. 2016, Penalva and Wagenhofer 2019). Furthermore, debt contracts are not one-time agreements; indeed, continuous interactions and historical long-term relationships between borrowers and lenders are important information sources for lenders in setting future debt agreements (Frame 1995, Frame et al. 2001). This can also lessen borrowers' incentives to engage in opaque financial reporting decisions prior to debt issuance, especially if they are interested in maintaining a good relationship with lenders.

Highly leveraged borrowers are also less likely to have the opportunity to manage earnings. Earnings information is likely to be more relevant to those providing debt to highly leveraged firms when they are less certain about the firms' future prospects. In support of this, Plummer and Tse (1999) and Jiang (2008) suggest that the debt market mainly reacts to accounting information in firms with high levels of uncertainty in their prospects. As leverage increases firms' credit risk, lenders are willing to incur extra monitoring costs and rely on earnings as well as other financial information to continuously assess the firms' credit risk and mitigate any managerial wealth expropriation (Jelinek 2007, Anagnostopoulou and Tsekrekos 2017). Therefore, given this external monitoring by lenders, one could hypothesise that highly leveraged debt-financed bidders have limited opportunity to manage earnings prior to raising additional debt to finance their bids.

Overall, we predict that highly leveraged cash bidders engage in classification shifting and accruals earnings management in the pre-merger year to secure the necessary debt funds with favourable terms. Meanwhile, we acknowledge that some debt providers are sophisticated users of financial statements; they are likely to closely monitor highly leveraged borrowers and can unravel any classification shifting or accruals earnings management. Therefore, the fear of being detected by debt providers can constrain the *ex-ante* incentives of highly leveraged debt-financed acquirers to engage in earnings management. Consequently, not all firms use earnings management and only those that perceive a higher net benefit of doing so are more likely to engage in this practice. That is, to the extent that classification shifting and accruals earnings management enhance the possibility of raising additional debt at favourable terms, highly leveraged cash bidders will have incentives to use earnings management.

Given the above discussion, we state our hypothesis in the null form:

H1: Highly leveraged cash bidders raising debt do not manage earnings prior to bid announcements.

3. Research design and data

3.1. Measuring classification-shifting-based earnings management

Classification shifting is tested by examining the relationship between unexpected core earnings and income-decreasing special items. If firms use classification shifting, then unexpected core

earnings should increase with special items. We estimate unexpected core earnings by employing the model developed by McVay (2006):

$$CE_{i,t} = \beta_0 + \beta_1 CE_{i,t-1} + \beta_2 ATO_{i,t} + \beta_3 AC_{i,t-1} + \beta_4 AC_{i,t} + \beta_5 \Delta Sales_{i,t} + \beta_6 N_ \Delta Sales_{i,t} + \varepsilon_{i,t} \quad (1)$$

where $CE_{i,t}$ is core earnings for firm i in year t , calculated as operating income before depreciation scaled by sales. $ATO_{i,t}$ is the asset turnover ratio, calculated as sales divided by average net operating assets, where the latter is the difference between operating assets and operating liabilities. $AC_{i,t-1}$ is total accruals, calculated as income before extraordinary items minus cash flows from operations divided by sales. $\Delta Sales_{i,t}$ is the percent change in sales. $N_ \Delta Sales_{i,t}$ is the percent change in sales if sales have fallen, and 0 otherwise. We estimate model (1) cross-sectionally for each industry-year, where industry classifications are based on two-digit Standard Industrial Classification (SIC) codes. Unexpected core earnings are calculated as the difference between reported and expected core earnings where the latter are estimated using the coefficients from model (1).

3.2. Measuring accruals-based earnings management

We use discretionary working capital accruals as a measure for accruals-based earnings management. Discretionary working capital accruals are estimated by employing the modified Jones (1991) model (Dechow et al. 1995) with lagged return on assets as a control for extreme operating performance (Kothari et al. 2005):

$$WCA_{i,t}/AT_{i,t-1} = \beta_0 + \beta_1 1/AT_{i,t-1} + \beta_2 \Delta SA_{i,t}/AT_{i,t-1} + \beta_3 ROA_{i,t-1} + \varepsilon_{i,t} \quad (2)$$

where $WCA_{i,t}$ is working capital accruals for firm i in year t , calculated as the change in non-cash current assets minus the change in current liabilities (net of change in the current portion of long-term debt). $AT_{i,t-1}$ is total assets. $\Delta SA_{i,t}$ is the change in sales revenue minus the change in accounts receivable. $ROA_{i,t-1}$ is return on assets. Model (2) is estimated cross-sectionally for each industry-year, where industry classifications are based on two-digit Standard Industrial Classification (SIC) codes. Discretionary working capital accruals are calculated as the difference between actual and normal levels of working capital accruals where the latter are estimated using the coefficients from model (2).

3.3. Baseline regression models

To examine whether highly leveraged debt-financed cash bidders use classification shifting and accruals earnings management prior to a bid announcement (H1), we use the following two regression models:

$$UE_CE_{i,t} = \alpha_0 + \alpha_1 SI_{i,t} + \alpha_2 LEV_{i,t} + \alpha_3 SI_{i,t} \times LEV_{i,t} + Firm_Control + M\&A_Control + \varepsilon_{i,t} \quad (3)$$

$$DWCA_{i,t} = \alpha_0 + \alpha_1 LEV_{i,t} + Firm_Control + M\&A_Control + \varepsilon_{i,t} \quad (4)$$

where UE_CE is unexpected core earnings for firm i in year t . $DWCA$ is discretionary working capital accruals. SI is income-decreasing special items multiplied by -1 and scaled by sales.⁴ LEV is financial leverage, defined as total debt (short- plus long-term debt) divided by total debt plus total equity. If highly leveraged debt-financed cash acquirers employ more classification shifting in the year prior to the bid announcement, the coefficient on $SI \times LEV$ in model (3) should be positive. Similarly, if highly leveraged debt-financed cash bidders use more accruals earnings management in the year preceding a merger announcement, the coefficient on LEV in model (4) should be positive.

Models (3) and (4) include several firm- and deal-related control variables. Fan et al. (2010) and Abernathy et al. (2014) document that the flexibility of a firm's accounting system affects its use of classification shifting and accruals earnings management. We, thus, include two control variables (H_NOA and OP_CYC) for firms' accounting flexibility. H_NOA is equal to 1 if the firm has lagged net operating assets above the sample median, and 0 otherwise. OP_CYC is operating cycle, measured as the log of the day's receivable plus the day's inventory at the beginning of the year. Firms with greater opportunities for growth are more likely to engage in earnings management activities (McVay 2006, Zang 2012). Thus, we include the market-to-book ratio (MTB) as a proxy for growth opportunities. Extant studies document that firms that just meet or beat earnings benchmarks have stronger incentives to engage in earnings management activities (McVay 2006, Athanasakou et al. 2009). As such, we include an indicator variable, $MEET$, that is equal to 1 for firms that just meet or beat earnings benchmarks, and 0 otherwise. We also add an indicator variable for firms that issue new equity (EQ_INS) to control for the effect of corporate external financing via equity offerings on earnings management (Cohen and Zarowin 2010).

Furthermore, Big4 auditors appear to play an important role in curbing firms' earnings management activities (eg Haw et al. 2011, Zang 2012). Accordingly, we control for this external monitoring by including an indicator variable, $BIG4$, that is equal to 1 if the firm hires a Big4 auditing firm, and 0 otherwise. In addition, Zang (2012) and Abernathy et al. (2014) show that firms in a poor financial condition and with low industry market share are more likely to employ accruals earnings management and classification shifting. Therefore, we control for these firm characteristics using the following variables, respectively: FIN_COND is the modified version of Altman's Z-Score (Altman 1968); L_MS is an indicator variable that is equal to 1 if the percentage of a firm's sales to total sales in its industry (three-digit SIC code) is below the sample median, and 0 otherwise (García Lara et al. 2020).⁵

With respect to deal characteristics, we include the following controls commonly used in the M&A literature (eg Lehmann 2016, Bugeja et al. 2019) that may potentially affect the earnings management activity of cash bidders with debt financing: $DEAL_VAL$ is the log of the transaction value; REL_SIZE is the ratio of the deal value to the acquirer's market value of equity; $TENDER$ is equal to 1 if the deal is a tender offer, and 0 otherwise; $DIVER$ is equal to 1 if the bidder and target firm are not in the same industry, and 0 otherwise; TOE_HOLD is equal to 1 for transactions where the bidder had ownership in the target firm prior to the merger, and 0 otherwise;

⁴Income-decreasing special items capture the major types of non-recurring expenses, including operating exceptional ones. The results do not change if we use total special items instead of income-decreasing special items. This additional analysis is given in Section 4.5.

