**Target Firm Earnings Management, Acquisition Premium and Shareholder Gains**

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**Abstract**

Using a sample of U.S. domestic deals from 1990-2016, we find that bidders adjust the amount of premium paid in mergers and acquisitions (M&As) based on the levels of earnings management at target firms. However, the way a firm manipulates earnings upward matters: earnings management via real activities manipulation is more detrimental than discretionary accruals. As a result, target firms that engage in real earnings management receive lower premiums in M&As, while accruals management has no effect on premiums. Correspondingly, we find that the targets’ M&A announcement period cumulative abnormal returns are inversely related to their level of real earnings management, while the returns are not related to accruals management. Further analyses confirm that target shareholders' wealth is not driven solely by undervaluation, expected synergy and managerial hubris, but also reflect bidders’ perception of the target firms' earnings quality based on real earnings management.

**Keywords**: Mergers and Acquisitions, Earnings Management, Discretionary Accruals, Real Activities Manipulation.

**JEL Classification**: G14, G32, M4, M41

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**Introduction**

In this paper, we show how bidders consider earnings management at target firms in determining the premium paid to the targets. Research by De Angelo (1986), Easterwood (1998), Erickson and Wang (1999), and North and O’Connel (2002) suggests that target firms manage earnings upwards to dissuade shareholders from accepting a bidder’s offer and/or to extract more wealth from the M&A transaction. Discerning bidders, though, will assess the quality of the reported earnings before placing a bid. In this paper, we argue that bidder firms analyze the earnings quality of target firms in determining the amount of M&A premium to pay. We differentiate between accruals management and real activities manipulations since their long-term effects on the ability of a firm to generate future cash flows differ and, therefore, they would affect bidder firms’ differently post-acquisition. Bidders would be apprehensive of target firms that use manipulation techniques that are less likely to be spotted (such as, real activities manipulations) and/or use more than one method to manipulate earnings.

Accruals-based earnings[[1]](#footnote-1) management includes changes in accounting methods and reporting practices which can be easily spotted in a firm’s accounts. Examples include the choice of depreciation methods as well as the creation of reserves. Conversely, real activities manipulations[[2]](#footnote-2) involve alterations to operational decisions that are not reported in a firm’s financial statements. Managers can easily justify real activities manipulations as operational decisions. Examples of real activities management include the buildup of inventory, under-invoicing, acceleration of the timing of sales through increased price discounts or more lenient credit terms, and reduced investments in research and development (R&D) expenditure. As a result, the cash flow effects of real activities manipulations are more significant than those of accruals management as documented by Roychowdhury (2006) and Cohen and Zarowin (2010).

Consider a firm that cuts its R&D expenditure to save on costs (i.e., it engages in real activities manipulation) and, accordingly, it reports a higher current earnings figure. The lack of R&D investment will inhibit the firm’s future growth and its ability to compete with rival firms, which in turn will adversely affect its future cash flows. In contrast, a firm that engages in discretionary accruals management by changing its method of depreciation is not altering its future cash flows significantly as the total of depreciation over the life of the fixed asset will be the same irrespective of the depreciation method. Cohen and Zarowin (2010) refer to real activities manipulations as actions taken by managers that deviate from normal business practices. They suggest that the cash flow consequences of real activities manipulation are more substantial than accruals-based earnings management.

We hypothesize that bidders and investors would assess the wealth consequences of a target firm's earnings management in M&As. While earnings management techniques fall into two categories, i.e., accruals-based and real activities management, their effects, as explained above, are unequal. We expect the wealth effects of real activities manipulations to be more damaging. Using a sample of U.S. domestic takeovers of publicly-traded targets from 1990 to 2016, we find that bidders adjust the amount of premium paid in M&As based on the level of real earnings management activities at target firms. M&A premium refers to the excess of the deal value over the target’s market value before the M&A announcement. We find that bidders pay lower premiums for targets that engage in real activities manipulation but not for targets that manage discretionary accruals upwards. The findings persist in various subsamples based on deal, bidder and target characteristics and sub periods. We also find that target’s M&A announcement cumulative abnormal returns (CARs) are inversely related to target’s level of real earnings management. Our findings suggest that M&A premiums reflect bidders’ perception of targets’ earnings quality via real earnings management.

We assume in this paper that real earnings management is used to inflate the reported earnings of the target firm and, higher reported earnings figures lead to higher but artificially high market values. As such, firms that engage in earnings management would eventually be subject to a correction in value, which in our case, takes place at the time of an M&A. Technically, the more positive is our proxy for earnings management, the more the firm is engaged in misleading investors, and vice-versa.

Our study is related to Raman, Shivakumar, and Tamayo (2013). They study how the quality of targets' earnings applying accrual-based metrics affects bidders' takeover decisions, and find that in negotiated transactions, there exists a significant negative relation between targets' earnings quality and takeover premium. We extend this strand of the literature by examining how real earnings management affects valuations in M&As. However, unlike Raman et al. (2013), we do not find a statistically significant inverse association between M&A premium and target firms' accruals quality (unlike real earnings management). We confirm our findings using two measures of premium, i.e., firstly, using target firms' announcement period cumulative abnormal returns and, secondly, using the difference between the deal value and a target's market value. Thus, after accounting for real earnings management, accruals quality loses its significance in determining M&A premiums and target firm shareholders' return. It could be due to a host of reasons. First, as evidenced by Zang (2012), managers use real activities manipulation and accrual-based earnings management as substitutes in managing earnings. Thus, if more firms are making lesser use of accrual-based earnings management (favoring the use of real earnings management instead), it loses its significance in determining M&A premiums. Second, as documented by Cohen, Dey, and Lys (2008), due to the tightening of regulations, firms are switching from accrual-based to real earnings management methods. Third, to the extent that real activities manipulations affect cash flows while accrual-based earnings management does not (Cohen and Zarowin, 2010), then the valuation consequences of real earnings management would be more severe than accrual-based earnings management. Fourth, the artificial inflation in market value caused by real earnings management gets corrected during the due diligence process that accompanies M&As. Khurana, Pereira, and Zhang (2018) find that real earnings smoothing is positively associated with firm-specific stock price crash risk.

The rest of the paper is organized as follows. We review the literature and develop our hypotheses in Section 2. Sample details and descriptive are provided in Section 3; we explain our methods and present the results in Section 4. We conclude the paper in Section 5.

**2. Literature Review and Hypothesis Development**

***2.1. Related Literature***

It is well documented that firms manipulate accounts to inflate reported earnings (Fields, Lys, and Vincent, 2001). Erickson and Wang (1999) investigate whether acquiring firms attempt to increase their reported earnings and thus improve their stock price before a stock-for-stock merger to reduce the cost of buying the target. In a sample of stock-based acquisitions completed between 1985 and 1990, they find that bidders manage earnings upwards in the periods preceding the merger agreement. Furthermore, the higher the relative size of the merger, the more likely is the bidder to engage in earnings management. Louis (2004) finds that bidders overstate their earnings in the quarter preceding a stock swap announcement. Bidders’ stock price falls following the announcement, and financial analysts fail to detect the bidders’ motivations all along.

Earnings manipulations can also lead to short-term benefits to target firms. Targets have an incentive to use earnings management techniques that are well within the confines of generally accepted accounting principles (GAAP) to achieve their objectives in the M&A negotiations (see also Anilowski, Macias and Sanchez (2009), Erickson and Wang (1999), and French and McCormick (1984)). For instance, in their attempt to depress the stock price and reduce the purchase price, managers of target firms are motivated to manipulate earnings downward prior to management buyouts (DeAngelo, 1986; Perry and Williams, 1994). Anilowski *et al*. (2009) find that earnings management influences a target's decision to sell via an auction instead of a one-on-one negotiation. The auction limits the level and timing of the information that bidders can scrutinize, and bidders end up paying higher M&A premium in auctions. Ben-Amar and Missonier-Piera (2008) find that managers of friendly takeover targets manage earnings downwards in the year preceding the transaction. It is in contrast to a hostile takeover where targets are more apt to manage earnings upwards.

Examining a sample of 110 target firms from 1985 to 1989, Easterwood (1998) finds evidence of increased accrual-based earnings management activities at target firms in the quarters leading to a takeover. Anagnostopoulou and Tsekrekos (2013) find that targets that are publicly seeking a buyer are likely to manage accruals to deflate earnings and to become a more price-attractive target. This is especially true in countries with highly competitive M&A markets. They also document that earnings management positively affects abnormal returns around M&A announcements. They explain that since targets tend to gain more from an M&A announcement, that effect is stronger in more- compared to less competitive environments.

M&A targets are often encouraged by bidders to depress their earnings and cash flow figures once the deal parameters are set (Chen, Thomas, and Zhang, 2013) ―for example, target firms are encouraged to accelerate payments, extend collection period and overstate potential liabilities. These manipulations allow the target firms to preserve wealth that is subsequently transferred to the bidder firms post-M&A. Chen *et al*. (2013) find that such tactics boost bidders’ financial performance post-acquisition. Anilowski, Macias, and Sanchez (2009) examine the potential impact that earnings manipulation by a target’s management can have on the method of sale decision (i.e., auction versus negotiation). They find that earnings management is positively related to a target’s decision to sell via an auction. Auctions, as opposed to a sale using one-on-one negotiations, limit a bidder’s ability to scrutinize the accounts of the target firm thoroughly.

Kim (2013) studies the impact of mutual fund pressure on M&As. He finds that high-quality financial accounting information helps to minimize the effects of agency costs in M&As. Bidders that produce high-quality accounting information are less subject to pressures from mutual fund managers. Marquardt and Zur (2014) find that target firms’ accruals quality is negatively associated with the use of auctions, positively related to acquirer returns and the likelihood of deal completion. Raman, Shivakumar, and Tamayo (2013) find that bidders prefer negotiated takeovers in deals involving targets with poor earnings quality and bidders pay lower M&A premiums for such targets. Using common stock as the method of payment allows the bidder to share the risk to its shareholders with the shareholders of the target firm. McNichols and Stubben (2015) examine whether investors welcome targets that disclose higher-quality accounting information. They find that investors react positively to the quality of information on target firms by bidding up the acquirers’ share price at M&A announcements.

To a large extent, these studies focus on accruals-based manipulation, which is achieved by changing accounting methods and/or assumptions in financial reporting without necessarily altering the operations - for instance, overstating accruals lead to inflated reported earnings. In addition to accrual manipulation, though, firms might also manage earnings by altering real activities. Zang (2012) defines such activities as “*a purposeful action to alter reported earnings in a particular direction, which is achieved by changing the timing or structuring of an operation, investment, or financing transaction, and which has suboptimal business consequences*” (p. 676). Zang also shows that the extent of accruals-management used at year-end depends on the outcome of real activities manipulation throughout the year. Thus, managers trade off the two approaches based on their relative costs. Besides, as the level of firm scrutiny intensifies, more managers are opting for real activities manipulation, which is harder to detect (Cohen, Dey, and Lys, 2008). Thus, analyzing only one form of earnings management (i.e., accruals-based ones) would not explain the overall effects of earnings management on manipulating firms (see also Fields, Lys, and Vincent, 2001).

***2.2 Hypotheses***

The prior evidence as discussed above is based on accruals management while our focus is on real activities manipulations. In a survey of CFOs, Dichev, Graham, Harvey and Rajgopal (2013) find that “*about 50% of earnings quality is driven by non-discretionary factors*” (similar evidence is documented in Graham, Harvey and Rajgopal, 2005), which suggests that real activities manipulations are used by managers as often as other methods. Zang (2012) explains that there is a greater likelihood for firms to engage in real activities manipulation, especially when firms are constrained in their use of accrual-based earnings management due to heightened scrutiny or overuse in prior years.

We add to the literature on earnings management around M&A transactions by examining the M&A premium paid for targets that use either or both earnings management methods, i.e., accruals management and real activities manipulations. We hypothesize that earnings management signals the quality of a target firm in M&A deals, i.e., higher earnings management signals poor quality. Thus, the more a target firm engages in earnings management, the lower is its quality to the M&A bidder. The fact that a target firm is engaging in earnings management implies that it is trying to project an image that is not representative of its true current state of affairs. It is plausible to assume that such earnings manipulations can potentially affect the bidder’s firm operations in the long run. As shown in Figure 1, and to the extent that earnings management is suspected at a target firm, we expect to find an inverse association between the premium paid by bidders and the level of earnings management at target firms. We hypothesize that earnings management signals the quality of a target firm in M&A deals. The more a target firm engages in earnings management, the lower is its quality to the M&A bidder. Thus, the lower the M&A premium paid for the target that manages earnings.

|  |
| --- |
| **Figure 1: Relationship between M&A Premium Paid and Target Quality Measured by Earnings Management** |
|  | Earnings Management by Target: |
|  | Low(High-quality target) | High(Low-quality target) |
| Premium paid by Bidder: |  |  |
| Low | 🗶 | ✓ |
| High | ✓ | 🗶 |
| Keys: 🗶 represents less likely; ✓ represents more likely |

The concept of real earnings management encompasses a whole set of operational changes in an effort to accrue earnings sooner than later. They are not meant to improve the long-run earning capacity of the firm but rather to allow the firm to realize in as much as is possible potential earnings immediately based on the firm's current capacity. Whether a deal is structured as friendly or hostile, investors expect the bidder to perform the necessary due diligence and to assess the quality of the operations of the target firm to arrive at a purchase price. This price would ideally reflect the nature of the changes made to the target firm's operations, which in our case is embodied in the various real earnings management variables. Thus, we hypothesize that real earnings management affect pricing in M&As.

However, and as argued earlier, the quality of the earnings management technique used matters. Unlike accruals-based earnings management, the implications of real activities manipulations can be far more damaging (see also Gunny, 2010). Take, for instance, an inability of the target firm to come up with new products since it has suppressed a lot of research and development (R&D) activities. Even if earnings management does not necessarily affect the target firm's potential when merged with the bidder's business, the bidder firm will need to invest more to fix the damages caused by real activities manipulations to enable the target firm to reach its potential. To the extent that bidders assess targets' quality based on the type of earnings management technique used, we expect bidders to reduce further the premium for targets engaged in real activities manipulations as compared to targets engaged in accruals-based earnings management.

**3. Data and Sample Description**

The sample of domestic U.S. mergers and acquisitions (M&As) is downloaded from the Thomson One Banker Deals database. The sample period extends from 1990 to 2016. Targets are U.S. publicly listed firms. We focus only on publicly-traded targets because premium data and accounting data to estimate earnings management activities are only available for this group. The deal value is more than $10 million. Premium paid is between 0% and 100%. We exclude financial targets (SIC codes 6000-6999) and utility firms (SIC 4900-4999) as they are heavily regulated.

We present the sample distribution in Table 1. The total number of M&A deals analyzed is 3,588. We observe a surge in M&A activity between 1995 and 2000. We also present the mean and median statistics on $Premium$, which is defined as the percentage difference between the deal value and the target’s market value the day preceding the M&A announcement. The yearly average of $Premium$ ranges between 32.02% and 28.23%. We also present various deals, bidder, and target firms’ characteristics. Twenty-nine percent of the deals occur between firms in the same industry; 23% of the bidders are private firms; 19% are financial bidders; 50% are high-tech targets. Twenty-nine percent of the deals are stock swaps; 5% of the deals involve more than one bidder; target firm initiates 18% of the deal; 53% of the targets are also owned by insiders; analysts follow 77% of the targets; and 52% of the targets beat analysts’ forecasts in the preceding year.

[INSERT TABLE 1 ABOUT HERE]

Table 2 provides the summary statistics of the target and acquirer characteristics. The average deal value is $1,600.68 million. The mean and median values of $Premium$ are 32% and 28%, respectively. Bidder firms are significantly larger than target firms in terms of both assets and market capitalization. On average, target firms experience higher sales growth rate than other firms in the same industry; their industry adjusted sales growth is 5.3%. They are however slightly undervalued relative to their industry peers; the industry-adjusted market-to-book ratios average 0.986.

[INSERT TABLE 2 ABOUT HERE]

**4. Earnings Management Measures at Target Firms**

In this section, we describe how we develop measures of accruals-based earnings management and real earnings management using data in the year prior to the takeover. We follow the methods developed by Dechow and Dichev (2002), Ashbaugh et al. (2003), Roychowdhury (2006), Cohen *et* *al*. (2008), Cohen and Zarowin (2010) and Zang (2012).