⁵In addition to these control variables, we consider controlling for the effect of CEO compensation on earnings management. However, this reduces our sample by more than 40%. We, therefore, do not add this control to our main analysis. In a sensitivity test, we find that the overall conclusion of our main findings is not affected by controlling for CEO compensation.

PUB_TAR is equal to 1 if the target firm is a public company, and 0 otherwise; and *PRIV_DEBT* is equal to 1 if the bidder uses private debt to finance the bid, and 0 otherwise. Finally, industry and year dummies are added to control for industry and timing effects, respectively. We estimate models (3) and (4) with standard errors clustered by industry. Detailed definitions of all the variables are provided in Appendix A.

3.4. Data and sample

The sample covers successful domestic US M&A deals announced between 1 January 2000 and 31 December 2019. Thomson Reuters Eikon is used to identify them. We require the bidder to be a public non-financial/non-utility firm and to acquire at least 50% of the target shares, which leaves us with 8,544 deals. We further require the transaction to be either a pure cash purchase or a non-pure cash purchase, which leads to 5,133 deals.⁶ We then require the bidder to be a cash bidder with debt financing, which is defined as a bidder that issues new long-term private or public debt during the merger year, obtained from their cash flow statement via Compustat (eg Harford et al. 2009).⁷ This requirement leaves us with 2,966 deals. Moreover, we require the acquirer in a deal to have the necessary accounting data from Compustat to estimate unexpected core earnings and discretionary working capital accruals for our earnings management measures, which leaves us with 2,393 deals.⁸ Finally, we require the bidder to have Compustat data on our firm-related control variables, which results in the final sample of 2,178 deals.

Table 1 indicates the descriptive statistics for the main variables used in the study. The average (median) bidder in our sample has a leverage ratio (*LEV*) of 33.8% (30.8%). The mean (median) of income-decreasing special items scaled by sales, measured as positive values, (*SI*) is 0.018 (0.003), implying that special items are on average 1.8% of sales. The mean (median) of unexpected core earnings (*UE_CE*) is 0.017 (0.013) and the mean (median) of discretionary working capital accruals (*DWCA*) is 0.007 (0.002). These values are similar to those obtained by prior earnings management studies (eg Joo and Chamberlain 2017, Liu and Wu 2021). Concerning bid characteristics, the average deal in the sample has a value (*DEAL_VAL*) of USD 728.7 million. Tender offers (*TENDER*) represent 5% of the deals in the sample, and around 30% of bids in the sample are cross-industry deals (*DIVER*).

⁶In other words, we exclude pure-stock transactions as bidders do not need to borrow to finance such M&A deals.

⁷The merger year is considered because debt issuance with the aim of financing a deal is likely to take place around the bid announcement. We manually check the annual reports of several cash acquirers (eg Triumph Group Inc (Annual Report, 2010), ACI Worldwide Inc (Annual Report, 2011), 1-800-FLOWERS.COM Inc (Annual Report, 2014), Douglas Dynamics (Annual Report, 2014), NN Inc (Annual Report, 2014), and United Rentals Inc (Annual Report, 2017)) in our sample to confirm whether they indeed issue debt to finance their bids. We find that these bidders state in their annual reports that they fund their cash deals using debt.

⁸Unexpected core earnings and discretionary working capital accruals are calculated for each industry-year, employing all firms included in Compustat. To ensure sufficient data for the estimation of these earnings management measures, a minimum of 15 observations per industry-year group are required (McVay 2006). Furthermore, we require positive average net operating assets and at least USD 1 million in annual sales for the estimation of unexpected core earnings (McVay 2006, Liu and Wu 2021).

Table 1. Descriptive statistics.

	Mean	25th	Median	75th	Std. Dev
<i>UE_CE</i>	0.017	−0.024	0.013	0.060	0.114
<i>SI</i>	0.018	0.000	0.003	0.017	0.039
<i>DWCA</i>	0.007	−0.025	0.002	0.031	0.072
<i>LEV</i>	0.338	0.127	0.308	0.474	0.270
<i>OP_CYC</i>	−4.695	−5.127	−4.778	−4.341	0.667
<i>H_NOA</i>	0.500	0.000	0.500	1.000	0.500
<i>MTB</i>	3.347	1.568	2.422	3.929	4.374
<i>MEET</i>	0.030	0.000	0.000	0.000	0.170
<i>EQ_INS</i>	0.584	0.000	1.000	1.000	0.493
<i>BIG4</i>	0.792	1.000	1.000	1.000	0.406
<i>FIN_COND</i>	4.040	2.262	3.384	5.004	3.639
<i>L_MS</i>	0.500	0.000	0.500	1.000	0.500
<i>DEAL_VAL</i>	4.589	3.219	4.595	5.979	1.981
<i>REL_SIZE</i>	0.269	0.033	0.114	0.299	0.432
<i>TENDER</i>	0.052	0.000	0.000	0.000	0.223
<i>DIVER</i>	0.305	0.000	0.000	1.000	0.461
<i>TOE_HOLD</i>	0.012	0.000	0.000	0.000	0.109
<i>PUB_TAR</i>	0.178	0.000	0.000	0.000	0.383
<i>PRIV_DEBT</i>	0.671	0.000	1.000	1.000	0.470
N			2,178		

Notes: This table reports descriptive statistics for a sample of 2,178 deals, spanning the years 2000–2019. The variables are defined as in Appendix A.

4. Empirical results

4.1. Earnings management by highly leveraged debt-financed cash bidders

The results from our baseline models (3) and (4) used to test whether highly leveraged debt-financed cash bidders engage in classification shifting and accruals earnings management are reported in Table 2, columns (1) and (2), respectively. Column (1) of the table shows that the estimated coefficient on $SI \times LEV$ is positive (0.8555) and statistically significant ($p < 0.01$). This implies that highly leveraged debt-financed cash bidders have greater incentives to misclassify some of their core expenses as income-decreasing special items with the aim of increasing their core earnings prior to the merger announcement compared to those with low leverage. The overall effect of income-decreasing special items on classification shifting by highly leveraged debt-financed cash bidders, measured by the sum of the coefficients on SI and $SI \times LEV$, is positive (0.8859) and statistically significant ($p < 0.01$).

Similarly, column (2) of the table indicates that the estimated coefficient on LEV is positive (0.0127) and statistically significant ($p < 0.05$). This suggests that highly leveraged cash acquirers issuing new debt to finance their bids use, to some extent, more discretionary working capital accruals ahead of M&A than those with low leverage do. In economic terms, a one standard deviation increase in leverage increases discretionary working capital accruals by 0.34 percentage points (0.0127×0.270). Taken together, our results reported in Table 2 suggest that highly leveraged debt-financed cash bidders have incentives to increase their operating-performance-related earnings via both classification shifting and accruals earnings management in the year preceding a merger announcement.

Table 2. Earnings management by highly leveraged cash acquirers with debt financing.

	<i>UE_CE</i> (1)	<i>DWCA</i> (2)
<i>SI</i>	0.0304 (0.266)	
<i>LEV</i>	−0.0007 (−0.036)	0.0127** (2.357)
<i>SI × LEV</i>	0.8555*** (4.316)	
<i>OP_CYC</i>	−0.0007 (−0.084)	−0.0008 (−0.180)
<i>H_NOA</i>	0.0330** (2.681)	−0.0098** (−2.055)
<i>MTB</i>	0.0007 (0.705)	0.0007* (1.800)
<i>MEET</i>	0.0005 (0.024)	0.0141 (0.913)
<i>EQ_INS</i>	−0.0156*** (−2.817)	0.0029 (0.616)
<i>BIG4</i>	0.0057 (0.532)	−0.0031 (−0.579)
<i>FIN_COND</i>	0.0019 (1.609)	0.0009** (2.032)
<i>L_MS</i>	0.0071 (0.520)	0.0039 (0.972)
<i>DEAL_VAL</i>	0.0033* (1.946)	−0.0033** (−2.600)
<i>REL_SIZE</i>	0.0005 (0.078)	−0.0028 (−0.739)
<i>TENDER</i>	0.0168* (1.815)	−0.0032 (−0.610)
<i>DIVER</i>	−0.0096 (−1.611)	0.0013 (0.388)
<i>TOE_HOLD</i>	0.0680 (1.207)	−0.0189 (−1.675)
<i>PUB_TAR</i>	−0.0085 (−0.761)	0.0066 (1.619)
<i>PRIV_DEBT</i>	−0.0037 (−0.622)	0.0046 (1.174)
Constant	−0.0541 (−1.156)	−0.0151 (−0.638)
Industry Fixed Effects	Yes	Yes
Year Fixed Effects	Yes	Yes
N	2,178	2,178
R-squared	0.1357	0.0575

Notes: This table shows regression results for testing whether highly leveraged debt-financed cash bidders use classification shifting and accruals management in the year preceding a merger announcement. All variables are described in Appendix A. The *t*-statistics (in parentheses) are calculated using standard errors clustered by industry. *, **, and *** represent significance levels of 0.10, 0.05, and 0.01, respectively (two tailed).

4.2. Endogeneity problems

Our evidence that highly leveraged debt-financed cash bidders have incentives to manage earnings could be affected by several endogeneity problems. First, it might be attributable to firms' earnings management incentives prior to the debt issuance unrelated to financing cash mergers.

To alleviate this concern and better identify the casual effect, we include matched non-M&A firms that issue debt as a control group in our main analysis. In doing so, we first create an indicator variable, *CASH_DF1*, that is equal to 1 for debt-financed cash acquirers, and 0 for the matched sample of debt-financed non-M&A firms.⁹ We then interact *CASH_DF1* with special items and leverage in our baseline model (3) and with leverage in our baseline model (4).

We report the results of this analysis in Table 3, Panel A. Our results suggest that debt-financed cash acquirers manage earnings more than their matched sample of debt-financed non-M&A firms. In particular, as reported under column (2), while the coefficient on $SI \times CASH_DF1$ is insignificant, consistent with our expectation, the coefficient on the variable of interest ($SI \times LEV \times CASH_DF1$) is significantly positive at 1%. This demonstrates that only highly leveraged debt-financed cash acquirers utilise classification shifting before debt arrangements. However, we did not find similar results for highly leveraged debt-financed non-M&A firms ($SI \times LEV$). Finally, the coefficient on $LEV \times CASH_DF1$ is insignificant under column (4), suggesting that accruals earnings management become less significant. Taken together, our results indicate that highly leveraged debt-financed cash bidders increase their earnings, particularly via classification shifting, compared to highly leveraged debt-financed non-M&A firms. This suggests that our main finding is attributable to firms' earnings management incentives prior to debt issuance related to financing cash mergers.

Second, our reported results could be attributed to firms' incentives to manage earnings prior to the acquisition, regardless of whether it is financed with new debt. To mitigate this concern and better identify the casual effect, we include cash bidders without debt financing as a control group in our main analysis. To do so, we first create an indicator variable, *CASH_DF2*, that is equal to 1 for cash acquirers with debt financing, and 0 for cash acquirers without debt financing. We then interact *CASH_DF2* with special items and leverage in our baseline model (3) and with leverage in our baseline model (4).

Similar to our results reported under Panel A of Table 3, the results reported in Panel B of Table 3 still suggest that debt-financed cash acquirers manage earnings more than their control sample of cash acquirers without debt financing. In particular, as reported under column (2), the coefficient on $SI \times LEV \times CASH_DF2$ is significantly positive and on $SI \times LEV$ is insignificant. Finally, the coefficient on $LEV \times CASH_DF2$ is insignificant in column (4). These results indicate that highly leveraged debt-financed cash bidders increase their earnings, particularly via classification shifting, relative to their counterparts without debt financing, suggesting that our main finding is attributable to firms' earnings management incentives prior to an acquisition funded with debt.

Finally, our baseline finding might be attributable to unobserved characteristics that affect both leverage and the use of earnings management. To appease this concern, we replicate our main analysis with a propensity score matched sample.¹⁰ To do so, we first estimate the probability of firms having a high level of leverage by using a logit model of the binary outcome (*HIGH_LEV*) that equals 1 if the firm has leverage higher than the sample median, with observable characteristics as explanatory variables. In addition to the control variables used in the baseline model, we include other observable characteristics that may influence firms' leverage

⁹Matched non-M&A firms are chosen using the following criteria similar to existing M&A studies (eg Higgins 2013, He et al. 2020): the non-M&A firm operates in the same industry as the debt-financed cash bidder; issues new debt in the merger year; and has similar firm size, performance, and growth opportunities to the debt-financed cash bidder in the year prior to the merger announcement.

¹⁰To further address this concern, we also conduct a two-stage least squares (2SLS) analysis using the firm's initial leverage ratio as an instrumental variable for the firm's current leverage ratio. Lemmon et al. (2008) find that a firm's initial leverage ratio is an important determinant of the firm's leverage ratio in the current year. We find that our main finding still holds after implementing the 2SLS analysis.

decisions. These include asset tangibility, asset maturity, earnings volatility, firm size, and average industry leverage (eg Aivazian et al. 2005, Firth et al. 2008). We then match each observation in the highly leveraged group with one in the low leveraged group that has the closest propensity score within the maximum caliper distance of 0.01.¹¹ We end up with 385 pairs of matched firms.

Table 4 presents summary statistics of the propensity score matching procedures. Column (1) shows the results of the logit model employed to measure propensity scores. Columns (2) and (3) present the results of the main analysis using the propensity score matched sample. The coefficient on $SI \times LEV$ is significantly positive in column (2) and on LEV is significantly positive in column (3). These results suggest that the use of the propensity score matched sample supports our main finding that highly leveraged debt-financed cash bidders manage earnings prior to bid announcements.

4.3. Flexibility in using accruals-based earnings management

Our main analysis suggests that both classification shifting and, to some extent, accruals earnings management appear to be viable practices for highly leveraged debt-financed cash bidders. Given this, we examine how these bidders decide to use one or the other.¹² Extant studies indicate that this decision is likely to depend on firms' abilities and specific opportunities to use a certain method of earnings management (Zang 2012, Abernathy et al. 2014). When firms do not have an opportunity to use one form of earnings management, they will employ another form (Fan et al. 2010). For example, prior studies show that firms with accounting systems that lack flexibility have less ability and fewer opportunities to use accruals management and, as such, focus on earnings management outside the confines of the accounting system (Zang 2012). As classification shifting is implemented outside the accounting system (Abernathy et al. 2014), we argue that highly leveraged debt-financed cash bidders tend to prioritise classification shifting over accruals management when they have limited accounting flexibility.

To test this conjecture, we interact proxies for accounting flexibility with special items and leverage in our baseline model (3), and with leverage in our baseline model (4). We use two previously described measures of accounting flexibility (ACC_FLEX); namely, operating cycle (OP_CYC) and net operating assets (H_NOA) (Zang 2012, Abernathy et al. 2014). Firms with longer operating cycles have greater flexibility in using accruals management as they have larger accrual accounts and a longer period for accruals to reverse (Zang 2012). We multiply OP_CYC by -1 so that its higher values indicate lower accounting flexibility. Since net operating assets capture the extent of accruals management in previous years (Zang 2012, Abernathy et al. 2014), we expect firms with larger net operating assets to have lower flexibility in using accruals. In other words, managers' ability to inflate earnings via accruals in the current period is

¹¹To validate our propensity score matched sample, we compute the difference in the sample means of the variables used in the propensity score matching model for the high and low leveraged bidders. We find no significant differences in means, suggesting that the matching procedure successfully eliminated all observable differences.

¹²Another interesting additional analysis could be related to examining whether the use of classification shifting/accruals earnings management is mainly prevalent with debt financing from new lenders. This is because some highly leveraged acquirers with an ongoing bank relationship might not wish to mislead their lenders to avoid jeopardizing their future financing or securing it with less favourable terms. However, this analysis could not be performed using our sample as the majority of loans are provided by group of lenders (syndicated loans), which make it difficult to identify debt financing from new lenders. This is similar to that reported by Keil and Müller (2020) who show that 80% of loans in their sample are syndicated loans.

Table 3. Control groups.