***4.1. Real Activities Manipulation***

Following Roychowdhury (2006), we construct three measures of real activities manipulation including (1) abnormal level of production costs, (2) abnormal level of discretionary expenditure and (3) abnormal operating cash flow. To obtain abnormal production costs, we first estimate the normal level of production costs as follows:

|  |  |
| --- | --- |
| $$\frac{PROD\_{i,t}}{Assets\_{i,t-1}}=k\_{0}+k\_{1}\frac{1}{Assets\_{i,t-1}}+k\_{2}\frac{SALES\_{i,t}}{Assets\_{i,t-1}}+ k\_{3}\frac{∆SALES\_{i,t}}{Assets\_{i,t-1}}+k\_{4}\frac{∆SALES\_{i,t-1}}{Assets\_{i,t-1}}+ϵ\_{i,t}$$ | (1) |

where $PROD\_{i,t}$ is the sum of the cost of goods sold in year $t$ and the change in inventory during the year for firm $i$, $Assets\_{i,t-1}$ is the total assets in year $t-1$, $SALES\_{i,t}$ is the net sales in year $t$, $∆SALES\_{i,t}$ and $∆SALES\_{i,t-1}$ represent changes in annual sales in years t and t-1, respectively. We estimate the model for every industry in each year using the Fama-French 48-sector industry classification codes. The abnormal production costs is measured as the estimated residual of the regression. Higher residuals are synonymous to increased inventory levels; reduced cost of goods sold and inflated earnings.

To obtain the abnormal level of discretionary expenses, we first estimate the normal level of discretionary expenditure as follows:

|  |  |
| --- | --- |
| $$\frac{DISX\_{i,t}}{Assets\_{i,t-1}}=k\_{0}+k\_{1}\frac{1}{Assets\_{i,t-1}}+k\_{2}\frac{SALES\_{i,t-1}}{Assets\_{i,t-1}}+ϵ\_{i,t}$$ | (2) |

where $DISX\_{i,t}$ is the discretionary expenditure (i.e., the sum of research and development ($R\&D$), advertising, and selling, general and administrative ($SG\&A$) expenditure) in year $t$, $Assets\_{i,t-1}$ is the total assets in year $t-1$ and $SALES\_{i,t-1}$ is the net sales in year $t-1$. We estimate the above regression cross-sectionally for all industry-years. The abnormal discretionary expenditure is measured as the estimated residual from the regression. Following standard practice, we multiply the abnormal discretionary expense variable by $-1$ such that the resulting positive values imply higher manipulations of discretionary expenses.

To obtain abnormal operating cash flows, we first estimate the normal level of operating cash flows as follows:

|  |  |
| --- | --- |
| $$\frac{CFO\_{i,t}}{Assets\_{i,t-1}}=k\_{0}+k\_{1}\frac{1}{Assets\_{i,t-1}}+k\_{2}\frac{SALES\_{i,t}}{Assets\_{i,t-1}}+ k\_{3}\frac{∆SALES\_{i,t}}{Assets\_{i,t-1}}+ϵ\_{i,t}$$ | (3) |

where $CFO\_{i,t}$ is the difference between net cash flow from operating activities and extraordinary items and discontinued operations scaled by asset in year t for firm $i$. $Assets\_{i,t-1}$ is the total assets in year $t-1$, $SALES\_{i,t}$ is the net sales in year $t$, $∆SALES\_{i,t}$ represents change in annual sales. We estimate the model for every industry in each year using the Fama-French 48-sector industry classification codes. The abnormal operating cash flow is measured as the estimated residual of the regression. Following standard practice, we multiply the abnormal operating cash flow variable by $-1$ such that the resulting positive values imply higher manipulations of operating cash flows.

Cohen *et al*. (2010) suggest that firms that manage their earnings upward tend to have unusually low cash flow from operations, and/or unusually low discretionary expenses, and/or unusually high production costs. Our measure of total real earnings management ($RM$) is the sum of the three variables: abnormal production cost, abnormal discretionary expenses, and abnormal cash flows from operations. The higher the amount of this aggregate measure, the more the firm is engaged in real activities manipulation.

***4.2. Unexpected Real Activities Manipulation***

Zang (2012) explains how managers consider the tradeoff between the costs and benefits of real activities manipulation before engaging in such activities.[[3]](#footnote-3) Thus, alongside the aggregate measure for real activities manipulation, Zang measures an unexpected component. Following Zang (2012), we construct a measure of unexpected real activities manipulation, which is the estimated residual ($u\_{t}$) from equation (4) below. Using unexpected real activities manipulation allows us to see the investor response to firms that engage in abnormally high levels of real activities manipulations. In addition, results based on unexpected real activities manipulations are more robust from an economic standpoint.

|  |  |
| --- | --- |
| $$RM\_{i,t}=k\_{0}+k\_{1}MKTSH\_{i,t-1}+k\_{2}ZSCORE\_{i,t-1}+k\_{3}INST\_{i,t-1}+k\_{4}TAX\_{i,t}+k\_{5}BIG8\_{i,t}+k\_{6}TENURE\_{i,t}+k\_{7}SOX\_{t}+k\_{8}NOA\_{i,t-1}+k\_{9}CYCLE\_{i,t-1}+k\_{10}ASSET\_{i,t}+k\_{11}MKBK\_{i,t}+k\_{12}ROA\_{i,t}+k\_{13}IMR\_{i,t}+ε\_{i,t}$$ | (4) |

where $RM\_{t}$ is the total real earnings management measure as explained above. *MKTSHi,t-1* is the ratio of a company’s sales to the total industry sales based on the Fama-French (1997) 48-sector industry classification. Market leaders with higher market shares are more likely to engage in real activities manipulations. $ZSCORE\_{i,t-1}$ is a modified version of Altman’s Z-score (Altman 1968, 2000) and is a proxy for financial condition. Higher values for $ZSCORE$ indicate a healthier financial condition and a lower cost associated with real activities manipulation. The $ZSCORE$ is computed as follows:

|  |  |
| --- | --- |
| $$ZSCORE\_{i,t}=0.3\frac{NI\_{t}}{Asset\_{t}}+1.0\frac{Sales\_{t}}{Asset\_{t}}+1.4\frac{Retained Earnings\_{t}}{Asset\_{t}}+1.2\frac{Working Capital\_{t}}{Asset\_{t}}+0.6\frac{\left(Stock Price×Shares Outstanding\right)\_{t}}{Total Liabilities\_{t}}$$ | (5) |

$INST\_{i,t-1}$ is the percentage of institutional ownership. A high value of $INST$ indicates high costs of real activities manipulation. $TAX\_{i,t}$ is the average tax rate. We use the average tax rate instead of the marginal tax rate to avoid loss of observations. $SOX\_{t}$ is a dummy variable representing fiscal years post-2002 following the passage of the Sarbanes-Oxley Act, which should limit the ability of firms to manipulate earnings. *BIG8i,t* is an indicator variable equal to 1 if the firm’s auditor is one of the Big 8, and 0 otherwise; *TENUREi,t* is an indicator variable equal to 1 if the number of years the auditor has audited the client is above the sample median of five years, and 0 otherwise; *NOAi,t-1* is an indicator variable equal to 1 if the net operating assets (i.e., shareholders’ equity less cash and marketable securities and plus total debt) at the beginning of the year divided by lagged sales is above the median of the corresponding industry-year, and 0 otherwise; *CYCLEi,t-1* is the days receivable plus the days inventory less the days payable at the beginning of the year; *ASSETi,t* is the natural log of total assets; *MKBKi,t* is the market-to-book ratio; *ROAi,t* is the return on assets. *IMRt* is the estimated as φ(z)/ϕ(z), where z is the fitted value of the following probit regression index function, φ is the density function for standard normal distribution, and ϕ is the cumulative density function for standard normal distribution:

$$Prob\left[Suspect\_{i,t}=1\right]=Probit\left(k\_{0}+k\_{1}Habitual beater\_{i,t}+k\_{2}Stock issuance\_{i,t}+k\_{3}Analyst following\_{i,t}+k\_{4}MKBK\_{i,t}+k\_{5}Shares\_{i,t}+k\_{6}ROA\_{i,t}+ε\_{i,t}\right) (6)$$

In the above probit regression, the dependent variable is a dummy variable equal to 1 for suspect firms just beating/meeting last-year earnings as firm-years with change in basic EPS excluding extraordinary items from last year between 0 and 2 cents, and 0 otherwise as per Zhang (2012) paper. $Habitual beater\_{i,t}$ is the number of times of beating/meeting analysts’ forecast consensus in the past four quarters. $Stock issuance\_{i,t}$ is a dummy variable equal to 1 if the firm issues equity in the next fiscal year, and 0 otherwise. $Analyst following\_{i,t}$ is the log of 1 plus the number of analysts following the firm. $MKBK\_{i,t}$ is the market to book ratio. $Shares\_{i,t}$ is the log number of shares outstanding; and $ROA\_{i,t}$is the return on assets.

***4.3. Accruals-Based Earnings Management Measures***

We employ three alternative measures of accruals-based earnings management, including discretionary accruals, performance-matched accruals and accruals quality.

Discretionary accrual is measured as the difference between the actual and forecasted values of accruals. The error term from the following regression model represents discretionary accruals:

|  |  |
| --- | --- |
| $$\frac{Accruals\_{i,t}}{Assets\_{i,t-1}}=k\_{0}+k\_{1}\frac{1}{Assets\_{i,t-1}}+k\_{2}\frac{∆SALES\_{i,t}}{Assets\_{i,t-1}}+k\_{3}\frac{PPE\_{i,t}}{Assets\_{i,t-1}}+ϵ\_{i,t}$$ | (7) |

where $Accruals$, representing total accruals, is the difference between earnings before extraordinary items and discontinued operations and cash flows from operations for year $t$ and firm $i$. $Assets\_{i,t-1}$ represents total assets; $∆SALES\_{i,t}$ is the change in sales from the preceding year; and $PPE\_{i,t}$ is the gross value of property, plant and equipment. We estimate the model for every industry in each year using the Fama-French 48-sector industry classification codes. The residual from the regression represents the extent of accruals-based earnings management.

For robustness checks, we also calculate performance-adjusted current accruals following Ashbaugh et al. (2003) and accruals quality following Dechow and Dichev (2002). Performance-adjusted current accrual is the difference between total current accruals (*TCA*) and expected performance adjusted total current accruals (*EPTCA*), where *TCA* and *EPTCA* are computed as follows:

|  |  |
| --- | --- |
| $$TCA = (Change in current asset/Assets) – (Change in current liabilities/Assets) – (Change in cash/Assets) + (Change in short-term and current long-term debt/Assets)$$ | (8) |

*EPTCA* is the residual $ϵ\_{i,t}$ from the following regression:

|  |  |
| --- | --- |
| $$TCA\_{i,t}=k\_{0}+k\_{1}\frac{1}{Assets\_{i,t-1}}+k\_{2}\frac{∆SALES\_{i,t}}{Assets\_{i,t-1}}+k\_{3}ROA\_{i,t-1}+ϵ\_{i,t}$$ | (9) |

Accruals quality is the residual $ϵ\_{i,t}$ from the following regression:

|  |  |
| --- | --- |
| $$WC\\_ACC\_{i,t}=k\_{0}+k\_{1}CFO\_{i,t-1}+k\_{2}CFO\_{i,t}+kCFO\_{i,t+1}+ϵ\_{i,t}$$ | (10) |

where working capital accruals $WC\\_ACC\_{i,t}$ is computed as follows:

|  |  |
| --- | --- |
| $$WC\\_ACC\_{i,t} = (Change in account receivables/Assets) + (Change in inventory/Assets) + (Change in current assets/Assets) – (Change in account payable/Assets) - (Tax payable/Assets) - (Change in other current liabilities/Assets)$$ | (11) |

and,

|  |  |
| --- | --- |
| $$CFO\_{i,t} = (Net cash flow from operating activities – Extraordinary items and $$$$discontinued operations)/Assets$$ | (12) |

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We present the results of the earnings management measures in Panel A of Table 3. The residuals from these six regressions are abnormal production cost (in Model 1), abnormal discretionary expenditure (in Model 2), abnormal operating cash flow (in Model 3), discretionary accruals (in Model 4), performance-adjusted current accruals (in Model 5), and accruals quality (in Model 6). We use the universe of COMPUSTAT firms over the period 1990-2016 in the estimation of these regressions. The regressions are performed for each industry-year combination following Zang (2012). Most of the coefficients are significant and comparable to those reported in Roychowdhury (2006) and Zang (2012). The values of the adjusted R2 range between 28% and 79%.

[INSERT TABLE 3 ABOUT HERE]

Panel B of Table 3 shows the estimation results from the two-stage Heckman procedures to derive the unexpected real earnings management variable. In the first stage, we estimate a probit regression that explains the earnings management suspect firms. Following Zhang (2012), we measure suspects just beating/meeting last-year earnings as firm-years with change in basic EPS excluding extraordinary items from last year between 0 and 2 cents since earnings management is more likely to occur among these firms. We then obtain the inverse Mills ratio to include in the stage-two-regression of earnings management as a control variable to correct for the potential omitted variable problem caused by the non-random sample. Most of the coefficients are consistent and comparable to those reported in Zang (2012). All the independent variables from the Stage 1 regression are statistically significant. From the stage 2 regression, unexpected real earnings management is positively associated with market share, Z-score, post-SOX, net operating assets, total assets and return on assets. Interestingly, post-SOX firms are more likely to engage in real earnings management consistent with Cohen, Dey and Lys (2008). Conversely, unexpected real earnings management is inversely related to the presence of an auditor from the Big 8 accounting firm, the firm’s operating cycle and its market-to-book ratio.

In Panel A of Table 4, we present the mean and median statistics of the raw earnings management variables as well as the match firm-adjusted earnings management variables. We match each target firm with a portfolio of firms that do not engage in mergers and acquisitions in that year. We select three alternative matching portfolios as follows. The first matching portfolio consists of firms in the same industry and same size quintile. We define industry using the Fama-French 48 industry classification codes. The second matching portfolio consists of firms that are in the same industry, size quintile, and market-to-book quintile as the target firm. The third matching portfolio consists of firms that are in the same industry, size quintile, and return on asset quintile as the target firm. The match-adjusted earnings management score is the difference between the target firm’s earnings management score and the earnings management score of the matching portfolios. For the most part, the signs of the different earnings management proxies are consistent irrespective of whether they are raw figures or matched-firm adjusted figures, though in terms of magnitude the raw figures lie above. In Panel B of Table 4, we report a correlation matrix of the various earnings management variables and most are significantly correlated with each other.

 [INSERT TABLE 4 ABOUT HERE]

**5. Results**

***5.1. Comparison of M&A Premium by Firms that engage in Earnings Management versus Matching Firms***

Using each of the earnings management variables, we classify the sample firms into three groups (*Low, Medium* and *High*) alternatively based upon the five real earnings management variables (Panels A through E) and based upon the three accruals-based earnings management variables (Panels F through H). We then compare the M&A premium from the *High* group with that of the *Low* group. We hypothesize that target firms engaging in earnings management receive lower premiums in M&A deals. We present our findings in Table 5. The M&A premium received by the *High* group (which consists of targets that manipulate their earnings the most) is consistently lower than the M&A premium received by the *Low* group (which consists of targets that manipulate their earnings the least) in Panels A through E. The evidence suggests that target firms that engage in abnormally high real activities manipulations tend to be paid lower premiums in M&A deals when compared to target firms that engage in below average real activities manipulations. However, the difference in the premium between the *High* group and the *Low* group based upon accruals-based earnings management (Panels F through H) is not consistent, suggesting no solid relationship between accruals-based earnings management at the target firms and the premium they receive in M&A.