Panel A: Cash acquirers with debt financing vs. non-M&A firms with debt financing				
	<i>UE_CE</i> (1)	<i>UE_CE</i> (2)	<i>DWCA</i> (3)	<i>DWCA</i> (4)
<i>SI</i>	0.0696 (1.151)	0.1096* (1.838)		
<i>LEV</i>		0.0395*** (3.173)		0.0044 (0.938)
<i>SI</i> × <i>LEV</i>		−0.0826 (−0.623)		
<i>CASH_DF1</i>	−0.0065 (−0.752)	0.0094 (0.734)	0.0033* (1.733)	0.0014 (0.401)
<i>SI</i> × <i>CASH_DF1</i>	0.2400* (1.766)	0.0256 (0.262)		
<i>LEV</i> × <i>CASH_DF1</i>		−0.0395 (−1.372)		0.0059 (1.023)
<i>SI</i> × <i>LEV</i> × <i>CASH_DF1</i>		0.4810*** (5.266)		
<i>OP_CYC</i>	0.0089 (1.083)	0.0074 (0.901)	−0.0012 (−0.295)	−0.0014 (−0.332)
<i>H_NOA</i>	0.0476*** (3.257)	0.0470*** (3.136)	−0.0205*** (−4.178)	−0.0209*** (−4.124)
<i>MTB</i>	0.0004 (0.598)	0.0003 (0.463)	−0.0001 (−0.279)	−0.0002 (−0.395)
<i>MEET</i>	−0.0053 (−0.698)	−0.0074 (−1.039)	0.0234*** (3.459)	0.0226*** (3.423)
<i>EQ_INS</i>	−0.0234*** (−3.153)	−0.0235*** (−3.199)	0.0052* (1.822)	0.0051* (1.786)
<i>BIG4</i>	0.0038 (0.297)	0.0038 (0.304)	−0.0002 (−0.053)	−0.0002 (−0.035)
<i>FIN_COND</i>	0.0010 (1.188)	0.0018** (2.116)	0.0010*** (3.538)	0.0012*** (4.434)
<i>L_MS</i>	−0.0153 (−0.818)	−0.0139 (−0.754)	−0.0078** (−2.524)	−0.0074** (−2.424)
Constant	0.0446 (0.823)	0.0180 (0.316)	−0.0326 (−1.430)	−0.0332 (−1.458)
Industry fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
N	4,356	4,356	4,356	4,356
R-squared	0.0506	0.0573	0.0314	0.0322
Panel B: Cash acquirers with debt financing vs. cash acquirers without debt financing				
	<i>UE_CE</i> (1)	<i>UE_CE</i> (2)	<i>DWCA</i> (3)	<i>DWCA</i> (4)
<i>SI</i>	0.1291** (2.553)	0.1579** (2.640)		
<i>LEV</i>		−0.0110 (−0.438)		0.0340*** (4.657)
<i>SI</i> × <i>LEV</i>		−0.2853 (−0.832)		
<i>CASH_DF2</i>	−0.0118*** (−2.908)	−0.0094* (−1.716)	0.0106*** (3.488)	0.0121*** (3.927)

(Continued)

Table 3. Continued.

Panel B: Cash acquirers with debt financing vs. cash acquirers without debt financing				
	<i>UE_CE</i> (1)	<i>UE_CE</i> (2)	<i>DWCA</i> (3)	<i>DWCA</i> (4)
<i>SI</i> × <i>CASH_DF2</i>	0.1657* (1.927)	−0.0883 (−0.767)		
<i>LEV</i> × <i>CASH_DF2</i>		−0.0036 (−0.239)		−0.0149 (−1.603)
<i>SI</i> × <i>LEV</i> × <i>CASH_DF2</i>		0.8607** (2.313)		
<i>OP_CYC</i>	0.0036 (0.378)	0.0025 (0.257)	−0.0001 (−0.026)	−0.0001 (−0.014)
<i>H_NOA</i>	0.0375*** (3.996)	0.0381*** (3.664)	−0.0107*** (−3.144)	−0.0131*** (−3.709)
<i>MTB</i>	−0.0005 (−0.506)	−0.0003 (−0.322)	0.0007 (1.194)	0.0003 (0.482)
<i>MEET</i>	−0.0016 (−0.123)	0.0001 (0.007)	0.0115 (1.096)	0.0110 (1.026)
<i>EQ_INS</i>	−0.0171*** (−3.066)	−0.0164*** (−2.968)	0.0015 (0.449)	0.0008 (0.236)
<i>BIG4</i>	0.0066 (1.086)	0.0058 (0.955)	−0.0031 (−0.780)	−0.0029 (−0.743)
<i>FIN_COND</i>	0.0002 (0.618)	0.0001 (0.155)	0.0011*** (3.363)	0.0015*** (6.033)
<i>L_MS</i>	−0.0066 (−0.712)	−0.0064 (−0.682)	−0.0019 (−0.547)	−0.0015 (−0.442)
<i>DEAL_VAL</i>	0.0041** (2.673)	0.0042*** (2.692)	−0.0030*** (−3.781)	−0.0030*** (−3.790)
<i>REL_SIZE</i>	−0.0057 (−1.170)	−0.0065 (−1.341)	0.0016 (0.478)	0.0005 (0.138)
<i>TENDER</i>	0.0085 (0.844)	0.0080 (0.807)	0.0008 (0.210)	0.0011 (0.287)
<i>DIVER</i>	−0.0072* (−1.862)	−0.0072* (−1.846)	0.0048** (2.333)	0.0046** (2.322)
<i>TOE_HOLD</i>	0.0391 (0.865)	0.0414 (0.933)	−0.0146* (−1.993)	−0.0151** (−2.037)
<i>PUB_TAR</i>	−0.0106 (−1.379)	−0.0104 (−1.372)	0.0030 (0.974)	0.0032 (1.010)
Constant	0.0312 (0.625)	0.0251 (0.522)	−0.0095 (−0.493)	−0.0141 (−0.723)
Industry fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
N	3,645	3,645	3,645	3,645
R-squared	0.0936	0.0998	0.0477	0.0520

Notes: Panel A shows regression results for testing whether highly leveraged cash acquirers with debt financing engage in classification shifting and accruals management in the year preceding a merger announcement, using non-M&A firms with debt financing as a control group. Panel B shows regression results for testing whether highly leveraged cash acquirers with debt financing engage in classification shifting and accruals management in the year preceding a merger announcement, using cash acquirers without debt financing as a control group. All variables are described in Appendix A. The *t*-statistics (in parentheses) are calculated using standard errors clustered by industry. *, **, and *** represent significance levels of 0.10, 0.05, and 0.01, respectively (two tailed).

Table 4. Propensity score matching.

	First stage	Second stage	
	<i>HIGH_LEV</i> (1)	<i>UE_CE</i> (2)	<i>DWCA</i> (3)
<i>SI</i>		0.1523 (0.688)	
<i>LEV</i>		0.0008 (0.034)	0.0265** (2.577)
<i>SI</i> × <i>LEV</i>		0.9777** (2.437)	
<i>OP_CYC</i>	−0.2355* (−1.728)	0.0176* (1.725)	−0.0120* (−1.718)
<i>H_NOA</i>	0.6451*** (3.401)	0.0314* (1.963)	−0.0081 (−1.260)
<i>MTB</i>	0.2569*** (9.019)	0.0049* (1.914)	0.0015* (1.695)
<i>MEET</i>	0.6741 (1.597)	0.0003 (0.007)	0.0253 (1.011)
<i>EQ_INS</i>	0.0730 (0.554)	−0.0046 (−0.532)	0.0008 (0.128)
<i>BIG4</i>	0.3104* (1.747)	0.0353*** (2.765)	−0.0255** (−2.275)
<i>FIN_COND</i>	−0.7780*** (−17.311)	−0.0027 (−0.613)	0.0022 (0.914)
<i>L_MS</i>	−0.1910 (−1.080)	0.0193 (1.021)	−0.0042 (−0.604)
<i>DEAL_VAL</i>	−0.0157 (−0.263)	0.0012 (0.501)	−0.0055*** (−3.153)
<i>REL_SIZE</i>	0.1689 (0.823)	0.0038 (0.452)	−0.0108* (−1.810)
<i>TENDER</i>	−0.2469 (−0.767)	0.0045 (0.393)	0.0009 (0.061)
<i>DIVER</i>	0.1300 (0.950)	−0.0125 (−1.011)	0.0002 (0.053)
<i>TOE_HOLD</i>	−0.0825 (−0.153)	0.0540 (1.050)	−0.0461* (−1.852)
<i>PUB_TAR</i>	−0.1403 (−0.737)	−0.0123 (−1.306)	0.0125 (1.464)
<i>PRIV_DEBT</i>	0.4049*** (2.945)	−0.0090 (−1.008)	0.0088* (1.708)
<i>TANG</i>	0.9719 (1.501)		
<i>ASSET_MATUR</i>	−0.0095 (−0.697)		
<i>EARN_VOL</i>	−4.1773*** (−4.001)		
<i>FIRM_SIZE</i>	0.0662 (0.963)		
<i>IND_LEV</i>	0.1610 (1.312)		
Constant	0.9343 (0.767)	−0.0843 (−1.357)	−0.0048 (−0.078)
Industry fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes

(Continued)

Table 4. Continued.

	First stage	Second stage	
	<i>HIGH_LEV</i> (1)	<i>UE_CE</i> (2)	<i>DWCA</i> (3)
N	2,096	770	770
R-squared	0.3886	0.1667	0.1468

Notes: This table shows regression results for testing whether highly leveraged debt-financed cash bidders engage in classification shifting and accruals management in the year preceding a merger announcement, using the propensity-score matched sample. All variables are described in Appendix A. The *t*-statistics (in parentheses) are calculated using standard errors clustered by industry. *, **, and *** represent significance levels of 0.10, 0.05, and 0.01, respectively (two tailed).

constrained by accruals earnings management in the previous periods. Therefore, the higher values of net operating assets suggest that firms have already used accruals management in the previous periods and, as such, their ability to use it further during the current period is constrained (Abernathy et al. 2014).