[INSERT TABLE 5 ABOUT HERE]

***5.2. Multivariate Analyses of the Relationship between M&A Premium and Target Earnings Management***

Deal characteristics and the selection of targets with a certain kind of earnings management can be simultaneously determined. To ascertain the real effect of target earnings management on the M&A premium, we need to control for different deal characteristics. For instance, the uncertainty caused by earnings management would be more pronounced among firms characterized by greater information asymmetry. Sophisticated buyers—such as, those that hire the services of “boutique” advisors (Song, Wei and Zhou, 2012) and financial bidders—are less likely to overpay for targets. Thus, we perform a regression analysis to examine the impact of earnings management on the premium paid by bidders $PREMIUM\_{i}$ as follows:

|  |  |
| --- | --- |
| $$PREMIUM\_{i}=k\_{0}+k\_{1}EARNINGSMGMT\_{i}+k\_{2}DEALVAL\_{i}+k\_{3}STOCKSWAP\_{i}+k\_{4}HOSTILE\_{i}+k\_{5}SALEGR\_{i}+k\_{6}MKBK\_{i}+k\_{7}TECH\_{i}+k\_{8}RELATED\_{i}+k\_{9}INITIATED\_{i}+k\_{10}COMPETING\_{i}+k\_{11}FINANCIAL\_{i}+ k\_{12}PRIVATE\_{i}+k\_{12}SOX\_{i}+k\_{13}INDPREMIUM\_{i}+ϵ\_{i}$$ | (9) |

where $EARNINGSMGMT\_{i} $represents proxy measures of earnings management in separate regressions. The variables are explained in Appendix 1. We expect the coefficient $k\_{1}$ to be negative to support the hypothesis that real earnings management adversely affects the premium target firms receive in M&A deals. There are five real earnings management variables (Models 1 through 5 in Table 6) and three accruals-based earnings management variables (Models 6 through 8 in Table 6).

The selection of the remainder variables follows previous studies on the determinants of M&A premium (i.e., Walkling and Edminster (1985), Kaufman (1988), Lang, Stulz, and Walkling (1989), Servaes (1991), Palia (1993), Cotter and Zenner (1994), Schwert (2000), Flanagan and O’Shaughnessy (2003), Porrini (2006) and Madura and Ngo (2008)).

$DEALVAL\_{i} $is the natural logarithm of the deal value. We expect that M&A premiums will be lower in small compared to large deals. The lower the amount of the premium paid, the more resources are left to be invested in the future success of the M&A.

$STOCKSWAP\_{i} $is a dummy variable representing M&A transactions paid in kind. Since shareholders demand a compensation for tax in cash offers, bidders pay a larger premium in cash-financed acquisitions as opposed to stock-financed ones (Huang and Walkling (1987) and Savor and Lu (2009)).

$HOSTILE\_{i}$ is a dummy variable equal to 1 for hostile deals and 0 otherwise. Cotter and Zenner (1994) find that the abnormal return to bidders that pursue hostile takeovers is worse on average than friendly takeovers.

$SALEGR\_{i}$ and $MKBK\_{i}$ are the target firm’s industry-adjusted sales growth and market-to-book ratio in the preceding year. Bidders are expected to pay a premium for higher growth firms, i.e., those exhibiting high sales growth and/or market-to-book ratios.

$TECH\_{i}$ is a dummy variable representing high-tech targets. Some industries are inherently more prone to earnings management than others—for example, valuing the intangible assets or “soft” assets or assets internally generated by high-tech firms is a more subjective exercise. We control for this variable as it is widely documented that bidders tend to overpay for tech firms (for example, during the dotcom bubble). Benou and Madura (2005) find that high-tech targets usually trade at a premium.

$RELATED\_{i} $is a dummy variable representing M&A deals where the bidder and the target share the same Fama-French 48-sector classification. Flanagan and O'Shaughnessy (2003) argue that, to the extent that merger of companies in the same industry is likely to create value through synergy, the bidders are willing to pay more for targets in the same industry.

$INITIATED\_{i }$– Targets that are desperate for sale will manage their earnings downward to reduce their price in the M&A market (Anagnostopoulou and Tsekrekos, 2013). They are also more likely to have operational deficiencies and hence receive lower premiums, which contributes to a positive relation between abnormal accruals and M&A premium. Following Masulis and Simsir (2013), we search the “Background of the Merger” or “Material Contacts and Board Deliberations” sections of the forms 8K, DEFM14A, PREM14A, 14D9, TO-T and S-4 filed by acquirer and target firms from the SEC website to identify whether the target initiates the deal. We are able to identify 18% of the target firms that initiate the deals. We create a dummy variable for whether the target initiates the deal and include this variable in the cross-sectional analysis of the merger premium.

$COMPETING\_{i} $is a dummy variable equal to 1 for deals with more than one bidder involved and 0 otherwise. Jennings and Mazzeo (1993) and Khanna (1997) suggest that the M&A premium must be high enough to overcome resistance to selling (i.e., hostile bids). Thus, premiums in unrivaled bids are small, while, in competing deals, the winning bid usually requires a high premium.

$FINANCIAL\_{i} $is a dummy variable representing bidders in the financial industry. Negotiating deals is common in the financial industry and we consider financial bidders to be sophisticated investors in the M&A market. They are expert at valuing companies and, therefore, are less likely to overpay for targets.

$PRIVATE\_{i} $– Bargeron, Schlingemann, Stulz and Zutter (2008) find that target shareholders receive a higher premium when the acquirer is a public firm rather than a private one. Furthermore, most deals financed by private firms are cash deals since their shares are not publicly traded, and the method of payment tends to affect the price paid for targets (Travlos, 1987). Thus, we use a dummy variable to represent private bidders in the multiple regressions.

*SOX* is a dummy variable representing the years after the passage of the 2002 Sarbanes-Oxley Act (SOX). SOX requires firms to attest to their internal control weaknesses. As a result, Bartov and Cohen (2009) find a decline in the use of upward accrual-based earnings management in the post-SOX period and an increase in upward real earnings management.

$INDPREMIUM\_{i}$ is the median of the premiums paid for other firms in the same industry as the target firm in the preceding year. Madura and Ngo (2008) show that the M&A market goes in cycles and it is important to control for the average M&A premium in the target firm’s industry.

We present the results from the multiple regressions of the M&A premiums in Table 6. Remember that the *Abnormal Discretionary Expense* variable and the *Abnormal Operating Cash Flow* variables are multiplied by $-1$ such that positive values imply higher manipulations of discretionary expenses and operating cash flows. The coefficients on the four measures of real earnings management (*Abnormal Production Cost, Abnormal Discretionary Expenses, Total Real Earnings Management and Unexpected Total Real Earnings Management*) are negative and significant. The results suggest that bidders pay lower M&A premiums for target firms that manipulate earnings through real activities, which are consistent with the univariate results in Table 5. The coefficient on the *Abnormal Operating Cash Flows* variable, however, is positive and insignificant. As mentioned by Zang (2012) the true effects of abnormal operating cash flows are uncertain. For instance, overproduction and discounts cause operating cash flows to decrease while cutting discretionary expenses increases them. Thus, different approaches to real earnings management produce different results in a firm’s operating cash flows.

 Observe that none of the coefficients representing accruals management at target firms (*Discretionary Accruals* in Model 6, *Performance-adjusted Current Accruals* in Model 7, and *Accruals Quality* in Model 8) are statistically significant. The analysis thus far suggests that the signals conveyed by real activities management differ from discretionary accruals. If earnings management conveys target firms’ quality, then real activities-based manipulations are a better proxy. Our findings also suggest the importance to control for real activities manipulations besides accruals management.

 [INSERT TABLE 6 ABOUT HERE]

In Table 6, we also find that M&A premiums are lower, i.e., inversely related to the following variables: *Deal Value* (consistent with Alexandridis, Fuller, Terhaar and Travlos (2013)) and *Private Bidders* (consistent with Bargeron, Schlingemann, Stulz and Zutter (2008)). Conversely, hostile deals, high-tech targets, related targets and competing deals receive higher M&A premiums. We also find that the M&A premium is positively related to the median M&A premium paid in the industry in the preceding year (similar to Madura and Ngo (2008)).

***5.3. Target Firms’ Cumulative Abnormal Returns***

 We measure the target’s M&A announcement period cumulative abnormal returns (CARs) as an alternative measure of the premium that their shareholders receive from the deal. The abnormal return is the difference between a target firm’s actual return and a measure of its expected return. We derive three alternative measures of expected return using the following methods: (i) market model, (ii) Fama-French three-factor model and (iii) matched firm adjusted. The parameter estimates for the market model and Fama-French three-factor model are obtained using daily stock return data over the period (-300, -30) in days preceding the date of the M&A announcement, i.e., day 0. We adjust the target firm’s stock returns by subtracting the mean stock return of a corresponding matching portfolio. We select three alternative matching portfolios as follows. Match 1―The first matching portfolio consists of firms in the same industry and same size quintile. We define industry using the Fama-French 48 industry classification codes. Match 2―The second matching portfolio consists of firms that are in the same industry, size quintile, and market-to-book quintile as the target firm. Match 3―The third matching portfolio consists of firms that are in the same industry, size quintile, and return on asset quintile as the target firm.

Using each of the earnings management variables, we classify the sample firms into three groups: *Low vs. Medium vs. High*. We then compare the announcement period cumulative abnormal returns (CARs) of target firms between the *High*- and *Low* group. We hypothesize that target firms’ CARs would be inversely related to real earnings management, which tend to affect the firm's operations and finances adversely in the longer run. We present our findings in Table 7. Consistent with the results in Table 5 for premium, the CARs of the *High* earnings management group (except for abnormal operating cash flows) are consistently lower than the CARs from the *Low* earnings management group. We perform the same analysis but using the three accruals management variables in the last three panels of Table 7. The difference in CARs between the *High* and *Low* accruals management groups are statistically insignificant.

[INSERT TABLE 7 ABOUT HERE]

To confirm that the results hold in a multivariate setup, we run multiple regressions on the different measures of CARs and present our findings in Table 8. We use the same set of explanatory variables as in equation (9). The coefficient representing *Unexpected Total Real Earnings Management* is consistently negative and highly significant irrespective of the measure of target firms’ CARs. The results suggest that target firm real activities manipulations have a significant effect on investors’ perceptions of the success of the M&A. The results on the other control variables are consistent with those from the regressions of the M&A Premium. More specifically, target firms’ CARs are lower and/or inversely related to the *Deal Value*, *Stock Swap* and *Private Bidders*. Conversely, *Hostile Deals*, *High-Tech Targets, Competing Deals* and *Post-SOX Deals* are all positively related to the target firms’ CARs.

[INSERT TABLE 8 ABOUT HERE]

***5.4. Additional Control Variables – The Role of Analysts and Insider Ownership***

In this section, we perform the multiple regressions of *Premium* (in Table 9) and target *CARs* (in Table 10) controlling for the role of analysts and insider ownership. Managers use abnormal accruals to signal private information and bidders interpret pre-M&A abnormal accruals as a sign of managerial optimism rather than managerial opportunism (Louis and Robinson, 2005). Because managerial incentive to signal private information is stronger for firms with little analyst coverage (Louis and Robinson, 2005), it is important to control for analyst coverage. Data on analysts’ coverage and benchmark earnings are obtained from IBES (the Institutional Brokers’ Estimate System). We control for whether the target firm just beats analyst forecast (*Target Beats Benchmark*). Since only 77% of the target firms are followed by analysts, the number of observations in this analysis is smaller than that in Tables 6 and 8.

Prior literature finds that certain target CEOs negotiate special bonuses or golden parachutes for themselves at the expense of target shareholders in the form of reduced premiums (Hartzell, Ofek and Yermack, 2004; Fich, Tran and Walkling, 2013). Since earnings management is largely at the discretion of CEOs, there might be a strong association between target earnings management and target CEO’s personal gains, which in turn affects premiums received by target shareholders. We use insider shareholdings (data obtained from the Thomson One Financial database) as a proxy for CEO shareholdings.

In Table 9, we report the multiple regressions of *Premium*. In Table 10, we report the multiple regressions of *CARs*. The analyses in Tables 9 and 10 are similar to those in Tables 6 and 8, respectively, except for the two additional control variables *Target beats Benchmark* and *Percent of Shares held by Target Insiders*. Consistent with the results in Tables 6 and 8, *Premium* and *CARs* are lower for target firms with more *Unexpected Total Real Earnings Management*.

[INSERT TABLES 9 & 10 ABOUT HERE]

***5.5. Analysis of M&A Premiums by sub periods***

A primary concern relates to the time period of the analysis (years 1990 to 2011). During this period, the accounting rules for business combinations changed at least three times (FASB 141 in 2001 and FASB 141R in 2009). Pooling of interests was eliminated in 2001, and the rules changed for depreciating goodwill, in-process R&D, as well as proportional consolidation was eliminated. Also, with the passage of Sarbanes-Oxley, firms need to attest to the internal control weakness, which affected companies contemplating acquisitions. In this section, we incorporate these changes into our analysis and present our findings in Table 11.

[INSERT TABLE 11 ABOUT HERE]

We report the cross-sectional analyses of the M&A premiums on earnings management variables for each of the following subsample periods: (i) Prior to FASB 141 in 2001; (ii) Post FASB 141 to pre-FASB 141R in 2009; (iii) Post FASB 141R; (iv) Pre-SOX (before 2002); and (iv) Post-SOX (after 2002). The results suggest that the associations between the M&A premium and real earnings management were more significant prior to the passage of the accounting amendments and the Sarbanes-Oxley Act (for instance, see the column Pre-FASB141 and Pre-Sox). Certainly, these amendments serve to curb real activities manipulations and explain why we observe significant breaks in the relationship across the various time periods. It appears that SOX has resolved the issue that we address in this paper. Prior to SOX, firms were pricing real earnings management, but post-SOX they do not, and this is a significant finding. The scrutiny and harsher penalties accompanying SOX have dissuaded target firms from engaging in earnings management, which would explain the lack of significance of the variable in the determination of M&A premiums post-SOX.

***5.7. M&A Premium and Bidder Public Status***

In this section, we perform the cross-sectional analyses of the M&A premium for the subsample of acquisitions by public bidders and acquisitions by private bidders separately and report the results in Table 12. Since we use M&A premiums and CARs as proxies for the value of target firms to reflect their earnings management, we need to account for the differences in premiums and CARs paid by public and private acquirers, separately. This is due to the findings of Bargeron, Schlingemann, Stulz, and Zutter (2008). The authors document a lower premium to target shareholders if a private firm, as opposed to a public firm, makes the acquisition. The coefficient on the *Unexpected Total Real Earnings Management* variable is negative and significant only for the subsample of purchases by public bidders. Note that our earlier findings as well as those of Bargeron *et al*. (2008) point to higher premiums paid by public bidders. Thus, there is more room for adjusting the premium based on the target firm's real earnings management. Conversely, private bidders already pay lower premiums (as documented in the earlier Tables 6, 8-11) and, therefore, there is little need for them to adjust further the premiums based on targets' earnings management.

[INSERT TABLE 12 ABOUT HERE]

***5.8. M&A Premium and Target Firm’s Growth rate***

Collins, Pungaliya, and Vijh (2017) explain how growth and accruals are inherently related. Similar to Dechow, Kothari, and Watts (1998) and McNichols (2000), higher accruals are associated with high growth firms since they require higher investments in working capital. Thus, growth firms could be wrongly associated with discretionary income-increasing accruals. Collins et al. (2017) also show that market-to-book as a proxy for future expected growth is strongly positively related to quarterly accruals even after controlling for the changes in sales. While our focus is on real earnings management, we break the sample into low- and high growths to account for possible differences in the association between earnings management and M&A premiums depending on target firm's growth.

We perform the cross-sectional analyses of the M&A premium by subsamples partitioned on the median target industry-adjusted sales growth rate and on industry-adjusted market-to-book ratio. We present our findings in Table 13. The inverse relationship between real earnings management and the M&A premium show up only for the subsamples of target firms with high industry-adjusted sales growth rate and market-to-book ratio. High-growth firms (both realized proxied by sales growth and potential proxied by market-to-book) are penalized in the M&A market if they are engaged in abnormally high levels of real earnings management. We conclude that investors factor in the extent of real earnings management at target firms despite their realized or potential growth.

[INSERT TABLE 13 ABOUT HERE]

**5. Conclusion**

We examine the consequences of target firm earnings management in mergers and acquisitions (M&A). We find that the levels of real earnings management (RM) at target firms are negatively associated with the M&A premiums paid by bidders, as well as the target M&A announcement period cumulative abnormal returns (CARs). On the contrary, targets with more accrual-based earnings management (AM) are not penalized and experience no wealth effects, which is consistent with the inability of AM to affect a firm’s real operations as opposed to RM. Our results suggest that real activity manipulation is more detrimental than accrual-based manipulation and both bidders and the market penalize target firms undertaking RM in M&A transactions.

Moreover, since M&A premium is the excess of the deal value over the target’s market value before the M&A announcement, the smaller premium for a target firm engaged in RM suggests that target pre-M&A market value is potentially inflated. An M&A transaction though brings about renewed focus and attention that help to bridge the gap between the target firm's pre-M&A value and its potential value to the bidder firm based on its existing level of real earnings management.

Regarding the specifics of real earnings management, abnormal production cost, abnormal discretionary expenses, composite scores of real earnings management, and unexpected total real earnings management exert negative and significant influence on both M&A premiums and announcement period CARs. Conversely, abnormal operating cash flows do not affect the returns to target firm shareholders since firms engaged in abnormally high production cost tend to encounter a resultant decline in their operating cash flows, while unusually low discretionary expenditure produces the opposite effect on cash flows.

However, improvements in accounting standards for business combinations (for example, FASB Statement No. 141) and accounting regulations that seek to enhance the reliability of financial reporting (for instance, the 2002 Sarbanes-Oxley Act (SOX)) have changed the dynamics. The ability of real earnings management to affect M&A premiums and announcement period returns to target firms’ shareholders were present during the pre-FASB 141 and pre-SOX periods. However, following the changes in accounting practice and regulation, respectively, real earnings management became less of a concern for acquirers and investors. This could point to decrease usage of real earnings management by target firms due to stronger internal controls and/or that the pre-M&A value of a target firm reflects more accurately the effects of real earnings management (in the post-SOX era for instance) and that acquirers do not need to adjust M&A premiums downward and investors do not need to penalize these firms in M&As.

**References**

Alexandridis G., K. P. Fuller, L. Terhaar and N. G. Travlos, 2013. Deal size, acquisition premia and shareholder gains. Journal of Corporate Finance 20, 1-13.

Altman, E. 1968. Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy. Journal of Finance 23 (4): 589–609.

Altman, E. 2000. Predicting Financial Distress of Companies: Revisiting the Z-Score and ZETA Models. Working paper, New York University.

Anagnostopoulou S.C. & A. E. Tsekrekos, 2013. Do firms that wish to be acquired manage their earnings? Evidence from major European countries. International Review of Financial Analysis 30: 57-68

Anilowski, C.L., Macias, A.J., Sanchez, J.M., 2009. Target Firm Earnings and the Method of Sale: Evidence from Auctions and Negotiations, Purdue University and University of Arkansas,Working paper.

Ashbough, H., LaFond, R. and Mayhew, B., 2003. Do nonaudit services compromise auditor independence? Further evidence. The Accounting Review 78, 611-629.

Bargeron, L., Schlingemann, F.P., Stulz, R.M., Zutter, C.J., 2008. Why do private acquirers pay so little compared to public acquirers? Journal of Financial Economics 89, 375–390.

Bartov, E., & Cohen, D. A. (2009). The “Numbers Game” in the pre-and post-Sarbanes-Oxley eras. Journal of Accounting, Auditing & Finance, 24(4), 505-534.

Ben-Amar, W. & Missonier-Piera, F. (2008),"Earnings management by friendly takeover targets", International Journal of Managerial Finance, Vol. 4 Iss 3 pp. 232 – 243

Benou, G., & Madura, J. (2005). High-tech acquisitions, firm specific characteristics and the role of investment bank advisors. *The Journal of High Technology Management Research*, *16*(1), 101-120.

Chaney, P. K., Faccio, M., & Parsley, D. (2011). The quality of accounting information in politically connected firms. Journal of Accounting and Economics, 51(1), 58-76.

Chen, S., J. Thomas, and F. Zhang, 2013. Spring-loading when no one is looking? Earnings and cash flow management around acquisitions. Working paper.

Cohen, D., Dey, A., Lys, T., 2008. Real and accrual based earnings management in the Pre and Post Sarbanes Oxley periods, Accounting Review 83, 757–787.

Cohen, D.A., Zarowin, P., 2010. Accrual-based and real activities manipulation activities around seasoned equity offerings. Journal of Accounting and Economics 50, 2-19.

Collins, D. W., Pungaliya, R. S., & Vijh, A. M. (2016). The effects of firm growth and model specification choices on tests of earnings management in quarterly settings. The Accounting Review, 92(2), 69-100.

Cotter, J. F. and M. Zenner, 1994, How managerial wealth affects the tender offer process, Journal of Financial Economics 35, 63–97.

DeAngelo, L., 1986. Accounting numbers as market valuation substitutes: A study of management buyouts of public stockholders. The Accounting Review 67: 77-96.

Dechow, P. M., & Dichev, I. D. (2002). The quality of accruals and earnings: The role of accrual estimation errors. The accounting review, 77(s-1), 35-59.

Dechow, P. M., Kothari, S. P., & Watts, R. L. (1998). The relation between earnings and cash flows. Journal of accounting and Economics, 25(2), 133-168.

Dichev, I.D., Graham, J.R., Harvey, C.R., and Rajgopal, S. (2013) Earnings quality: Evidence from the field, Journal of Accounting and Economics, Volume 56, Issues 2–3, Supplement 1, 15 December 2013, Pages 1–33

Dong, M., Hirshleifer, D., Richardson, S., Teoh, S.-H., 2006. Does investor misvaluation drive the takeover market? Journal of Finance 61, 725–762.

Easterwood, Cintia M., 1998, Takeovers and incentives for earnings management: an empirical analysis. Journal of Applied Business Research 14(1), 29-48.

Erickson, Merle and Shiing-wu Wang, 1999. Earnings management by acquiring firms in stock for stock mergers. Journal of Accounting & Economics, vol. 27, 149-176.

Fama, E., and K. French. 1997. Industry costs of equity. Journal of Financial Economics 43 (2): 153–193.

Fich, E. M., Tran, A. L., & Walkling, R. A. (2013). On the importance of golden parachutes. Journal of Financial and Quantitative Analysis, 48(06), 1717-1753.

Fields, Thomas, Lys, Thomas, Vincent, Linda, 2001. Empirical research on accounting choice. Journal of Accounting & Economics 31, 255–307.

Flanagan, D. and K. O’Shaughnessy, 2003, Core-related acquisitions, multiple bidders, and tender offer premiums, Journal of Business Research 56, 573–85.

French, Kenneth R., and Robert E. McCormick, 1984, Sealed bids, sunk costs, and the process of competition, Journal of Business 57, 417–441.

Graham, J., C. Harvey, and S. Rajgopal. 2005. The economic implications of corporate financial reporting. Journal of Accounting and Economics 40 (1-3): 3–73.

Gunny, K., 2005. What are the consequences of real earnings management? Working Paper, University of Colorado

Gunny, K. A. (2010). The Relation Between Earnings Management Using Real Activities Manipulation and Future Performance: Evidence from Meeting Earnings Benchmarks\*. Contemporary Accounting Research, 27(3), 855-888.

Hartzell J., Ofek E. and Yermack D., 2004. What's in it for me? Personal benefits obtained by CEOs whose firms are acquired. Review of Financial Studies 17, 37-61.

Huang, Y., Walkling, R., 1987. Target abnormal returns associated with acquisition announcements: payment, acquisition form, and managerial resistance. Journal of Financial Economics 19, 329–349.

Jennings, R. and M. Mazzeo, 1993, Competing bids, target management resistance, and the structure of takeover bids, Review of Financial Studies 6, 883–909.

Kaufman, D. J., 1988, Factors affecting the magnitude of premiums paid to target-firm shareholders in corporate acquisitions, Financial Review 23, 465–82.

Khanna, N., 1997, Optimal bidding for tender offers, Journal of Financial Research 20, 322–42.

Khurana, I. K., Pereira, R., & Zhang, E. (2018). Is real earnings smoothing harmful? Evidence from firm‐specific stock price crash risk. Contemporary Accounting Research, 35(1), 558-587.

Kim, S. 2013. Accounting Quality, Corporate Acquisition, and Financing Decisions. Working Paper, University of North Carolina at Chapel Hill.

Lang, L. H. P., R. M. Stulz, and R. A. Walkling, 1989, Managerial performance, Tobin’s Q, and the gains from successful tender offers, Journal of Financial Economics 24, 137–54.

Louis, H., 2004. Earnings management and the market performance of acquiring firms. Journal of Financial Economics, vol. 74, 124-148.

Louis, H. and D. Robinson, 2005. Do managers credibly use accruals to signal private information? Evidence from pricing of discretionary accruals around stock splits. Journal of Accounting and Economics 39, 361-380.

Madura, J. and T. Ngo, 2008, Clustered synergies in the takeover market, Journal of Financial Research 31, 333-356.

Marquardt, C., & Zur, E. (2014). The role of accounting quality in the M&A market. Management Science, 61(3), 604-623.

Masulis, R. W., & Simsir, S. A. (2013). Deal initiation in mergers and acquisitions. ECGI-Finance Working Paper, (371).

McNichols, M. F. (2000). Research design issues in earnings management studies. Journal of accounting and public policy, 19(4-5), 313-345.

North, D.S. and O’Connel, B.T. (2002), “Earnings management and mode of payment in takeovers”, Working Paper, University of Richmond, VA, p. 34.

McNichols, M. F., & Stubben, S. R. (2015). The effect of target-firm accounting quality on valuation in acquisitions. Review of Accounting Studies, 20(1), 110-140.

Palia, D., 1993, The managerial, regulatory, and financial determinants of bank merger premiums, Journal of Industrial Economics 41, 91–102.

Perry, S., T.H.Williams. 1994. Earnings management preceding management buyout offers. Journal of Accounting & Economics 18: 157-179.

Porrini, P., 2006, Are investment banks good for acquisition premiums? Journal of Business Research 59, 90–99.

Raman, K., Shivakumar, L., & Tamayo, A. (2013). Target’s earnings quality and bidders’ takeover decisions. Review of Accounting Studies, 18(4), 1050-1087.

Roychowdhury, S., 2006. Earnings management through real activities manipulation. Journal of Accounting and Economics 42, 335–370.

Savor, P.G., Lu, Q., 2009. Do stock mergers create value for acquirers? Journal of Finance 64, 1061–1097.

Schwert, G., 2000, Hostility in takeovers: In the eye of the beholder? Journal of Finance 70, 2599–2640.

Servaes, H., 1991, Tobin’s Q and the gains from takeovers, Journal of Finance 46, 409–20.

Song, W., Wei, J. D., & Zhou, L. (2012). The value of “boutique” financial advisors in mergers and acquisitions. Journal of Corporate Finance 20, 94-114.

Travlos, N. G. (1987). Corporate takeover bids, methods of payment, and bidding firms' stock returns. The Journal of Finance, 42(4), 943-963.

Walkling, R. and T. Edminster, 1985, Determinants of tender offer premiums, Financial Analysts Journal 41, 27–37.

Zang. A.Y., 2012. Evidence on the Trade-Off between Real Activities Manipulation and Accrual-Based Earnings Management. Accounting Review 87, 675-703.

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| **Appendix A – Variable Definitions** |
| ***Variables*** | ***Definition*** |
| Earnings management variables |
| Abnormal production costs | The residuals from the regression:

|  |  |
| --- | --- |
| $$\frac{PROD\_{i,t}}{Assets\_{i,t-1}}=k\_{0}+k\_{1}\frac{1}{Assets\_{i,t-1}}+k\_{2}\frac{SALES\_{i,t}}{Assets\_{i,t-1}}+ k\_{3}\frac{∆SALES\_{i,t}}{Assets\_{i,t-1}}+k\_{4}\frac{∆SALES\_{i,t-1}}{Assets\_{i,t-1}}+ϵ\_{i,t}$$ | (1) |

where $PROD\_{i,t}$ is the sum of cost of goods sold in year $t$ and the change in inventory during the year for firm $i$, $Assets\_{i,t-1}$ is the total assets in year $t-1$, $SALES\_{i,t}$ is the net sales in year $t$, $∆SALES\_{i,t}$ and $∆SALES\_{i,t-1}$ represent changes in annual sales. We estimate the model for every industry in each year using the Fama-French 48-sector industry classification codes. |
| Abnormal discretionary expenses | The residuals from the regression:

|  |  |
| --- | --- |
| $$\frac{DISX\_{i,t}}{Assets\_{i,t-1}}=k\_{0}+k\_{1}\frac{1}{Assets\_{i,t-1}}+k\_{2}\frac{SALES\_{i,t-1}}{Assets\_{i,t-1}}+ϵ\_{i,t}$$ | (2) |

where $DISX\_{i,t}$ is the discretionary expenditures (i.e., the sum of research and development ($R\&D$), advertising, and selling, general and administrative ($SG\&A$) expenditures) in year $t$, $Assets\_{i,t-1}$ is the total assets in year $t-1$ and $SALES\_{i,t-1}$ is the net sales in year $t-1$. We estimate the above regression cross-sectionally for all industry-years. The abnormal discretionary expenditures is measured as the estimated residual from the regression. We multiply the abnormal discretionary expense variable by -1 such that positive values imply higher manipulations of discretionary expenses. |
| Abnormal operating cash flows | The residuals from the regression:

|  |  |
| --- | --- |
| $$\frac{CFO\_{i,t}}{Assets\_{i,t-1}}=k\_{0}+k\_{1}\frac{1}{Assets\_{i,t-1}}+k\_{2}\frac{SALES\_{i,t}}{Assets\_{i,t-1}}+ k\_{3}\frac{∆SALES\_{i,t}}{Assets\_{i,t-1}}+ϵ\_{i,t}$$ | (3) |

where $CFO\_{i,t}$ is the difference between net cash flow from operating activities and extraordinary items and discontinued operations scaled by asset during the year for firm $i$. $Assets\_{i,t-1}$ is the total assets in year $t-1$, $SALES\_{i,t}$ is the net sales in year $t$, $∆SALES\_{i,t}$ represents change in annual sales. We estimate the model for every industry in each year using the Fama-French 48-sector industry classification codes. The abnormal operating cash flow is measured as the estimated residual of the regression. We multiply the abnormal operating cash flow variable by -1 such that positive values imply higher manipulations of operating cash flows. |
| Total real earnings management | The sum of abnormal production cost, abnormal discretionary expenses, and abnormal cash flows from operations. |
| Unexpected real earnings management | The residuals from the following regression:

|  |  |
| --- | --- |
| $$RM\_{i,t}=k\_{0}+k\_{1}MKTSH\_{i,t-1}+k\_{2}ZSCORE\_{i,t-1}+k\_{3}INST\_{i,t-1}+k\_{4}TAX\_{i,t}+k\_{5}BIG8\_{i,t}+k\_{6}TENURE\_{i,t}+k\_{7}SOX\_{t}+k\_{8}NOA\_{i,t-1}+k\_{9}CYCLE\_{i,t-1}+k\_{10}ASSET\_{i,t}+k\_{11}MKBK\_{i,t}+k\_{12}ROA\_{i,t}+k\_{13}IMR\_{i,t}+ε\_{i,t}$$ | (4) |

where $RM\_{t}$ is the total real earnings management measure as explained above. *MKTSHi,t-1* is the ratio of a company’s sales to the total industry sales based on the Fama-French (1997) 48-sector industry classification. The $ZSCORE$ is computed as follows:

|  |  |
| --- | --- |
| $$ZSCORE\_{i,t}=0.3\frac{NI\_{t}}{Asset\_{t}}+1.0\frac{Sales\_{t}}{Asset\_{t}}+1.4\frac{Retained Earnings\_{t}}{Asset\_{t}}+1.2\frac{Working Capital\_{t}}{Asset\_{t}}+0.6\frac{\left(Stock Price×Shares Outstanding\right)\_{t}}{Total Liabilities\_{t}}$$ |  |