We report the results in Table 5. Columns (1) and (3) of the table show that the estimated coefficient on $SI \times LEV \times ACC_FLEX$ is positive and significant for *OP_CYC* and positive but insignificant for *H_NOA*. This provides some evidence that highly leveraged debt-financed cash acquirers are more likely to use classification shifting when they have lower accounting flexibility. However, columns (2) and (4) of the table show that the estimated coefficient on $LEV \times ACC_FLEX$ is negative and significant for *OP_CYC* and *H_NOA*, suggesting that highly leveraged debt-financed cash acquirers are less likely to use accruals earnings management when they have lower accounting flexibility. Collectively, these results, on average, support our proposition that highly leveraged debt-financed cash bidders substitute classification shifting for accruals earnings management when they face limited accounting flexibility.

4.4. Consequences of earnings management on debt contracts

Our hypothesis is that highly leveraged debt-financed bidders have incentives to manage earnings to secure the necessary debt funds with better terms. While we find support for this prediction, it not clear whether pre-merger earnings management by these bidders ultimately leads to securing additional debt with better terms. This is because some debt providers are sophisticated users of financial statements so they can disentangle and discern bidders' earnings management. However, as previously argued, this might be challenging in the M&A setting. For example, if highly leveraged debt-financed bidders use classification shifting in the pre-merger period, they can sustain it in the post-merger period due to naturally occurring special items after the takeover (McVay 2006, Fan et al. 2019). This decreases the probability of uncovering classification shifting. To test these arguments, we employ the following regression model:

$$\begin{aligned}
 Loan_Term_{i,t+1} = & \alpha_0 + \alpha_1 UE_CE_{i,t} + \alpha_2 SI_{i,t} + \alpha_3 UE_CE_{i,t} \times SI_{i,t} + \alpha_4 LEV_{i,t} + \alpha_5 UE_CE_{i,t} \\
 & \times LEV_{i,t} + \alpha_6 SI_{i,t} \times LEV_{i,t} + \alpha_7 UE_CE_{i,t} \times SI_{i,t} \times LEV_{i,t} + \alpha_8 DWCA_{i,t} + \alpha_9 DWCA_{i,t} \\
 & \times LEV_{i,t} + Loan_Control + Firm_Control + M\&A_Control + \varepsilon_{i,t+1}
 \end{aligned}
 \tag{5}$$

We estimate this model for private debt contracts in our sample as nearly 70% of our sample bidders use bank loans to finance their M&A. In model (5), *Loan_Term* is one of the following

Table 5. Accounting flexibility.

	<i>ACC_FLEX = OP_CYC</i>		<i>ACC_FLEX = H_NOA</i>	
	<i>UE_CE</i> (1)	<i>DWCA</i> (2)	<i>UE_CE</i> (3)	<i>DWCA</i> (4)
<i>SI</i>	-2.7327** (-2.301)		-0.0661 (-0.540)	
<i>LEV</i>	-0.0464 (-0.729)	-0.0503* (-1.756)	0.0246* (1.773)	0.0229*** (2.882)
<i>SI</i> × <i>LEV</i>	3.8845*** (3.048)		0.5901 (1.430)	
<i>SI</i> × <i>ACC_FLEX</i>	-0.5488** (-2.218)		0.4346 (1.524)	
<i>LEV</i> × <i>ACC_FLEX</i>	-0.0097 (-0.710)	-0.0140** (-2.146)	-0.0505* (-1.981)	-0.0228* (-1.923)
<i>SI</i> × <i>LEV</i> × <i>ACC_FLEX</i>	0.6226** (2.172)		0.1386 (0.234)	
<i>OP_CYC</i>	0.0072 (0.721)	0.0044 (0.970)	0.0005 (0.059)	-0.0006 (-0.133)
<i>H_NOA</i>	0.0321*** (2.697)	-0.0097** (-2.022)	0.0426** (2.219)	-0.0020 (-0.393)
<i>MTB</i>	0.0006 (0.687)	0.0006* (1.791)	0.0009 (0.908)	0.0007* (1.803)
<i>MEET</i>	-0.0012 (-0.060)	0.0140 (0.905)	-0.0034 (-0.166)	0.0134 (0.876)
<i>EQ_INS</i>	-0.0161*** (-2.779)	0.0031 (0.655)	-0.0152*** (-2.745)	0.0032 (0.664)
<i>BIG4</i>	0.0059 (0.563)	-0.0030 (-0.543)	0.0060 (0.578)	-0.0029 (-0.528)
<i>FIN_COND</i>	0.0016 (1.424)	0.0010** (2.318)	0.0019 (1.643)	0.0009** (2.130)
<i>L_MS</i>	0.0084 (0.607)	0.0040 (0.980)	0.0085 (0.607)	0.0044 (1.081)
<i>DEAL_VAL</i>	0.0034** (2.098)	-0.0034** (-2.645)	0.0032* (1.872)	-0.0032** (-2.461)
<i>REL_SIZE</i>	-0.0008 (-0.139)	-0.0023 (-0.607)	0.0013 (0.186)	-0.0029 (-0.749)
<i>TENDER</i>	0.0164* (1.921)	-0.0029 (-0.566)	0.0129* (1.711)	-0.0040 (-0.764)
<i>DIVER</i>	-0.0092 (-1.606)	0.0011 (0.321)	-0.0082 (-1.323)	0.0013 (0.393)
<i>TOE_HOLD</i>	0.0673 (1.202)	-0.0181 (-1.602)	0.0616 (1.100)	-0.0193* (-1.701)
<i>PUB_TAR</i>	-0.0077 (-0.709)	0.0065 (1.609)	-0.0068 (-0.658)	0.0067 (1.642)
<i>PRIV_DEBT</i>	-0.0035 (-0.628)	0.0044 (1.117)	-0.0040 (-0.683)	0.0046 (1.188)
Constant	-0.0159 (-0.326)	0.0093 (0.385)	-0.0521 (-1.112)	-0.0183 (-0.752)
Industry fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
N	2,178	2,178	2,178	2,178

(Continued)

Table 5. Continued.

	<i>ACC_FLEX</i> = <i>OP_CYC</i>		<i>ACC_FLEX</i> = <i>H_NOA</i>	
	<i>UE_CE</i> (1)	<i>DWCA</i> (2)	<i>UE_CE</i> (3)	<i>DWCA</i> (4)
R-squared	0.1420	0.0587	0.1433	0.0590

Notes: This table shows regression results for testing whether accounting flexibility increases the use of classification shifting and decreases the use of accruals management by highly leveraged debt-financed cash bidders in the year preceding a merger announcement. All variables are described in Appendix A. The *t*-statistics (in parentheses) are calculated using standard errors clustered by industry. *, **, and *** represent significance levels of 0.10, 0.05, and 0.01, respectively (two tailed).

terms of the contractual loan agreement: *INTER_RATE* is the log of the all-in-drawn interest spread on the bank loan over LIBOR; *FIN_COV* is the log of the number of financial covenants included in a loan; and *LOAN_SIZE* is the amount borrowed scaled by total assets. These variables are calculated using bank loan data from the DealScan database. The main coefficient of interest in the model is α_7 (α_9) which shows how classification shifting (accruals earnings management) by highly leveraged debt-financed bidders affects the design of loan contract terms.

Model (5) includes several sets of control variables likely to affect the loan terms. These are chosen following prior studies examining the determinants of loan terms (eg Graham et al. 2008, Kim et al. 2011, Chen et al. 2016a). First, we control for a set of loan-specific variables, that is, *INST*, *REVOL*, *MATUR*, and *PRICING*. *INST* is an indicator variable that equals 1 if the loan's type is term loan B or C, and 0 otherwise; *REVOL* is an indicator variable that equals 1 if the loan is a revolver, and 0 otherwise; *MATUR* is the number of months between the loan's issue date and the loan maturity date; and *PRICING* is an indicator variable that equals 1 if the loan contract includes a performance pricing provision, and 0 otherwise.

Second, we include a set of firm-specific variables to control for borrower credit quality: *FIRM_SIZE*, *MTB*, *PROFIT*, *TANG*, *FIN_COND*, and *BIG4*. The variable *FIRM_SIZE* refers to the log of total assets; *MTB* is the market-to-book ratio; *PROFIT* is the ratio of EBITDA to total assets; *TANG* is ratio of tangible assets to total assets; *FIN_COND* is the Altman's Z-Score; and *BIG4* refers to the Big Four accountancy firms. Finally, we include a set of deal-specific controls used in our baseline models (3) and (4) that may potentially affect the loan terms.

The results of model (5) are reported in Table 6. In column (1), where the dependent variable is *INTER_RATE*, we find that the coefficient on $UE_CE \times SI \times LEV$ is significantly negative and on $DWCA \times LEV$ is negative but insignificant. We also find that the coefficient on $UE_CE \times SI \times LEV$ is significantly negative and on $DWCA \times LEV$ is negative but insignificant in column (2), where *FIN_COV* is the dependent variable. These results suggest that highly leveraged debt-financed bidders manage earnings more, particularly via classification shifting, securing additional debt funding with lower interest rates and fewer restrictive financial covenants. In addition, column (3) shows that the coefficient on $DWCA \times LEV$ is significantly positive and on $UE_CE \times SI \times LEV$ is positive but insignificant when *LOAN_SIZE* is used as the dependent variable. This indicates that greater accruals earnings management is associated with larger debt amounts. Collectively, these results provide evidence that pre-merger earnings management efforts by highly leveraged cash bidders appear to be successful in securing additional debt with better terms.

Table 6. Debt contracting consequences of earnings management.

	<i>INTER_RATE</i> (1)	<i>FIN_COV</i> (2)	<i>LOAN_SIZE</i> (3)
<i>UE_CE</i>	-0.1475 (-1.432)	-0.2091** (-2.154)	-0.1248 (-1.151)
<i>SI</i>	0.3367 (1.050)	-0.1068 (-0.504)	-1.0984* (-1.899)
<i>UE_CE</i> × <i>SI</i>	1.4881 (0.797)	2.2400* (1.701)	1.5991 (0.376)
<i>LEV</i>	0.1230*** (3.103)	0.0024 (0.081)	0.0011 (0.014)
<i>UE_CE</i> × <i>LEV</i>	0.3619** (2.019)	0.4004* (1.814)	0.3691 (1.317)
<i>SI</i> × <i>LEV</i>	0.0167 (0.027)	-0.3071 (-0.553)	1.6674 (1.328)
<i>UE_CE</i> × <i>SI</i> × <i>LEV</i>	-6.3902** (-2.435)	-4.9151* (-1.753)	0.4624 (0.049)
<i>DWCA</i>	0.1527 (0.924)	-0.0305 (-0.268)	-0.4798*** (-3.124)
<i>DWCA</i> × <i>LEV</i>	-0.0850 (-0.205)	-0.1437 (-0.375)	1.2180** (2.496)
<i>INST</i>	0.1094*** (3.775)	0.0259 (1.381)	0.1681*** (4.398)
<i>REVOL</i>	-0.0980*** (-5.787)	-0.0067 (-0.540)	0.0404* (1.835)
<i>MATUR</i>	0.0484 (1.601)	0.0545* (1.848)	-0.0168 (-0.278)
<i>PRICING</i>	-0.0416*** (-2.748)	0.2663*** (26.792)	0.0433** (2.426)
<i>FIRM_SIZE</i>	-0.0864*** (-11.085)	-0.0309*** (-4.556)	-0.0532*** (-5.420)
<i>MTB</i>	0.0037* (1.698)	0.0008 (0.685)	0.0089*** (3.354)
<i>PROFIT</i>	-0.6898*** (-4.364)	-0.1497 (-1.221)	0.0591 (0.279)
<i>TANG</i>	-0.1141** (-2.085)	-0.0168 (-0.590)	0.0073 (0.112)
<i>FIN_COND</i>	-0.0026 (-0.749)	0.0039* (1.785)	0.0271*** (3.542)
<i>BIG4</i>	0.0214 (1.479)	-0.0016 (-0.118)	-0.0736*** (-2.814)
<i>DEAL_VAL</i>	0.0126** (2.208)	0.0060 (1.114)	-0.0121 (-1.371)
<i>REL_SIZE</i>	0.0276 (1.396)	0.0006 (0.030)	0.2090*** (4.405)
<i>TENDER</i>	-0.0111 (-0.386)	-0.0175 (-1.236)	0.0222 (0.526)
<i>DIVER</i>	-0.0097 (-0.856)	-0.0106 (-1.066)	-0.0067 (-0.527)
<i>TOE_HOLD</i>	0.1259** (2.625)	0.1119* (1.895)	0.0381 (1.007)
<i>PUB_TAR</i>	0.0027 (0.129)	-0.0193* (-1.774)	0.0377* (1.997)

(Continued)

Table 6. Continued.

	<i>INTER_RATE</i> (1)	<i>FIN_COV</i> (2)	<i>LOAN_SIZE</i> (3)
Constant	2.8398*** (37.257)	0.5935*** (8.667)	0.6402*** (4.241)
Industry fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
N	1,281	1,388	1,384
R-squared	0.5756	0.5512	0.4115

Notes: This table shows regression results for testing the effect of classification shifting and accruals management by highly leveraged debt-financed cash bidders on debt contracting terms. All variables are described in Appendix A. The *t*-statistics (in parentheses) are calculated using standard errors clustered by industry. *, **, and *** represent significance levels of 0.10, 0.05, and 0.01, respectively (two tailed).

4.5. Robustness checks

4.5.1. Shiftable vs. non-shiftable special items

In our main analysis, following extant studies (McVay 2006, Fan et al. 2010), we use income-decreasing special items instead of total special items because firms with non-recurring expenses are more able to classification-shift than others. To check the robustness of our main finding that highly leveraged debt-financed cash acquirers employ expense misclassification in the pre-merger period, we replace income-decreasing special items (*SI*) with total special items (*TOTAL_SI*) in model (3). The results are reported in column (1) of Table 7, which shows that the estimated coefficient on *TOTAL_SI* × *LEV* is positive and significant. This suggests that our main finding is not sensitive to the use of total special items.

Furthermore, income-decreasing special items group many types of non-recurring items together. These include *shiftable* items, such as restructuring charges, and *non-shiftable* items, such as losses on asset sales. Firms are more likely to employ classification shifting when they have shiftable income-decreasing special items (McVay 2006). If our main results are evidence of expense misclassification, then we expect the results to be stronger when only shiftable income-decreasing special items are employed. To test this, we decompose special items into shiftable (*SHIFT_SI*) and non-shiftable (*NON_SHIFT_SI*) income-decreasing special items. *NON_SHIFT_SI* is calculated as the sum of goodwill write-offs and losses on asset sales. *SHIFT_SI* is defined as the difference between income-decreasing special items and non-shiftable income-decreasing special items. Column (2) of Table 7 shows that the coefficient on *SHIFT_SI* × *LEV* is significantly positive but that on *NON_SHIFT_SI* × *LEV* is insignificant. The results suggest that only those special items that are shiftable allow highly leveraged debt-financed cash bidders to employ expense misclassification.

4.5.2. Controlling for corporate governance

Extant studies evince that the use of earnings management depends on the strength of corporate governance (eg Klein 2002, Lin and Hwang 2010, Zalata and Roberts 2016). For example, Zalata and Roberts (2016) find that internal corporate governance variables such as board independence, board size, non-executive directors' tenure, and outside directorships affect the use of expense misclassification. Therefore, it is possible that these corporate governance variables may affect our main finding that highly leveraged debt-financed cash bidders employ classification shifting and accruals earnings management. To control for this, we add four variables

Table 7. Shiftable vs. non-shiftable special items.

	<i>UE</i> <i>CE</i> (1)	<i>UE</i> <i>CE</i> (2)
<i>TOTAL_SI</i>	0.1017 (0.816)	
<i>LEV</i>	0.0028 (0.148)	0.0036 (0.199)
<i>TOTAL_SI</i> × <i>LEV</i>	0.7584*** (3.388)	
<i>SHIFT_SI</i>		−0.1189 (−0.660)
<i>SHIFT_SI</i> × <i>LEV</i>		0.7970** (2.211)
<i>NON_SHIFT_SI</i>		0.2493 (0.797)
<i>NON_SHIFT_SI</i> × <i>LEV</i>		0.8455 (1.089)
<i>OP_CYC</i>	0.0002 (0.028)	−0.0017 (−0.186)
<i>H_NOA</i>	0.0328** (2.667)	0.0326*** (2.737)
<i>MTB</i>	0.0007 (0.685)	0.0007 (0.681)
<i>MEET</i>	−0.0000 (−0.000)	0.0005 (0.024)
<i>EQ_INS</i>	−0.0158*** (−2.834)	−0.0155** (−2.666)
<i>BIG4</i>	0.0059 (0.556)	0.0063 (0.600)
<i>FIN_COND</i>	0.0019 (1.660)	0.0019* (1.699)
<i>L_MS</i>	0.0073 (0.531)	0.0071 (0.509)
<i>DEAL_VAL</i>	0.0033* (1.962)	0.0033* (1.916)
<i>REL_SIZE</i>	0.0003 (0.054)	0.0015 (0.225)
<i>TENDER</i>	0.0167* (1.798)	0.0172* (1.850)
<i>DIVER</i>	−0.0095 (−1.607)	−0.0095 (−1.611)
<i>TOE_HOLD</i>	0.0670 (1.191)	0.0691 (1.224)
<i>PUB_TAR</i>	−0.0083 (−0.750)	−0.0087 (−0.791)
<i>PRIV_DEBT</i>	−0.0037 (−0.636)	−0.0040 (−0.658)
Constant	−0.0496 (−1.080)	−0.0610 (−1.267)
Industry Fixed Effects	Yes	Yes
Year Fixed Effects	Yes	Yes
N	2,178	2,178

(Continued)

Table 7. Continued.