$INST\_{i,t-1}$ is the percentage of institutional ownership. $TAX\_{i,t}$ is the average tax rate. $SOX\_{t}$ is a dummy variable representing fiscal years post-2002 following the passage of the Sarbanes-Oxley Act. *BIG8i,t* is an indicator variable equal to 1 if the firm’s auditor is one of the Big 8, and 0 otherwise; *TENUREi,t* is an indicator variable equal to 1 if the number of years the auditor has audited the client is above the sample median of five years, and 0 otherwise; *NOAi,t-1* is an indicator variable equal to 1 if the net operating assets (i.e., shareholders’ equity less cash and marketable securities and plus total debt) at the beginning of the year divided by lagged sales is above the median of the corresponding industry-year, and 0 otherwise; *CYCLEi,t-1* is the days receivable plus the days inventory less the days payable at the beginning of the year; *ASSETi,t* is the natural log of total assets; *MKBKi,t* is the market-to-book ratio; *ROAi,t* is the return on assets. *IMRt* is the estimated as φ(z)/ϕ(z), where z is the fitted value of the following probit regression index function, φ is the density function for standard normal distribution, and ϕ is the cumulative density function for standard normal distribution:$$Prob\left[Suspect\_{i,t}=1\right]=Probit\left(k\_{0}+k\_{1}Habitual beater\_{i,t}+k\_{2}Stock issuance\_{i,t}+k\_{3}Analyst following\_{i,t}+k\_{4}MKBK\_{i,t}+k\_{5}Shares\_{i,t}+k\_{6}ROA\_{i,t}+ε\_{i,t}\right) (5)$$In the above probit regression, the dependent variable is a dummy variable equal to 1 for suspect firms just beating/meeting last-year earnings as firm-years with change in basic EPS excluding extraordinary items from last year between 0 and 2 cents, and 0 otherwise as per Zhang (2012) paper. $Habitual beater\_{i,t}$ is the number of times of beating/meeting analysts’ forecast consensus in the past four quarters. $Stock issuance\_{i,t}$ is a dummy variable equal to 1 if the firm issues equity in the next fiscal year, and 0 otherwise. $Analyst following\_{i,t}$ is the log of 1 plus the number of analysts following the firm. $MKBK\_{i,t}$ is the market to book ratio. $Shares\_{i,t}$ is the log number of shares outstanding; and $ROA\_{i,t}$is the return on assets. |
| Discretionary accrual | The residuals from the following regression:

|  |  |
| --- | --- |
| $$\frac{Accruals\_{i,t}}{Assets\_{i,t-1}}=k\_{0}+k\_{1}\frac{1}{Assets\_{i,t-1}}+k\_{2}\frac{∆SALES\_{i,t}}{Assets\_{i,t-1}}+k\_{3}\frac{PPE\_{i,t}}{Assets\_{i,t-1}}+ϵ\_{i,t}$$ | (6) |

where $Accruals$, total accruals, is the difference between earnings before extraordinary items and discontinued operations and cash flows from operations for year $t$ and firm $i$. $Assets\_{i,t-1}$ represents total assets; $∆SALES\_{i,t}$ is the change in sales from the preceding year; and $PPE\_{i,t}$ is the gross value of property, plant and equipment. We estimate the model for every industry in each year using the Fama-French 48-sector industry classification codes. |
| Performance-adjusted current accrual | The difference between total current accruals (*TCA*) and expected performance adjusted total current accruals (*EPTCA*), where *TCA* and *EPTCA* are computed as follows: *TCA* = (Change in current asset/Assets) – (Change in current liabilities/Assets) – (Change in cash/Assets) + (Change in short-term and current long-term debt/Assets) *EPTCA* is the residual $ϵ\_{i,t}$ from the following regression:

|  |  |
| --- | --- |
| $$TCA\_{i,t}=k\_{0}+k\_{1}\frac{1}{Assets\_{i,t-1}}+k\_{2}\frac{∆SALES\_{i,t}}{Assets\_{i,t-1}}+k\_{3}ROA\_{i,t-1}+ϵ\_{i,t}$$ | (7) |

  |
| Accruals quality | The residuals from the following regression:

|  |  |
| --- | --- |
| $$WC\\_ACC\_{i,t}=k\_{0}+k\_{1}CFO\_{i,t-1}+k\_{2}CFO\_{i,t}+kCFO\_{i,t+1}+ϵ\_{i,t}$$ | (8) |

where working capital accruals $WC\\_ACC\_{i,t}$ is computed as follows:$WC\\_ACC\_{i,t}$ = (Change in account receivables/Assets) + (Change in inventory/Assets) + (Change in current assets/Assets) – (Change in account payable/Assets) - (Tax payable/Assets) - (Change in other current liabilities/Assets).*CFOi,t* = (Net cash flow from operating activities – Extraordinary items and discontinued operations)/Assets.  |
|  |  |
| ***Merger variables*** |
| Premium | The percentage difference between the deal value and the target’s market value the day preceding the M&A announcement from SDC. |
| Ln(Deal Value) | The natural logarithm of the deal value. |
| Stock Swap | A dummy variable representing M&A transactions paid in kind |
| Hostile | A dummy variable equal to 1 for hostile deals and 0 otherwise |
| Target Industry-Adj. Sales Growth | The target firm’s industry-adjusted sales growth in the preceding year. |
| Target Industry-Adj. Market-To-Book Ratio | The target firm’s industry-adjusted market-to-book ratio in the preceding year. |
| High-Tech Target | A dummy variable representing high-tech targets as per SDC classification |
| Related Targets | A dummy variable representing M&A deals where the bidder and the target share the same Fama-French 48-sector classification. |
| Target initiates the Deal | A dummy variable for whether the target initiates the deal.  |
| Competing Deal | A dummy variable equal to 1 for deals with more than one bidder involved and 0 otherwise. |
| Financial Buyers | A dummy variable representing bidders in the financial industry. |
| Private Bidders | A dummy variable representing private bidders. |
| SOX | A dummy variable representing the years after the passage of the 2002 Sarbanes-Oxley Act (SOX).  |
| Lagged Target Industry Median Premium | The median of the premiums paid for other firms in the same industry as the target firm in the preceding year.  |
| Target beats Benchmark | A dummy variable for whether the target firm beats analyst forecasts in the preceding year. |
| Percent of Shares held by Target Insiders | The percentage of firm shares held by insider owners. |

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| --- |
| **Table 1 – Sample Distribution**The sample of completed domestic U.S. mergers and acquisitions (M&As) is downloaded from the Thomson One Deals database. The sample period starts in 1990 and ends in 2016. We exclude financial targets (SIC codes 6000-6999) and utilities (SIC codes 4900-4999). Deal value is in excess of $10 million. Premium paid is between 0% and 100%. |
| ***Distribution of*** | ***N*** | ***Percent*** | ***Mean Premium (%)*** | ***Median Premium (%)*** | ***Distribution of*** | ***N*** | ***Percent*** |
| ***Announcement Year*** |  |  |  | ***Related targets*** |  |  |
| 1990 | 96 | 2.68 | 27.55 | 24.40 | No | 2,610 | 71.25 |
| 1991 | 69 | 1.92 | 32.63 | 27.37 | Yes | 1,053 | 28.75 |
| 1992 | 60 | 1.67 | 30.73 | 22.73 | ***Private bidders*** |  |  |
| 1993 | 82 | 2.29 | 31.51 | 31.24 | No | 2,813 | 76.79 |
| 1994 | 92 | 2.56 | 29.13 | 24.37 | Yes | 850 | 23.21 |
| 1995 | 153 | 4.26 | 30.63 | 27.31 | ***Hostile takeover*** |
| 1996 | 195 | 5.43 | 27.45 | 19.83 | No | 3,615 | 98.69 |
| 1997 | 224 | 6.24 | 27.13 | 21.98 | Yes | 48 | 1.31 |
| 1998 | 283 | 7.89 | 29.02 | 22.90 | ***Financial bidders*** |
| 1999 | 285 | 7.94 | 34.23 | 30.32 | No | 2,964 | 80.92 |
| 2000 | 216 | 6.02 | 36.62 | 34.61 | Yes | 699 | 19.08 |
| 2001 | 174 | 4.85 | 39.06 | 36.80 | ***High-tech targets*** |
| 2002 | 95 | 2.65 | 34.82 | 31.94 | No | 1,811 | 49.44 |
| 2003 | 118 | 3.29 | 33.06 | 29.20 | Yes | 1,852 | 50.56 |
| 2004 | 103 | 2.87 | 28.53 | 22.97 | ***Stock swap*** |
| 2005 | 149 | 4.15 | 28.85 | 25.73 | No | 2,585 | 70.57 |
| 2006 | 166 | 4.63 | 25.48 | 21.81 | Yes | 1,078 | 29.43 |
| 2007 | 165 | 4.60 | 27.00 | 24.63 | ***Competing bids*** |  |
| 2008 | 83 | 2.31 | 34.31 | 29.74 | No | 3,478 | 94.95 |
| 2009 | 106 | 2.95 | 34.61 | 30.25 | Yes | 185 | 5.05 |
| 2010 | 132 | 3.68 | 37.40 | 34.30 | ***Target initiates deal***  |
| 2011 | 98 | 2.73 | 37.21 | 35.51 | No | 2,993 | 81.71 |
| 2012 | 95 | 2.65 | 35.74 | 33.62 | Yes | 670 | 18.29 |
| 2013 | 88 | 2.45 | 31.57 | 28.18 | ***Target with insider holdings***  |
| 2014 | 72 | 2.01 | 33.44 | 31.18 | No | 1,732 | 47.28 |
| 2015 | 95 | 2.65 | 32.74 | 27.28 | Yes | 1,931 | 52.72 |
| 2016 | 94 | 2.62 | 33.95 | 32.10 | ***Target followed by analysts*** |
| ***Total*** | 3,588 | 100.00 | 32.02 | 28.23 | No | 829 | 22.63 |
|  |  |  |  |  | Yes | 2,834 | 77.37 |
|  |  |  |  |  | ***Target beats analyst forecast*** |
|  |  |  |  |  | No | 1,367 | 48.24 |
|  |  |  |  |  | Yes | 1,467 | 51.76 |

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| **Table 2 - Summary Statistics**The sample of completed domestic U.S. mergers and acquisitions (M&As) is downloaded from the Thomson One Deals database. The sample period starts in 1990 and ends in 2016. We exclude financial targets (SIC codes 6000-6999) and utilities (SIC codes 4900-4999). Premium paid is between 0% and 100%.  |
| ***Variables*** | ***N*** | ***Mean*** | ***Median*** | ***Std. Dev.*** |
| Deal Value ($ million) | 3,588 | 1600.681 | 238.980 | 6155.012 |
| Premium 1 Day | 3,588 | 32.021 | 28.232 | 22.492 |
| Target Assets ($ Million) | 3,588 | 1,368.161 | 212.433 | 9028.725 |
| Acquirer Assets ($ Million) | 2,063 | 14,244.960 | 1,937.461 | 56,950.280 |
| Target Market Value ($ Million) | 3,588 | 1,245.557 | 217.294 | 4,399.108 |
| Acquirer Market Value ($ Million) | 2,138 | 17,530.160 | 2,543.958 | 43,239.110 |
| Target Industry-Adj. Sales Growth | 3,473 | 0.133 | 0.002 | 1.416 |
| Target Industry-Adj. Market-To-Book Ratio | 3,587 | 0.986 | 0.067 | 15.079 |
| Number of Analysts following Targets | 3,588 | 4.901 | 3.000 | 5.996 |
| Percent of Shares held by Target Insiders | 3,399 | 0.060 | 0.000 | 0.381 |
| Lagged Target Industry Median Premium 1 Day | 3,467 | 29.293 | 27.560 | 13.956 |

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| **Table 3 - Regression Analysis to Measure Real activities Manipulation and Accrual-Based Earnings Management**This table reports the regression results for estimating the earnings management measures. The whole universe of firms in Compustat Annual database from 1990-2016 is employed in these regressions. \*, \*\*, and \*\*\* represent signiﬁcance at 10 percent, 5 percent, and 1 percent levels, respectively. |
| **Panel A - Accruals Estimation Models** |
|  | ***Model 1 - Production cost*** | ***Model 2 - Discretionary expense*** | ***Model 3 - Abnormal Cash Flows*** |
| Intercept | -0.044 | -11.15\*\*\* | 0.244 | 28.81\*\*\* | -0.061 | -11.15\*\*\* |
| 1/Assett-1 | 0.194 | 2.90\*\*\* | 1.166 | 15.30\*\*\* | -0.617 | -12.47\*\*\* |
| Sales(t) /Assett-1 | 0.736 | 158.39\*\*\* |  |  | 0.098 | 21.83\*\*\* |
| Salest-1 /Assett-1 |  |  | 0.075 | 13.87\*\*\* |  |  |
| ∆Sales(t) /Assett-1 | 0.033 | 4.00\*\*\* |  |  | -0.097 | -9.42\*\*\* |
| ∆Salest-1 /Assett-1 | -0.014 | -2.47\*\*\* |  |  |  |  |
| Plant, property and equipment(t) /Assett-1 |  |  |  |  |  |  |
| Mean Adj. R-squared | 79.28% |  | 50.18% |  | 46.16% |  |
| Mean # of observations each regression | 174 |  | 144 |  | 183 |  |
| Number of industry-year observations | 1,181 |  | 1,181 |  | 1,181 |  |
|  |
|   | ***Model 4 - Discretionary accruals*** | ***Model 5 - Performance-adjusted current accruals*** | ***Model 6 - Dechow and Dichev (2002) accruals quality*** |
| Intercept | -0.042 | -8.18\*\*\* | 0.014 | 1.42 | 0.037 | 22.67\*\*\* |
| 1/Assett-1 | -0.518 | -6.87\*\*\* | -2.136 | -0.95 |  |  |
| Salest /Assett-1 |  |  |  |  |  |  |
| ∆Salest /Assett-1 | 0.006 | 0.49 | 0.022 | 0.63 |  |  |
| Return on assett-1 |  |  | 0.048 | 5.99\*\*\* |  |  |
| Operating cash flowt-1 /Assett-1 |  |  |  |  | 0.031 | 0.71 |
| Operating cash flowt /Assett |  |  |  |  | -0.201 | -5.02\*\*\* |
| Operating cash flowt+1/Asset(t+1) |  |  |  |  | 0.101 | 4.52\*\*\* |
| Plant, property and equipment(t) /Assett-1 | -0.097 | -10.34\*\*\* |  |  |  |  |
| Mean Adj. R-squared | 39.23% |  | 37.87% |  | 28.18% |  |
| Mean # of observations each regression | 168 |  | 146 |  | 137 |  |
| Number of industry-year observations | 1,181 |  | 1,181 |  | 1,181 |  |
|  |
| ***Panel B – Estimation of Unexpected Real Earnings Management***  |
| Stage 1– Probit regression of Suspect Firms Benchmark | Stage 2 - Regressions of unexpected real earnings management |
| Independent Variables | Param. Est. | t-stat. |  | Independent Variables | Param. Est. | t-stat. |
| Constant | -0.055 | -6.669\*\*\* | Intercept | 9.198 | 27.535\*\*\* |
| Habitual beatert | 0.061 | 15.055\*\*\* | Market sharet-1 | 0.030 | 3.586\*\*\* |
| Stock issuance t | 0.060 | 5.725\*\*\* | Zscore t-1 | 0.003 | 10.686\*\*\* |
| Analyst following t | 0.290 | 3.912\*\*\* |  | Institutional ownership t-1 | -0.016 | -1.602  |
| Market-to-book ratio t | 0.017 | 6.495\*\*\* |  | Tax rate t | 0.000 | 1.256  |
| Shares outstanding t | 0.073 | 5.174\*\*\* |  | Auditor 8 t | -0.057 | -12.099\*\*\* |
| Return on asset t | 0.005 | 2.983\*\*\* |  | Auditor tenure t | 0.006 | 1.832\* |
|  |  |  |  | SOX | 0.231 | 16.402\*\*\* |
|  |  |  |  | Net operating assets t-1 | 0.115 | 38.067\*\*\* |
| Pseudo. R-squared | 0.074 |  |  | Operating cycle t-1 | -0.000 | -2.096\*\* |
| Year fixed effect | Yes |  |  | Ln(asset) t | 0.093 | 35.860\*\*\* |
| Clustered std err by firm | Yes |  |  | Market-to-book ratio t | -0.006 | -12.464\*\*\* |
| Observations | 146,098 |  |  | Return on asset t | 0.031 | 5.870\*\*\* |
|  |  |  |  | Inverse Mills ratio | 11.572 | 27.963\*\*\* |
|  |  |  |  |  |  |  |
|  |  |  |  | F-statistics | 108.1\*\*\* |  |
|  |  |  |  | Adj. R-squared | 0.0740 |  |
|  |  |  |  | Year fixed effect | Yes |  |
|  |  |  |  | Clustered std err by firm | Yes |  |
|  |  |  |  | Observations | 120,953 |  |