	<i>UE_CE</i> (1)	<i>UE_CE</i> (2)
R-squared	0.1382	0.1297

Notes: Column (1) indicates our main results of classification shifting by highly leveraged debt-financed cash bidders, using total special items. Column (2) indicates our main results of classification shifting by highly leveraged debt-financed cash bidders, using shiftable vs. non-shiftable special items. All variables are described in Appendix A. The *t*-statistics (in parentheses) are calculated using standard errors clustered by industry. *, **, and *** represent significance levels of 0.10, 0.05, and 0.01, respectively (two tailed).

to our models (3) and (4): *BFSIZE* is the log of the total number of directors on the board; *BINDEP* is the proportion of independent directors on the board; *BOUT* is the average number of outside directorships held by independent directors; and *BTEN* is the average tenure of independent directors on the board. These variables are calculated using governance data from BoardEx. The results are reported in columns (1) and (2) of Table 8. The estimated coefficients for our main variables of interest remain positive and significant, suggesting that our main findings are robust to controlling for corporate governance.

4.5.3. Alternative measure of unexpected core earnings

In the main analysis, we test classification shifting using the expected core earnings model (McVay 2006). However, this model may give biased results due to the inclusion of total accruals (Barua and Cready 2008, Fan et al. 2010). This is because non-cash income-decreasing special items are part of total accruals, so the use of the latter in the expected core earnings model may lead to a mechanical association between unexpected core earnings and income-decreasing special items. Considering this issue, we test the validity of the main results by using an alternative measure of unexpected core earnings. To do so, we exclude current year total accruals from model (1) and instead include lagged and current year stock returns, following Fan et al. (2010). We estimate unexpected core earnings under this alternative specification (*ALTER_UE_CE*) and re-run model (3). Table 8, column (3) indicates a significantly positive relationship between *ALTER_UE_CE* and the interaction variable $SI \times LEV$. This suggests that our main finding – that highly leveraged debt-financed cash acquirers employ classification shifting prior to merger announcements – is not sensitive to the alternative measure of unexpected core earnings.

4.5.4. Alternative measure of accruals earnings management

We test accruals-based earnings management in the main analysis using the cross-sectional modified Jones model (Dechow et al. 1995) with lagged return on assets as a control for extreme operating performance (Kothari et al. 2005). However, using this model may give biased results as it does not control for firm growth (Collins et al. 2017, García Lara et al. 2020). Considering this issue, we test the validity of the main results by using an alternative measure of discretionary working capital accruals. To do so, we include current growth in sales as a control for firm growth in model (2), following García Lara et al. (2020). We estimate discretionary working capital accruals under this alternative specification (*ALTER_DWCA*) and re-run model (4). Table 8, column (4) indicates a significantly positive relationship between *ALTER_DWCA* and *LEV*. This suggests that our main finding – that highly leveraged debt-financed cash acquirers use accruals-based earnings management prior to bid announcements – is not sensitive to the alternative measure of discretionary working capital accruals.

Table 8. Additional controls and alternative measures for classification shifting and accruals management.

	<i>UE_CE</i> (1)	<i>DWCA</i> (2)	<i>ALTER UE_CE</i> (3)	<i>ALTER DWCA</i> (4)	<i>UE_ΔCE</i> (5)
<i>SI</i>	0.2624 (1.601)		−0.6605*** (−5.063)		0.2895** (2.078)
<i>LEV</i>	−0.0061 (−0.318)	0.0190** (2.315)	−0.0377 (−1.035)	0.0143* (1.882)	0.0032 (0.150)
<i>SI × LEV</i>	0.9342*** (2.827)		1.3824*** (4.466)		−0.4200* (−1.947)
<i>BSIZE</i>	0.0006 (0.044)	0.0062 (0.603)			
<i>BINDEP</i>	−0.0055 (−0.146)	−0.0115 (−0.544)			
<i>BOUT</i>	−0.0018 (−0.820)	0.0012 (0.947)			
<i>BTEN</i>	0.0032*** (4.166)	−0.0006 (−0.879)			
<i>OP_CYC</i>	0.0160** (2.604)	−0.0059 (−1.250)	0.0012 (0.137)	0.0033 (0.841)	−0.0012 (−0.227)
<i>H_NOA</i>	0.0223* (1.915)	−0.0140*** (−3.272)	0.0272* (1.821)	−0.0096** (−2.093)	−0.0041 (−0.754)
<i>MTB</i>	0.0000 (0.017)	0.0001 (0.255)	0.0011 (1.028)	0.0005 (1.483)	−0.0006 (−0.771)
<i>MEET</i>	0.0154 (0.516)	0.0016 (0.098)	0.0221 (0.858)	0.0058 (0.408)	0.0286 (1.277)
<i>EQ_INS</i>	−0.0107 (−1.509)	−0.0003 (−0.085)	−0.0097 (−1.284)	0.0030 (0.551)	0.0061** (2.119)
<i>BIG4</i>	0.0139 (1.466)	0.0001 (0.021)	0.0138 (1.217)	−0.0051 (−0.843)	0.0101** (2.265)
<i>FIN_COND</i>	0.0010 (1.551)	0.0012** (2.103)	0.0011 (0.862)	0.0013** (2.088)	−0.0022 (−1.645)
<i>L_MS</i>	0.0077 (0.397)	0.0034 (0.786)	0.0025 (0.228)	0.0023 (0.452)	−0.0077 (−0.707)
<i>DEAL_VAL</i>	0.0062*** (3.043)	−0.0031** (−2.097)	0.0011 (0.528)	−0.0033*** (−2.732)	−0.0019 (−0.674)
<i>REL_SIZE</i>	−0.0210** (−2.047)	−0.0005 (−0.112)	−0.0043 (−0.453)	−0.0058 (−1.320)	0.0151 (1.532)
<i>TENDER</i>	0.0057 (0.674)	−0.0097 (−1.356)	0.0111 (1.046)	−0.0034 (−0.749)	0.0119 (1.182)
<i>DIVER</i>	−0.0163** (−2.154)	0.0014 (0.362)	−0.0033 (−0.566)	0.0008 (0.224)	0.0042 (1.237)
<i>TOE_HOLD</i>	0.0650 (1.396)	−0.0277 (−1.674)	0.0468 (0.985)	−0.0166 (−1.305)	−0.0353 (−1.656)
<i>PUB_TAR</i>	−0.0080 (−0.990)	0.0055 (1.120)	−0.0116 (−1.106)	0.0070* (1.740)	−0.0022 (−0.523)
<i>PRIV_DEBT</i>	−0.0032 (−0.405)	0.0046 (1.098)	0.0021 (0.353)	0.0056 (1.152)	0.0015 (0.193)
Constant	−0.1887*** (−2.884)	0.0022 (0.054)	−0.0128 (−0.282)	−0.0001 (−0.006)	0.0523 (1.290)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes
N	1,319	1,319	2,074	2,178	2,123

(Continued)

Table 8. Continued.

	<i>UE_CE</i> (1)	<i>DWCA</i> (2)	<i>ALTER_UE_CE</i> (3)	<i>ALTER_DWCA</i> (4)	<i>UE_ΔCE</i> (5)
R-squared	0.1957	0.0606	0.0759	0.0489	0.0627

Notes: Columns (1) and (2) show our main results of classification shifting and accruals management by highly leveraged debt-financed cash bidders after controlling for corporate governance. Columns (3) and (4) present our main results of classification shifting and accruals management by highly leveraged debt-financed cash acquirers, using alternative measures of unexpected core earnings and discretionary working capital accruals, respectively. Column (5) shows regression results for the alternative explanation of classification shifting practices by highly leveraged debt-financed cash acquirers. All variables are described in Appendix A. The *t*-statistics (in parentheses) are calculated using standard errors clustered by industry. *, **, and *** represent significance levels of 0.10, 0.05, and 0.01, respectively (two tailed).