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| **Table 4 – Summary Statistics of Target Earnings Management Measures**The sample of completed domestic U.S. mergers and acquisitions (M&As) is downloaded from the Thomson One Deals database. The sample period starts in 1990 and ends in 2016. We report the summary statistics of the earnings management measures we employ in this study in Panel A and the correlation matrix among them in Panel B. \*, \*\*, and \*\*\* represent signiﬁcance at 10 percent, 5 percent, and 1 percent levels, respectively. |
| ***Panel A - Summary Statistics of Accruals Measures*** |
|   | Raw | Matched-firm adjusted (1) | Matched-firm adjusted (2) | Matched-firm adjusted (3) |
| Earnings management variables | Mean | Median  | Mean | Median  | Mean | Median  | Mean | Median  |
| Abnormal Production Cost | -0.050 | -0.043 | -0.050 | -0.044 | -0.053 | -0.051 | -0.051 | -0.044 |
| Abnormal Discretionary Expenses | 0.021 | 0.064 | -0.006 | 0.039 | -0.020 | 0.009 | -0.018 | 0.012 |
| Abnormal Operating Cash Flows | -0.058 | -0.055 | -0.042 | -0.033 | -0.034 | -0.024 | -0.026 | -0.014 |
| Total Real Earnings Management | -0.117 | -0.047 | -0.059 | 0.006 | -0.081 | -0.041 | -0.064 | -0.016 |
| Unexpected Total Real Earnings Management | -0.045 | -0.025 | -0.074 | -0.033 | -0.087 | -0.053 | -0.074 | -0.044 |
| Discretionary Accruals | 0.037 | 0.032 | 0.012 | 0.009 | 0.010 | 0.000 | -0.002 | -0.009 |
| Performance-Adjusted Current Accruals | 0.002 | -0.001 | -0.007 | -0.006 | -0.006 | -0.005 | -0.010 | -0.008 |
| Dechow and Dichev (2002) Accruals Quality | -0.013 | -0.018 | -0.016 | -0.018 | -0.015 | -0.010 | -0.016 | -0.013 |
| ***Panel B - Correlations among Earnings Management Measures*** |
|  | Abnormal Production Cost | Abnormal Discretionary Expenses | Abnormal Operating Cash Flows | Total Real Earnings Management | Unexpected Total Real Earnings Management | Discretionary Accruals | Performance-Adjusted Current Accruals | Dechow and Dichev (2002) Accruals Quality |
| Abnormal Production Cost | 1 | 0.50\*\*\* | 0.38\*\*\* | 0.88\*\*\* | 0.87\*\*\* | -0.12\*\*\* | 0.06\*\*\* | -0.07\*\* |
| Abnormal Discretionary Expenses | 1 | -0.40\*\*\* | 0.75\*\*\* | 0.73\*\*\* | 0.06\*\*\* | -0.13\*\*\* | -0.06\* |
| Abnormal Operating Cash Flows |  | 1 | 0.22\*\*\* | 0.30\*\*\* | 0.03\* | 0.29\*\*\* | 0.09\*\*\* |
| Total Real Earnings Management |  |  | 1 | 0.95\*\*\* | -0.03\*\* | -0.01\*\* | -0.03\*\* |
| Unexpected Total Real Earnings Management |  |  | 1 | 0.09\*\*\* | 0.04\*\*\* | -0.01 |
| Discretionary Accruals |  |  |  |  |  | 1 | 0.33\*\*\* | 0.29\*\*\* |
| Performance-Adjusted Current Accruals |  |  |  |  |  | 1 | 0.44\*\*\* |
| Dechow and Dichev (2002) Accruals Quality |  |  |  |  |  | 1 |

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| **Table 5 - Comparison of M&A Premium by Groups of Earnings Management Measures**This table compares M&A Premiums ($Premium1Day$) by groups of firms classified by the target firms’ level of earnings management measures. \*\*\*, \*\* and \* represent statistical significance at the 1%, 5% and 10% level, respectively. |
| ***Panel*** |  | ***Low*** | ***Medium*** | ***High*** | ***High minus Low*** | ***t-statistics*** | ***Wilcoxon z-stat*** |
| 1. Abnormal production cost
 | Raw | 32.738 | 31.493 | 30.729 | -2.009 | -2.19\*\* | -2.36\*\* |
| Match 1 - adjusted  | 33.236 | 31.468 | 30.291 | -2.945 | -3.24\*\*\* | -3.53\*\*\* |
| Match 2 - adjusted  | 33.164 | 31.334 | 30.798 | -2.366 | -2.55\*\*\* | -2.76\*\*\* |
| Match 3 - adjusted  | 32.852 | 31.848 | 30.381 | -2.471 | -2.68\*\*\* | -2.89\*\*\* |
| 1. Abnormal discretionary expenses
 | Raw | 33.990 | 31.403 | 29.516 | -4.474 | -4.69\*\*\* | -4.83\*\*\* |
| Match 1 - adjusted  | 32.597 | 31.125 | 31.255 | -1.343 | -1.40 | -1.64 |
| Match 2 - adjusted  | 33.481 | 30.844 | 30.959 | -2.522 | -2.59\*\*\* | -2.91\*\*\* |
| Match 3 - adjusted  | 33.822 | 30.140 | 30.910 | -2.913 | -2.97\*\*\* | -3.29\*\*\* |
| 1. Abnormal operating cash flows
 | Raw | 31.102 | 30.630 | 33.199 | 2.097 | 2.29\*\* | 1.75\* |
| Match 1 - adjusted  | 32.680 | 31.223 | 31.093 | -1.587 | -1.75\* | -2.31\*\* |
| Match 2 - adjusted  | 32.707 | 30.624 | 31.939 | -0.769 | -0.83 | -0.98 |
| Match 3 - adjusted  | 32.874 | 31.123 | 30.948 | -1.926 | -2.10\*\* | -2.17\*\* |
| 1. Total real earnings management
 | Raw | 33.281 | 31.371 | 30.401 | -2.880 | -2.98\*\*\* | -3.13\*\*\* |
| Match 1 - adjusted  | 33.034 | 32.391 | 29.696 | -3.338 | -3.51\*\*\* | -3.69\*\*\* |
| Match 2 - adjusted  | 33.527 | 30.746 | 31.220 | -2.307 | -2.35\*\* | -2.49\*\* |
| Match 3 - adjusted  | 32.992 | 31.808 | 30.207 | -2.785 | -2.86\*\*\* | -3.20\*\*\* |
| 1. Unexpected total real earnings management
 | Raw | 33.575 | 31.476 | 30.701 | -2.874 | -2.86\*\*\* | -3.06\*\*\* |
| Match 1 - adjusted  | 33.274 | 32.241 | 30.217 | -3.056 | -3.07\*\*\* | -3.28\*\*\* |
| Match 2 - adjusted  | 33.560 | 31.884 | 30.656 | -2.904 | -2.87\*\*\* | -2.96\*\*\* |
| Match 3 - adjusted  | 33.032 | 32.441 | 30.121 | -2.911 | -2.87\*\*\* | -3.20\*\*\* |
| 1. Discretionary accruals
 | Raw | 31.875 | 31.982 | 31.547 | -0.328 | -0.35 | -0.87 |
| Match 1 - adjusted  | 32.169 | 32.178 | 31.122 | -1.047 | -1.13 | -1.39 |
| Match 2 - adjusted  | 32.363 | 30.854 | 32.498 | 0.136 | 0.15 | 0.13 |
| Match 3 - adjusted  | 33.231 | 31.006 | 31.189 | -2.042 | -2.18\*\* | -2.51\*\* |
| 1. Performance-adjusted current accruals
 | Raw | 31.754 | 31.006 | 32.176 | 0.422 | 0.45 | 0.24 |
| Match 1 - adjusted  | 31.127 | 30.690 | 33.176 | 2.048 | 2.20\*\* | 2.02\*\* |
| Match 2 - adjusted  | 31.806 | 30.377 | 33.117 | 1.311 | 1.40 | 1.01 |
| Match 3 - adjusted  | 32.335 | 30.714 | 31.900 | -0.435 | -0.48 | -0.54 |
| 1. Dechow and Dichev (2002) accruals quality
 | Raw | 27.497 | 24.981 | 30.248 | 2.750 | 1.60 | 1.63 |
| Match 1 - adjusted  | 27.022 | 26.260 | 30.738 | 3.716 | 2.09\*\* | 1.84\* |
| Match 2 - adjusted  | 26.517 | 26.676 | 31.012 | 4.496 | 2.47\*\* | 2.11\*\* |
| Match 3 - adjusted  | 27.692 | 25.994 | 30.267 | 2.575 | 1.45 | 1.16 |

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| **Table 6 – Cross-Sectional Analyses of Premium**The dependent variable in the above regressions is $Premium$, i.e., the percentage difference between the deal value and the target’s market value on the day preceding the M&A announcement date. T-stats are presented in parentheses below the coefficient estimates. \*\*\*, \*\* and \* represent statistical significance at the 1%, 5% and 10% level, respectively. |
| ***Independent variables*** | ***Model 1*** | ***Model 2*** | ***Model 3*** | ***Model 4*** | ***Model 5*** | ***Model 6*** | ***Model 7*** | ***Model 8*** |
| Constant | 32.545 | 32.748 | 32.058 | 33.400 | 33.255 | 32.549 | 32.961 | 24.991 |
|  | (19.948\*\*\*) | (19.193\*\*\*) | (19.653\*\*\*) | (19.330\*\*\*) | (18.780\*\*\*) | (19.961\*\*\*) | (19.982\*\*\*) | (9.161\*\*\*) |
| Abnormal Production Cost | -0.020 |  |  |  |  |  |  |  |
| (-2.241\*\*) |  |  |  |  |  |  |  |
| Abnormal Discretionary Expenses |  | -0.064 |  |  |  |  |  |  |
|  | (-3.484\*\*\*) |  |  |  |  |  |  |
| Abnormal Operating Cash Flows |  |  | 0.028 |  |  |  |  |  |
|  |  | (1.642) |  |  |  |  |  |
| Total Real Earnings Management |  |  |  | -0.038 |  |  |  |  |
|  |  |  | (-2.054\*\*) |  |  |  |  |
| Unexpected Total Real Earnings Management |  |  |  |  | -0.039 |  |  |  |
|  |  |  |  | (-2.081\*\*) |  |  |  |
| Discretionary Accruals |  |  |  |  |  | 0.002 |  |  |
|  |  |  |  |  | (0.103) |  |  |
| Performance-Adjusted Current Accruals |  |  |  |  |  |  | 0.011 |  |
|  |  |  |  |  |  | (0.704) |  |
| Dechow & Dichev (2002) Accruals Quality |  |  |  |  |  |  |  | 0.055 |
|  |  |  |  |  |  |  | (1.577) |
| Ln(Deal Value) | -0.054 | -0.042 | -0.046 | -0.053 | -0.054 | -0.053 | -0.058 | 0.022 |
| (-2.867\*\*\*) | (-2.101\*\*) | (-2.398\*\*) | (-2.703\*\*\*) | (-2.660\*\*\*) | (-2.858\*\*\*) | (-3.053\*\*\*) | (0.588) |
| Stock Swap | -0.010 | -0.027 | -0.012 | -0.025 | -0.017 | -0.013 | -0.010 | 0.051 |
|  | (-0.513) | (-1.357) | (-0.640) | (-1.220) | (-0.835) | (-0.661) | (-0.490) | (1.334) |
| Hostile | 0.090 | 0.085 | 0.089 | 0.086 | 0.086 | 0.091 | 0.091 | 0.117 |
|  | (4.725\*\*\*) | (4.445\*\*\*) | (4.683\*\*\*) | (4.453\*\*\*) | (4.316\*\*\*) | (4.784\*\*\*) | (4.703\*\*\*) | (3.068\*\*\*) |
| Target Industry-Adj. Sales Growth | -0.010 | -0.019 | -0.010 | -0.014 | -0.014 | -0.010 | -0.009 | -0.015 |
| (-1.318) | (-1.434) | (-1.360) | (-1.044) | (-0.932) | (-1.329) | (-1.288) | (-0.380) |
| Target Industry-Adj. Market-To-Book Ratio | -0.009 | -0.010 | -0.010 | -0.006 | -0.002 | -0.009 | -0.008 | 0.023 |
| (-0.731) | (-0.718) | (-0.786) | (-0.478) | (-0.160) | (-0.691) | (-0.631) | (1.170) |
| High-Tech Target | 0.050 | 0.042 | 0.056 | 0.038 | 0.038 | 0.053 | 0.050 | 0.012 |
| (2.844\*\*\*) | (2.306\*\*) | (3.217\*\*\*) | (2.060\*\*) | (2.023\*\*) | (3.064\*\*\*) | (2.830\*\*\*) | (0.380) |
| Related Targets | 0.039 | 0.043 | 0.037 | 0.044 | 0.044 | 0.036 | 0.038 | 0.063 |
| (2.209\*\*) | (2.322\*\*) | (2.093\*\*) | (2.372\*\*) | (2.329\*\*) | (2.037\*\*) | (2.108\*\*) | (1.772\*) |
| Target initiates the Deal | -0.000 | -0.004 | -0.001 | -0.006 | -0.008 | -0.002 | -0.003 | -0.040 |
| (-0.020) | (-0.247) | (-0.069) | (-0.348) | (-0.439) | (-0.144) | (-0.202) | (-1.369) |
| Competing Deal | 0.096 | 0.095 | 0.096 | 0.095 | 0.096 | 0.097 | 0.098 | 0.122 |
| (4.821\*\*\*) | (4.602\*\*\*) | (4.858\*\*\*) | (4.576\*\*\*) | (4.507\*\*\*) | (4.882\*\*\*) | (4.886\*\*\*) | (3.385\*\*\*) |
| Financial Buyers | -0.007 | -0.010 | -0.008 | -0.009 | -0.010 | -0.009 | -0.008 | 0.059 |
| (-0.343) | (-0.486) | (-0.412) | (-0.460) | (-0.493) | (-0.467) | (-0.388) | (1.698\*) |
| Private Bidders | -0.116 | -0.113 | -0.112 | -0.117 | -0.105 | -0.113 | -0.109 | -0.112 |
| (-5.845\*\*\*) | (-5.424\*\*\*) | (-5.643\*\*\*) | (-5.575\*\*\*) | (-4.839\*\*\*) | (-5.644\*\*\*) | (-5.403\*\*\*) | (-2.882\*\*\*) |
| Post-SOX | 0.001 | -0.016 | 0.001 | -0.016 | -0.011 | 0.002 | 0.001 | 0.019 |
| (0.042) | (-0.764) | (0.027) | (-0.776) | (-0.505) | (0.098) | (0.067) | (0.506) |
| Lagged Target Industry Median Premium | 0.044 | 0.045 | 0.046 | 0.044 | 0.045 | 0.044 | 0.043 | 0.013 |
| (2.593\*\*\*) | (2.540\*\*) | (2.708\*\*\*) | (2.464\*\*) | (2.455\*\*) | (2.601\*\*\*) | (2.519\*\*) | (0.430) |
|  |  |  |  |  |  |  |  |  |
| F-Statistics | 10.20\*\*\* | 10.28\*\*\* | 9.98\*\*\* | 9.79\*\*\* | 8.65\*\*\* | 9.82\*\*\* | 9.48\*\*\* | 5.36\*\*\* |
| Adj. R-Squared | 0.0380 | 0.0403 | 0.0374 | 0.0384 | 0.0356 | 0.0369 | 0.0364 | 0.0453 |
| Observations | 3,384 | 3,123 | 3,414 | 3,074 | 2,945 | 3,397 | 3,321 | 2,973 |

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| **Table 7 - Comparison of Target Firm Cumulative Abnormal Returns (CARs) by Groups based on Measures of Earnings Management**This table compares M&A announcement period cumulative abnormal returns (CARs) between Low and High Earnings Manipulating Firms. \*\*\*, \*\* and \* represent significance levels at the 1%, 5% and 10%. |
|  |  | ***Groups based on Measures of Earnings Management*** |
| ***Panel*** | ***CAR Measures*** | ***Low*** | ***Medium*** | ***High*** | ***High minus Low*** | ***t-stats*** | ***Wilcoxon stats*** |
| A.    Abnormal Production Cost | Market model | 24.23% | 21.67% | 20.94% | -3.29% | -3.56\*\*\* | -3.17\*\*\* |
| Fama-French 3-factor model | 24.24% | 21.68% | 20.95% | -3.28% | -3.55\*\*\* | -3.17\*\*\* |
| Match 1 - adjusted  | 24.10% | 21.57% | 20.92% | -3.18% | -3.47\*\*\* | -3.1\*\*\* |
| Match 2 - adjusted  | 23.91% | 21.88% | 20.92% | -3.00% | -3.21\*\*\* | -2.89\*\*\* |
| Match 3 - adjusted  | 24.07% | 21.56% | 20.86% | -3.21% | -3.45\*\*\* | -3.15\*\*\* |
|  |  |  |  |  |  |  |  |
| B.    Abnormal Discretionary Expenses | Market model | 25.09% | 21.34% | 20.76% | -4.33% | -4.46\*\*\* | -4.05\*\*\* |
| Fama-French 3-factor model | 25.14% | 21.33% | 20.76% | -4.39% | -4.52\*\*\* | -4.13\*\*\* |
| Match 1 - adjusted  | 24.98% | 21.28% | 20.73% | -4.25% | -4.41\*\*\* | -4.09\*\*\* |
| Match 2 - adjusted  | 24.85% | 21.48% | 20.82% | -4.03% | -4.1\*\*\* | -3.62\*\*\* |
| Match 3 - adjusted  | 25.08% | 21.30% | 20.58% | -4.50% | -4.6\*\*\* | -4.19\*\*\* |
|  |  |  |  |  |  |  |  |
| C.    Abnormal Operating Cash Flows | Market model | 21.82% | 21.83% | 23.04% | 1.21% | 1.46 | 0.78 |
| Fama-French 3-factor model | 21.83% | 21.85% | 23.05% | 1.22% | 1.47 | 0.8 |
| Match 1 - adjusted  | 21.73% | 21.77% | 22.97% | 1.24% | 1.5 | 0.82 |
| Match 2 - adjusted  | 21.82% | 21.78% | 23.03% | 1.21% | 1.42 | 0.77 |
| Match 3 - adjusted  | 21.85% | 21.58% | 22.97% | 1.13% | 1.33 | 0.72 |
|  |  |  |  |  |  |  |  |
| D.    Total Real Earnings Management | Market model | 24.60% | 21.76% | 21.13% | -3.48% | -3.57\*\*\* | -2.95\*\*\* |
| Fama-French 3-factor model | 24.63% | 21.76% | 21.13% | -3.50% | -3.6\*\*\* | -2.98\*\*\* |
| Match 1 - adjusted  | 24.47% | 21.70% | 21.14% | -3.33% | -3.45\*\*\* | -2.91\*\*\* |
| Match 2 - adjusted  | 24.37% | 21.94% | 21.08% | -3.29% | -3.35\*\*\* | -2.75\*\*\* |
| Match 3 - adjusted  | 24.48% | 21.67% | 21.01% | -3.47% | -3.55\*\*\* | -2.95\*\*\* |
|  |  |  |  |  |  |  |  |
| E.    Unexpected Total Real Earnings Management  | Market model | 24.95% | 21.58% | 21.29% | -3.66% | -3.6\*\*\* | -2.93\*\*\* |
| Fama-French 3-factor model | 24.96% | 21.59% | 21.31% | -3.65% | -3.6\*\*\* | -2.96\*\*\* |
| Match 1 - adjusted  | 24.84% | 21.45% | 21.31% | -3.53% | -3.51\*\*\* | -2.91\*\*\* |
| Match 2 - adjusted  | 24.69% | 21.73% | 21.34% | -3.35% | -3.26\*\*\* | -2.57\*\*\* |
| Match 3 - adjusted  | 24.82% | 21.25% | 21.37% | -3.44% | -3.36\*\*\* | -2.72\*\*\* |
|  |  |  |  |  |  |  |  |
| F.    Discretionary Accruals | Market model | 22.677% | 21.514% | 22.551% | -0.13% | -0.14 | -0.55 |
| Fama-French 3-factor model | 22.712% | 21.512% | 22.556% | -0.16% | -0.17 | -0.51 |
| Match 1 - adjusted  | 22.630% | 21.365% | 22.520% | -0.11% | -0.12 | -0.57 |
| Match 2 - adjusted  | 22.561% | 21.554% | 22.534% | -0.03% | -0.03 | -0.71 |
| Match 3 - adjusted  | 22.615% | 21.234% | 22.565% | -0.05% | -0.05 | -0.7 |
|  |  |  |  |  |  |  |  |
| G.    Performance-Adjusted Current Accruals | Market model | 22.04% | 22.39% | 22.81% | 0.77% | 0.82 | 0.3 |
| Fama-French 3-factor model | 22.07% | 22.39% | 22.82% | 0.75% | 0.8 | 0.32 |
| Match 1 - adjusted  | 21.94% | 22.32% | 22.74% | 0.80% | 0.86 | 0.15 |
| Match 2 - adjusted  | 22.05% | 22.45% | 22.70% | 0.65% | 0.69 | 0.16 |
| Match 3 - adjusted  | 22.11% | 22.25% | 22.60% | 0.49% | 0.52 | 0.37 |
|  |  |  |  |  |  |  |  |
| H.    Dechow & Dichev (2002) Accruals Quality  | Market model | 21.44% | 21.69% | 22.04% | 0.60% | 0.41 | 0.38 |
| Fama-French 3-factor model | 21.38% | 21.68% | 22.02% | 0.64% | 0.44 | 0.39 |
| Match 1 - adjusted  | 21.40% | 21.66% | 21.81% | 0.41% | 0.28 | 0.28 |
| Match 2 - adjusted  | 21.41% | 21.97% | 22.11% | 0.71% | 0.46 | 0.42 |
| Match 3 - adjusted  | 21.43% | 21.45% | 21.73% | 0.30% | 0.2 | -0.02 |

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| **Table 8 – Cross-Sectional Analyses of CAR**This table presents the results of multiple regressions on the different measures of Target Cumulative Abnormal Returns (CARs). \*\*\*, \*\* and \* represent significance levels at the 1%, 5% and 10%, respectively.  |
| ***Independent variables*** | ***Market model CAR*** | ***Fama-French CAR*** | ***Match-adjusted CAR (1)*** | ***Match-adjusted CAR (3)*** | ***Match-adjusted CAR (3)*** |
| Constant | 0.276 | 0.276 | 0.278 | 0.281 | 0.278 |
|  | (16.008\*\*\*) | (16.052\*\*\*) | (16.250\*\*\*) | (15.915\*\*\*) | (15.823\*\*\*) |
| Unexpected Total Real Earnings Management | -0.059 | -0.060 | -0.057 | -0.054 | -0.058 |
| (-2.881\*\*\*) | (-2.902\*\*\*) | (-2.792\*\*\*) | (-2.650\*\*\*) | (-2.778\*\*\*) |
| Ln(Deal Value) | -0.074 | -0.074 | -0.077 | -0.082 | -0.076 |
|  | (-3.770\*\*\*) | (-3.792\*\*\*) | (-3.906\*\*\*) | (-4.094\*\*\*) | (-3.845\*\*\*) |
| Stock Swap | -0.171 | -0.172 | -0.172 | -0.177 | -0.176 |
|  | (-8.953\*\*\*) | (-8.997\*\*\*) | (-8.994\*\*\*) | (-9.100\*\*\*) | (-9.036\*\*\*) |
| Hostile | 0.052 | 0.052 | 0.050 | 0.050 | 0.051 |
|  | (3.420\*\*\*) | (3.412\*\*\*) | (3.150\*\*\*) | (3.177\*\*\*) | (3.303\*\*\*) |
| Target Industry-Adj. Sales Growth | -0.003 | -0.004 | -0.003 | -0.008 | -0.001 |
| (-0.151) | (-0.165) | (-0.145) | (-0.309) | (-0.072) |
| Target Industry-Adj. Market-To-Book Ratio | -0.015 | -0.014 | -0.013 | -0.005 | -0.010 |
| (-0.997) | (-0.980) | (-0.814) | (-0.304) | (-0.730) |
| High-Tech Target | 0.053 | 0.053 | 0.053 | 0.057 | 0.062 |
|  | (2.769\*\*\*) | (2.770\*\*\*) | (2.778\*\*\*) | (2.953\*\*\*) | (3.213\*\*\*) |
| Related Targets | 0.036 | 0.037 | 0.035 | 0.033 | 0.036 |
|  | (1.943\*) | (1.954\*) | (1.887\*) | (1.758\*) | (1.911\*) |
| Target initiates the Deal | -0.012 | -0.012 | -0.009 | -0.012 | -0.011 |
|  | (-0.670) | (-0.674) | (-0.517) | (-0.649) | (-0.599) |
| Competing Deal | 0.066 | 0.066 | 0.069 | 0.071 | 0.064 |
|  | (4.304\*\*\*) | (4.271\*\*\*) | (4.504\*\*\*) | (4.412\*\*\*) | (4.049\*\*\*) |
| Financial Buyers | 0.010 | 0.009 | 0.008 | 0.003 | 0.005 |
|  | (0.473) | (0.424) | (0.376) | (0.138) | (0.222) |
| Private Bidders | -0.175 | -0.176 | -0.179 | -0.175 | -0.178 |
|  | (-8.491\*\*\*) | (-8.524\*\*\*) | (-8.600\*\*\*) | (-8.301\*\*\*) | (-8.422\*\*\*) |
| Post-SOX | 0.059 | 0.059 | 0.057 | 0.058 | 0.052 |
|  | (2.862\*\*\*) | (2.893\*\*\*) | (2.752\*\*\*) | (2.773\*\*\*) | (2.465\*\*) |
| Lagged Target Industry Median Premium | 0.042 | 0.042 | 0.041 | 0.043 | 0.036 |
| (2.490\*\*) | (2.466\*\*) | (2.412\*\*) | (2.503\*\*) | (2.115\*\*) |
|  |  |  |  |  |  |
| F-Statistics | 15.32\*\*\* | 15.39\*\*\* | 15.15\*\*\* | 15.27\*\*\* | 14.77\*\*\* |
| Adj. R-Squared | 0.0639 | 0.0644 | 0.0644 | 0.0667 | 0.0647 |
| Observations | 2,932 | 2,932 | 2,927 | 2,837 | 2,830 |

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| **Table 9 – Cross-Sectional Analyses of Premium – Additional Control Variables**The dependent variable in the regressions is 𝑃𝑟𝑒𝑚𝑖𝑢𝑚, i.e., the percentage difference between the deal value and the target’s market value on the day preceding the M&A announcement date. T-stats are presented in parentheses below the coefficient estimates. \*\*\*, \*\* and \* represent statistical significance at the 1%, 5% and 10% level, respectively. |
| ***Independent variables*** | ***Model 1*** | ***Model 2*** | ***Model 3*** | ***Model 4*** | ***Model 5*** | ***Model 6*** | ***Model 7*** | ***Model 8*** |
| Constant | 31.851 | 32.042 | 31.306 | 32.696 | 32.308 | 31.852 | 32.199 | 24.254 |
|  | (18.206\*\*\*) | (17.625\*\*\*) | (17.947\*\*\*) | (17.707\*\*\*) | (17.057\*\*\*) | (18.198\*\*\*) | (18.146\*\*\*) | (8.242\*\*\*) |
| Abnormal Production Cost | -0.025 |  |  |  |  |  |  |  |
| (-2.339\*\*) |  |  |  |  |  |  |  |
| Abnormal Discretionary Expenses |  | -0.065 |  |  |  |  |  |  |
|  | (-3.036\*\*\*) |  |  |  |  |  |  |
| Abnormal Operating Cash Flows |  |  | 0.033 |  |  |  |  |  |
|  |  | (1.612) |  |  |  |  |  |
| Total Real Earnings Management |  |  |  | -0.037 |  |  |  |  |
|  |  |  | (-2.051\*\*) |  |  |  |  |
| Unexpected Total Real Earnings Management |  |  |  |  | -0.037 |  |  |  |
|  |  |  |  | (-2.020\*\*) |  |  |  |
| Discretionary Accruals |  |  |  |  |  | -0.019 |  |  |
|  |  |  |  |  | (-1.038) |  |  |
| Performance-Adjusted Current Accruals |  |  |  |  |  |  | 0.016 |  |
|  |  |  |  |  |  | (0.967) |  |
| Dechow & Dichev (2002) Accruals Quality |  |  |  |  |  |  |  | 0.122 |
|  |  |  |  |  |  |  | (1.767\*) |
| Ln(Deal Value) | -0.034 | -0.021 | -0.026 | -0.029 | -0.026 | -0.033 | -0.035 | 0.078 |
| (-1.445) | (-0.838) | (-1.112) | (-1.198) | (-1.029) | (-1.391) | (-1.492) | (1.462) |
| Stock Swap | -0.017 | -0.033 | -0.018 | -0.033 | -0.030 | -0.018 | -0.016 | 0.038 |
| (-0.754) | (-1.366) | (-0.777) | (-1.350) | (-1.227) | (-0.797) | (-0.668) | (0.761) |
| Hostile | 0.082 | 0.073 | 0.080 | 0.075 | 0.073 | 0.084 | 0.083 | 0.100 |
|  | (3.597\*\*\*) | (3.245\*\*\*) | (3.532\*\*\*) | (3.268\*\*\*) | (3.108\*\*\*) | (3.661\*\*\*) | (3.580\*\*\*) | (1.978\*\*) |
| Target Industry-Adj. Sales Growth | -0.012 | -0.024 | -0.011 | -0.021 | -0.022 | -0.012 | -0.013 | -0.061 |
| (-1.595) | (-1.624) | (-1.494) | (-1.474) | (-1.532) | (-1.558) | (-1.638) | (-1.520) |
| Target Industry-Adj. Market-To-Book Ratio | -0.006 | -0.002 | -0.007 | 0.001 | 0.005 | -0.006 | -0.005 | 0.028 |
| (-0.449) | (-0.210) | (-0.537) | (0.094) | (0.400) | (-0.462) | (-0.351) | (1.181) |
| High-Tech Target | 0.070 | 0.059 | 0.075 | 0.055 | 0.062 | 0.072 | 0.072 | -0.006 |
| (3.347\*\*\*) | (2.698\*\*\*) | (3.638\*\*\*) | (2.458\*\*) | (2.736\*\*\*) | (3.476\*\*\*) | (3.458\*\*\*) | (-0.138) |
| Related Targets | 0.038 | 0.046 | 0.036 | 0.048 | 0.047 | 0.035 | 0.036 | 0.071 |
|  | (1.818\*) | (2.114\*\*) | (1.725\*) | (2.201\*\*) | (2.099\*\*) | (1.691\*) | (1.714\*) | (1.495) |
| Target initiates the Deal | 0.010 | 0.008 | 0.007 | 0.007 | 0.010 | 0.007 | 0.007 | -0.025 |
| (0.494) | (0.371) | (0.388) | (0.346) | (0.485) | (0.341) | (0.355) | (-0.662) |
| Competing Deal | 0.094 | 0.094 | 0.095 | 0.094 | 0.094 | 0.095 | 0.096 | 0.131 |
|  | (3.934\*\*\*) | (3.779\*\*\*) | (4.003\*\*\*) | (3.779\*\*\*) | (3.690\*\*\*) | (4.001\*\*\*) | (3.975\*\*\*) | (2.640\*\*\*) |
| Financial Buyers | -0.025 | -0.025 | -0.026 | -0.023 | -0.020 | -0.027 | -0.023 | 0.052 |
|  | (-1.136) | (-1.068) | (-1.209) | (-1.007) | (-0.851) | (-1.247) | (-1.065) | (1.201) |
| Private Bidders | -0.115 | -0.111 | -0.110 | -0.119 | -0.109 | -0.111 | -0.107 | -0.134 |
|  | (-4.986\*\*\*) | (-4.490\*\*\*) | (-4.761\*\*\*) | (-4.771\*\*\*) | (-4.253\*\*\*) | (-4.718\*\*\*) | (-4.522\*\*\*) | (-2.667\*\*\*) |
| Post-SOX | -0.023 | -0.039 | -0.023 | -0.039 | -0.041 | -0.018 | -0.023 | -0.013 |
|  | (-0.970) | (-1.612) | (-0.994) | (-1.588) | (-1.621) | (-0.763) | (-0.972) | (-0.275) |
| Lagged Target Industry Median Premium | 0.033 | 0.030 | 0.035 | 0.029 | 0.033 | 0.034 | 0.034 | -0.002 |
| (1.676\*) | (1.445) | (1.802\*) | (1.403) | (1.543) | (1.731\*) | (1.701\*) | (-0.055) |
| Target beats Benchmark | 0.024 | 0.032 | 0.020 | 0.034 | 0.035 | 0.023 | 0.023 | 0.080 |
| (1.181) | (1.536) | (0.982) | (1.597) | (1.612) | (1.127) | (1.117) | (1.878\*) |
| Percent of Shares held by Target Insiders | -0.007 | -0.007 | -0.005 | -0.008 | -0.008 | -0.006 | -0.006 | -0.014 |
| (-0.439) | (-0.464) | (-0.360) | (-0.527) | (-0.504) | (-0.404) | (-0.419) | (-0.670) |
|  |  |  |  |  |  |  |  |  |
| F-Statistics | 6.84\*\*\* | 6.67\*\*\* | 6.53\*\*\* | 6.39\*\*\* | 5.93\*\*\* | 6.39\*\*\* | 6.20\*\*\* | 4.63\*\*\* |
| Adj. R-Squared | 0.0381 | 0.0397 | 0.0370 | 0.0381 | 0.0363 | 0.0366 | 0.0356 | 0.0922 |
| Observations | 2,385 | 2,193 | 2,412 | 2,159 | 2,085 | 2,398 | 2,353 | 2,042 |