4.5.5. Alternative explanation of classification shifting practices

In this paper, by documenting a positive association between unexpected core earnings and special items for highly leveraged debt-financed acquisitions, we demonstrate that higher-leveraged cash acquirers with debt financing engage in more classification shifting. However, it is possible that this positive relationship is due to real economic change. For example, firms that engage in restructuring may realise immediate benefits which are likely to yield a positive association between unexpected core earnings and special items. We believe that our results are less likely to be driven by this alternative explanation as we only find a significantly positive relationship between unexpected core earnings and special items for highly leveraged cash bidders with debt financing. If the alternative explanation was the main factor behind the results, then one would expect to find such a significantly positive association, not only for highly leveraged debt-financed cash acquirers but also for low leveraged debt-financed cash acquirers.

Nevertheless, we perform an additional test to check whether an increase in highly leveraged debt-financed acquirers' core earnings in the pre-acquisition year is indeed due to classification shifting. To do so, we test whether an increase in core earnings associated with income-decreasing special items in year *t* reverses in year *t* + 1. A reversal in the improvement in core earnings is consistent with a firm's temporary classification shifting practices (McVay 2006, Athanasakou et al. 2009). We examine this reversal test by estimating a variable of unexpected change in core earnings (*UE_ΔCE*) and then using it as a dependent variable in model (3). *UE_ΔCE* is estimated using McVay's (2006) change in expected core earnings model. The results are shown in Table 8, column (5). We find a significantly negative relationship between *UE_ΔCE* and the interaction variable *SI* × *LEV*. This suggests that the increase we find in highly leveraged debt-financed acquirers' core earnings in the pre-acquisition year in our main analysis is due to classification shifting.

5. Conclusion

Prior studies document that acquirers in stock mergers engage in earnings management prior to merger announcements (Erickson and Wang 1999, Botsari and Meeks 2008, Higgins 2013, Lehmann 2016). The purpose of our paper is to extend this body of research to cash mergers and to investigate whether debt-financed cash bidders also manage earnings when they have high leverage levels. Our results show that highly leveraged debt-financed cash bidders use classification shifting and accruals earnings management to increase their core performance in the period before the merger announcement. We further demonstrate that highly leveraged debt-financed cash bidders rely more on classification shifting when they have less ability and

opportunity to employ accruals earnings management due to limited accounting flexibility. In addition, we find evidence that pre-merger earnings management efforts by highly leveraged cash bidders lead to the securing of debt funds with better terms. Overall, our results provide new insights into earnings management in M&A by showing that not only stock bidders but also debt-financed cash acquirers with high leverage engage in opaque financial reporting decisions prior to the bid announcement, and can be helpful for debt providers and investors to better understand financial reporting by cash bidders.

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Appendix A: Variable definitions

Main variables

<i>UE_CE</i>	Unexpected core earnings, defined as the residuals from McVay's (2006) expected core earnings model. The model is estimated cross-sectionally for each industry (2-digit SICs) with at least 15 observations in a given year.
<i>SI</i>	Income-decreasing special items, defined as special items multiplied by negative one and scaled by sales when special items are income-decreasing, and 0 otherwise.
<i>DWCA</i>	Discretionary working capital accruals, defined as the residuals from the modified Jones (1991) model that includes lagged return on assets as a control for extreme operating performance. The model is estimated cross-sectionally for each industry (2-digit SICs) with at least 15 observations in a given year.
<i>LEV</i>	Financial leverage, defined as total debt (short- plus long-term debt) divided by total debt plus total equity.

Control variables

<i>OP_CYC</i>	Operating cycle, measured as the log of the day's receivable plus the day's inventory at the beginning of the year. <i>OP_CYC</i> is multiplied by negative one so that its higher values indicate lower accounting flexibility.
<i>H_NOA</i>	An indicator variable that is equal to 1 if the firm has lagged net operating assets above the sample median, and 0 otherwise.
<i>MTB</i>	The market-to-book ratio, defined as the market value of equity divided by the book value of equity.
<i>MEET</i>	An indicator variable that is equal to 1 for firms that just meet or beat earnings benchmarks, and 0 otherwise.
<i>EQ_INS</i>	An indicator variable that is equal to 1 for firms that issue new equity, and 0 otherwise.
<i>BIG4</i>	An indicator variable that is equal to 1 if the firm hires a Big4 auditing firm, and 0 otherwise.
<i>FIN_COND</i>	Altman's (1968) Z-score, calculated as $3.3(\text{net income}/\text{total assets}) + (\text{sales}/\text{total assets}) + 1.4(\text{retained earnings}/\text{total assets}) + 1.2(\text{working capital}/\text{total assets}) + 0.6(\text{market value of equity}/\text{total liabilities})$.
<i>L_MS</i>	An indicator variable that is equal to 1 if the percentage of firm's sales to total sales of its industry (3-digit SICs) is below the sample median, and 0 otherwise.
<i>DEAL_VAL</i>	The log of the transaction value.
<i>REL_SIZE</i>	The ratio of the deal value to the acquirer's market value of equity.
<i>TENDER</i>	An indicator variable that is equal to 1 if the deal is a tender offer, and 0 otherwise.
<i>DIVER</i>	An indicator variable that is equal to 1 if the bidder and target firm are not in the same industry, and 0 otherwise.
<i>TOE_HOLD</i>	An indicator variable that is equal to 1 for transactions where the bidder had ownership in the target firm prior to the merger, and 0 otherwise.
<i>PUB_TAR</i>	An indicator variable that is equal to 1 if the target firm is a public company, and 0 otherwise.
<i>PRIV_DEBT</i>	An indicator variable that is equal to 1 if the bidder uses private debt to finance the bid, and 0 otherwise.

Additional variables used in supplementary and robustness analyses

<i>CASH_DF1</i>	An indicator variable that is equal to 1 for debt-financed cash acquirers, and 0 for the matched sample of debt-financed non-M&A firms.
<i>CASH_DF2</i>	An indicator variable that is equal to 1 for cash acquirers with debt financing, and 0 for cash acquirers without debt financing.
<i>HIGH_LEV</i>	An indicator variable that is equal to 1 if the firm has leverage higher than the sample median, and 0 otherwise.
<i>TANG</i>	Asset tangibility, defined as $\text{net PPE}/\text{total assets}$.
<i>ASSET_MATUR</i>	Asset maturity, defined as $(\text{gross PPE}/\text{total assets}) \times (\text{gross PPE}/\text{depreciation expense}) + (\text{current assets}/\text{total assets}) \times (\text{current assets}/\text{cost of goods sold})$.
<i>EAR_VOL</i>	The standard deviation of EBITDA to total assets over past three years.
<i>FIRM_SIZE</i>	The log of total assets.
<i>IND_LEV</i>	The average industry (2-digit SICs) leverage.
<i>INTER_RATE</i>	The log of the all-in-drawn interest spread on the bank loan over LIBOR.

<i>FIN_COV</i>	The log of the number of financial covenants included in a loan.
<i>LOAN_SIZE</i>	The amount borrowed scaled by total assets.
<i>INST</i>	An indicator variable that is equal to 1 if the loan's type is term loan B or C, and 0 otherwise.
<i>REVOL</i>	An indicator variable that is equal to 1 if the loan is a revolver, and 0 otherwise.
<i>MATUR</i>	The number of months between the loan's issue date and the loan maturity date.
<i>PRICING</i>	An indicator variable that is equal to 1 if the loan contract includes a performance pricing provision, and 0 otherwise.
<i>PROFIT</i>	The ratio of EBITDA to total assets.
<i>TOTAL_SI</i>	Total special items multiplied by negative one and scaled by sales.
<i>NON_SHIFT_SI</i>	Non-shiftable income-decreasing special items, defined as (goodwill write-offs + gains/losses on asset sales) $\times (-1)$ / sales when special items are income-decreasing, and 0 otherwise.
<i>SHIFT_SI</i>	Shiftable income-decreasing special items, defined as (special items – <i>NON_SHIFT_SI</i>) $\times (-1)$ / sales when special items are income-decreasing, and 0 otherwise.
<i>BSIZE</i>	The log of the total number of directors on the board.
<i>BINDEP</i>	The proportion of independent directors on the board.
<i>BOUT</i>	The average number of outside directorships held by independent directors.
<i>BTEN</i>	The average tenure of independent directors on the board.
<i>ALTER_UE_CE</i>	An alternative measure of unexpected core earnings, derived by replacing current year total accruals with lagged and current year stock returns in McVay's (2006) expected cored earnings model. The model is estimated cross-sectionally for each industry (2-digit SICs) with at least 15 observations in a given year.
<i>ALTER_DWCA</i>	An alternative measure of discretionary working capital accruals, derived by including current growth in sales in modified Jones (1991) model that includes lagged return on assets as a control for extreme operating performance. The model is estimated cross-sectionally for each industry (2-digit SICs) with at least 15 observations in a given year.
<i>UE_ΔCE</i>	Unexpected change in core earnings, defined as the residuals from McVay's (2006) change in expected core earnings model. The model is estimated cross-sectionally for each industry (2-digit SICs) with at least 15 observations in a given year.