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| **Table 10 – Cross-Sectional Analyses of CAR – Additional Control Variables**This table presents the results of multiple regressions on the different measures of Target Cumulative Abnormal Returns (CARs). The measurement of CARs is explained in the preceding Tale 8. \*\*\*, \*\* and \* represent significance levels at the 1%, 5% and 10%, respectively.  |
| ***Independent variables*** | ***Market model CAR*** | ***Fama-French CAR*** | ***Match-adjusted CAR (1)*** | ***Match-adjusted CAR (3)*** | ***Match-adjusted CAR (3)*** |
| Constant | 0.261 | 0.261 | 0.262 | 0.266 | 0.258 |
|  | (12.739\*\*\*) | (12.706\*\*\*) | (12.726\*\*\*) | (12.799\*\*\*) | (12.116\*\*\*) |
| Unexpected Total Real Earnings Management | -0.025 | -0.026 | -0.025 | -0.018 | -0.029 |
| (-1.098) | (-1.119) | (-1.093) | (-0.834) | (-1.265) |
| Ln(Deal Value) | -0.043 | -0.042 | -0.044 | -0.051 | -0.042 |
|  | (-1.807\*) | (-1.787\*) | (-1.855\*) | (-2.132\*\*) | (-1.740\*) |
| Stock Swap | -0.211 | -0.212 | -0.209 | -0.218 | -0.215 |
|  | (-9.123\*\*\*) | (-9.202\*\*\*) | (-9.051\*\*\*) | (-9.336\*\*\*) | (-9.259\*\*\*) |
| Hostile | 0.053 | 0.054 | 0.050 | 0.052 | 0.050 |
|  | (2.560\*\*) | (2.565\*\*) | (2.331\*\*) | (2.428\*\*) | (2.378\*\*) |
| Target Industry-Adj. Sales Growth | -0.005 | -0.005 | -0.003 | -0.003 | -0.004 |
| (-0.130) | (-0.135) | (-0.094) | (-0.078) | (-0.127) |
| Target Industry-Adj. Market-To-Book Ratio | -0.016 | -0.015 | -0.012 | -0.001 | -0.010 |
| (-0.863) | (-0.850) | (-0.638) | (-0.046) | (-0.602) |
| High-Tech Target | 0.074 | 0.075 | 0.074 | 0.081 | 0.088 |
|  | (3.371\*\*\*) | (3.397\*\*\*) | (3.344\*\*\*) | (3.639\*\*\*) | (3.929\*\*\*) |
| Related Targets | 0.030 | 0.030 | 0.029 | 0.026 | 0.031 |
|  | (1.404) | (1.395) | (1.342) | (1.162) | (1.392) |
| Target initiates the Deal | -0.004 | -0.004 | 0.001 | -0.001 | 0.001 |
|  | (-0.197) | (-0.191) | (0.062) | (-0.039) | (0.068) |
| Competing Deal | -0.077 | -0.076 | -0.078 | -0.085 | -0.068 |
|  | (-4.491\*\*\*) | (-4.477\*\*\*) | (-4.571\*\*\*) | (-4.690\*\*\*) | (-3.874\*\*\*) |
| Financial Buyers | -0.016 | -0.018 | -0.017 | -0.019 | -0.020 |
|  | (-0.698) | (-0.757) | (-0.730) | (-0.807) | (-0.836) |
| Private Bidders | -0.198 | -0.198 | -0.196 | -0.193 | -0.198 |
|  | (-7.844\*\*\*) | (-7.880\*\*\*) | (-7.732\*\*\*) | (-7.526\*\*\*) | (-7.644\*\*\*) |
| Post-SOX | 0.035 | 0.035 | 0.033 | 0.032 | 0.028 |
|  | (1.430) | (1.439) | (1.342) | (1.314) | (1.114) |
| Lagged Target Industry Median Premium | 0.029 | 0.029 | 0.027 | 0.026 | 0.025 |
| (1.359) | (1.371) | (1.254) | (1.197) | (1.187) |
| Target beats Benchmark | 0.051 | 0.051 | 0.052 | 0.049 | 0.053 |
| (2.414\*\*) | (2.407\*\*) | (2.424\*\*) | (2.281\*\*) | (2.482\*\*) |
| Percent of Shares held by Target Insiders | 0.012 | 0.012 | 0.011 | 0.014 | 0.007 |
| (0.823) | (0.859) | (0.808) | (1.004) | (0.506) |
|  |  |  |  |  |  |
| F-Statistics | 12.36\*\*\* | 12.42\*\*\* | 12.05\*\*\* | 12.25\*\*\* | 12.37\*\*\* |
| Adj. R-Squared | 0.0768 | 0.0776 | 0.0749 | 0.0791 | 0.0786 |
| Observations | 2,081 | 2,081 | 2,078 | 2,019 | 2,010 |

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| **Table 11: Cross-Sectional Analyses of Premium for the Sub-Periods**The dependent variable is $Premium$. T-stats are presented in parentheses below the coefficient estimates. \*\*\*, \*\* and \* represent statistical significance at the 1%, 5% and 10% level, respectively. |
| ***Independent Variables*** | ***Pre FASB141*** | ***Post FASB 141 - Pre FASB 141R*** | ***Post FASB 141R*** | ***Pre-Sox*** | ***Post-SOX*** |
| Constant | 27.939 | 37.602 | 50.781 | 29.252 | 41.082 |
|  | (10.698\*\*\*) | (10.711\*\*\*) | (11.989\*\*\*) | (11.648\*\*\*) | (14.286\*\*\*) |
| Unexpected Total Real Earnings Management | -0.065 | 0.014 | -0.034 | -0.065 | 0.002 |
| (-2.409\*\*) | (0.413) | (-0.846) | (-2.585\*\*\*) | (0.082) |
| Ln(Deal Value) | 0.012 | -0.162 | -0.157 | -0.004 | -0.130 |
|  | (0.395) | (-4.721\*\*\*) | (-4.069\*\*\*) | (-0.143) | (-4.551\*\*\*) |
| Stock Swap | 0.042 | -0.121 | -0.030 | 0.006 | -0.080 |
|  | (1.286) | (-3.379\*\*\*) | (-0.799) | (0.202) | (-2.868\*\*\*) |
| Hostile | 0.088 | 0.136 | 0.035 | 0.091 | 0.067 |
|  | (2.954\*\*\*) | (5.094\*\*\*) | (2.58\*\*\*) | (3.419\*\*\*) | (14.538\*\*\*) |
| Target Industry-Adj. Sales Growth | -0.014 | -0.009 | 0.013 | -0.027 | 0.013 |
| (-0.719) | (-0.276) | (0.321) | (-1.276) | (0.435) |
| Target Industry-Adj. Market-To-Book Ratio | 0.003 | 0.019 | -0.028 | -0.001 | 0.002 |
| (0.164) | (0.497) | (-1.386) | (-0.102) | (0.079) |
| High-Tech Target | 0.057 | 0.006 | -0.006 | 0.081 | -0.017 |
|  | (2.040\*\*) | (0.192) | (-0.153) | (3.092\*\*\*) | (-0.624) |
| Related Targets | 0.043 | 0.111 | -0.062 | 0.051 | 0.031 |
|  | (1.526) | (3.173\*\*\*) | (-1.669\*) | (1.951\*) | (1.074) |
| Target initiates the Deal | -0.023 | 0.001 | 0.026 | -0.021 | 0.007 |
| (-0.944) | (0.016) | (0.703) | (-0.907) | (0.265) |
| Competing Deal | 0.142 | 0.054 | 0.070 | 0.115 | 0.076 |
|  | (4.395\*\*\*) | (1.603) | (1.804\*) | (3.890\*\*\*) | (2.474\*\*) |
| Financial Buyers | 0.033 | -0.045 | -0.119 | 0.033 | -0.074 |
|  | (1.232) | (-1.083) | (-2.808\*\*\*) | (1.233) | (-2.274\*\*) |
| Private Bidders | -0.119 | -0.075 | -0.084 | -0.119 | -0.090 |
|  | (-3.897\*\*\*) | (-1.784\*) | (-1.948\*) | (-3.992\*\*\*) | (-2.782\*\*\*) |
| Lagged Target Industry Median Premium | 0.013 | 0.106 | -0.020 | 0.030 | 0.052 |
| (0.490) | (3.305\*\*\*) | (-0.520) | (1.209) | (1.828\*) |
|  |  |  |  |  |  |
| F-Statistics | 7.12\*\*\* | 8.68\*\*\* | 3.71\*\*\* | 7.16\*\*\* | 7.06\*\*\* |
| Adj. R-Squared | 0.060 | 0.076 | 0.034 | 0.051 | 0.040 |
| Observations | 1,334 | 880 | 731 | 1,545 | 1,302 |

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| **Table 12-Cross-Sectional Analyses of Premium for the Public Acquirer Subsample vs. Private Acquirer Subsample**The dependent variable is $Premium$. T-stats are presented in parentheses below the coefficient estimates. \*\*\*, \*\* and \* represent statistical significance at the 1%, 5% and 10% level, respectively. |
| ***Independent Variables*** | ***Public acquirers*** | ***Private acquirers*** |
| Constant | 33.944 | 26.539 |
|  | (16.445\*\*\*) | (8.903\*\*\*) |
| Unexpected Total Real Earnings Management | -0.049 | 0.008 |
|  | (-2.247\*\*) | (0.217) |
| Ln(Deal Value) | -0.050 | -0.084 |
|  | (-2.235\*\*) | (-1.882\*) |
| Stock Swap | -0.027 | -0.014 |
|  | (-1.199) | (-0.552) |
| Hostile | 0.077 | 0.123 |
|  | (3.509\*\*\*) | (2.657\*\*\*) |
| Target Industry-Adj. Sales Growth | -0.017 | -0.021 |
|  | (-0.949) | (-0.584) |
| Target Industry-Adj. Market-To-Book Ratio | -0.013 | 0.024 |
|  | (-0.862) | (0.744) |
| High-Tech Target | 0.046 | -0.003 |
|  | (2.123\*\*) | (-0.072) |
| Related Targets | 0.029 | 0.134 |
|  | (1.365) | (3.248\*\*\*) |
| Target initiates the Deal | 0.006 | -0.046 |
|  | (0.311) | (-1.206) |
| Competing Deal | 0.111 | 0.041 |
|  | (4.521\*\*\*) | (0.939) |
| Financial Buyers | -0.035 | 0.076 |
|  | (-1.632) | (1.665\*) |
| Post-SOX | -0.033 | 0.053 |
|  | (-1.368) | (1.158) |
| Lagged Target Industry Median Premium | 0.042 | 0.056 |
|  | (2.016\*\*) | (1.364) |
|  |  |  |
| F-Statistics | 5.77\*\*\* | 2.23\*\*\* |
| Adj. R-Squared | 0.028 | 0.030 |
| Observations | 2,271 | 674 |

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| **Table 13-Cross-Sectional Analyses of Premium for the Subsamples on Target Industry-Adjusted Sales Growth and Market-to-Book Ratio**The dependent variable is $Premium$. T-stats are presented in parentheses below the coefficient estimates. \*\*\*, \*\* and \* represent statistical significance at the 1%, 5% and 10% level, respectively. |
| ***Independent Variables*** | ***Model 1 - Low Sales Growth*** | ***Model 2- High Sales Growth*** |  | ***Model 3 - Low MKBK*** | ***Model 4 - High MKBK*** |
| Constant | 34.795 | 31.052 |  | 35.670 | 27.382 |
|  | (13.240\*\*\*) | (12.203\*\*\*) | (13.736\*\*\*) | (11.140\*\*\*) |
| Unexpected Total Real Earnings Management | -0.014 | -0.065 |  | -0.042 | -0.067 |
|  | (-0.561) | (-2.339\*\*) | (-1.571) | (-2.458\*\*) |
| Ln(Deal Value) | -0.074 | -0.023 |  | -0.073 | 0.021 |
|  | (-2.737\*\*\*) | (-0.738) |  | (-2.609\*\*\*) | (0.744) |
| Stock Swap | 0.006 | -0.042 |  | 0.001 | -0.026 |
|  | (0.207) | (-1.358) |  | (0.032) | (-0.845) |
| Hostile | 0.077 | 0.095 |  | 0.084 | 0.088 |
|  | (2.720\*\*\*) | (3.504\*\*\*) | (3.042\*\*\*) | (3.091\*\*\*) |
| Target Industry-Adj. Sales Growth | -0.001 | -0.007 |  | -0.019 | -0.002 |
|  | (-0.049) | (-0.333) |  | (-1.272) | (-0.078) |
| Target Industry-Adj. Market-To-Book Ratio | 0.001 | -0.004 |  | 0.022 | 0.008 |
|  | (0.023) | (-0.296) |  | (1.929\*) | (0.431) |
| High-Tech Target | 0.052 | 0.019 |  | 0.020 | 0.060 |
|  | (1.945\*) | (0.714) |  | (0.756) | (2.199\*\*) |
| Related Targets | 0.052 | 0.038 |  | 0.070 | 0.012 |
|  | (1.942\*) | (1.436) |  | (2.566\*\*) | (0.442) |
| Target initiates the Deal | -0.009 | -0.008 |  | -0.003 | -0.010 |
|  | (-0.333) | (-0.346) |  | (-0.120) | (-0.397) |
| Competing Deal | 0.099 | 0.090 |  | 0.084 | 0.098 |
|  | (3.225\*\*\*) | (3.108\*\*\*) | (2.840\*\*\*) | (3.281\*\*\*) |
| Financial Buyers | 0.022 | -0.043 |  | -0.012 | -0.005 |
|  | (0.748) | (-1.487) |  | (-0.429) | (-0.164) |
| Private Bidders | -0.112 | -0.096 |  | -0.078 | -0.149 |
|  | (-3.653\*\*\*) | (-3.142\*\*\*) | (-2.563\*\*) | (-5.116\*\*\*) |
| Post-SOX | -0.014 | -0.014 |  | -0.009 | -0.018 |
|  | (-0.490) | (-0.458) |  | (-0.316) | (-0.590) |
| Lagged Target Industry Median Premium | 0.033 | 0.060 |  | 0.065 | 0.025 |
|  | (1.277) | (2.241\*\*) | (2.434\*\*) | (1.006) |
|  |  |  |  |  |  |
| F-Statistics | 4.27\*\*\* | 4.94\*\*\* |  | 4.93\*\*\* | 5.58\*\*\* |
| Adj. R-Squared | 0.031 | 0.036 |  | 0.033 | 0.044 |
| Observations | 1,471 | 1,474 |  | 1,489 | 1,456 |

1. We use accruals-based earnings management, discretionary accruals management, accrual management, accruals earning management interchangeably. [↑](#footnote-ref-1)
2. We use real activities manipulations, real earnings manipulations, real earnings management, and real management interchangeably. [↑](#footnote-ref-2)
3. Furthermore, managers have a set target for real activities manipulations for the year. By year-end, they are in a position to determine the outcomes of real activities manipulations. If they fell below expectations, then managers can implement accruals manipulations while reporting the annual results. The impact of accruals manipulations is spontaneous while that of real earnings management takes effect over time. Thus, there is a tradeoff between the two earnings management techniques. At the same time, the above explanation suggests that managers would assess whether real earnings management was abnormally higher or lower than expectations for the year. Equation (4) is a model that assists in that determination. [↑](#footnote-ref-3)