

Earnings management through real activities manipulation before mergers and acquisitions

Xiaotian Zhu
Credit Suisse Securities

Shuoyi Lu
University of Delaware

ABSTRACT

This study examines whether or not managers manipulate real activities to inflate their firms' market values before mergers and acquisitions (M&As). The authors find that some managers do indeed initiate activities designed to boost their firms' market values prior to M&As, specifically, relatively overvalued bidders conduct earnings manipulation through real activities before the mergers and acquisitions. The results suggest that discounted price that can increase sales temporarily and overproduction that can lower cost of goods sold reported are activities that executive employ to increase firm values prior to M&As. Further analysis reveals that firm size also influences earnings via real activities manipulations.

JEL Codes: G14; G30; G34

Keywords: Merger and Acquisition, Earnings Manipulation, Real Activity Manipulation

INTRODUCTION

It is commonly known that, in many corporate mergers, executives seek ways to increase their firms' stock prices prior to a stock merger of all kinds in order to enhance the bargaining power or to reduce cost of buying the targets. Earnings manipulation prior to a merger and acquisition (M&A) is an important strategy used to increase the stock price. One way to manage earnings is through manipulation of accruals (accrual manipulation), which does not generate direct cash flow consequences. Most researches on earnings manipulation before M&As these days focus on detecting abnormal accruals caused by under provisioning for expenses on bad debt or delay on asset write-offs. Among competing companies, managers also are motivated to manipulate real activities before M&As in order to increase their firms' market values. Cash flows, and accruals in some cases, can be affected by manipulating real activities. Even though, studies have shown that managers manipulate real activities to avoid reporting annual losses or to avoid some particular earnings threshold, there is a paucity of research that investigates whether or not executives attempt to increase their firms' stock prices before M&A through the real activities designed to manipulate earnings.

This paper's contribution is that by addressing whether management strategies are crafted to manipulate earnings prior to M&As. Particularly, this study presents new insight on the operational activities management before M&As. Roychowdhury (2006) defines real activities manipulation as management actions. And these actions are different from normal business practices, instead they undertaken with the primary objective of reaching certain earnings levels. The authors show that in addition to the goal of meeting a certain earnings threshold, strategic processes designed to manipulate earnings are also put in place by executives of other bidding companies in order to enhance their firm's market value for a better bargaining position in the M&A.

To better capture the effect of real operations better than accruals, the authors first examine production costs, cash flow from operations, and discretionary expenses variables. They then detect the manipulations of real activities for the bidding companies prior to entering a M&A process using these measures. The authors find evidence that the bidding companies, those relatively overvalued before the M&As, are trying to increase their stock price or market value through offering discounted price to jack up sales temporarily, overproducing to lower the cost of goods sold (COGS) aggressively.

Further analysis reveals that firm size also influences earnings due to these manipulations. Indeed, smaller bidders make stronger attempts to manipulate their firms' earnings to increase firm value before M&A attempts, especially through overproduction to report lower costs of goods sold on the balance sheet. There is also some evidence that the payment methods of M&As may also affect the real activities manipulations. The authors find that managers have more incentives to manipulate earnings for stock mergers before M&As.

Our findings are consistent with Roychowdhury (2006), who shows that activities designed to manipulate earnings are a strong tool for executives who want to achieve a particular endpoint. The contribution of this paper is to provide more evidence consistent with some bidding companies manipulating real activities to increase their stock prices to inflate firm values prior to M&As.

The paper proceeds as follows. In Section 2, the authors review the literature and empirical research conducted on both earnings manipulation before M&As and real activities manipulation. In Section 3, the authors identify bidders with higher possibility of involving in real activities manipulation before the M&As and develop hypotheses on how to differentiating them from the rest of the sample. In Section 4, the authors introduce what

types of data and models will be used in this paper, and present results from descriptive statistics. Section 5 contains the conclusions of this paper. In section 6, the implications of the evidence and potential areas for further research are presented.

LITERATURE REVIEW

Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the company's economic performance or to influence contractual outcomes that depend on reported accounting practices (Healy and Wahlen, 1999). Several papers investigate the possibility that earnings manipulation in the reporting process can be conducted through accounting estimates and accrual methods. In addition to that it also can be conducted via operational decisions. In Fudenberg and Tirole (1995), Healy and Wahlen (1999), Dechow and Skinner (2000), and Roychowdhury (2006), available earnings management methods to managers could be discount prices to temporarily increase and accelerate sales, alterations in shipment schedules, decreases in research and development (R&D) and maintenance expenses, and/or overproduction to report lower cost of goods sold (COGS).

According to Roychowdhury (2006), "Real activities manipulation is defined as departures from normal operational practices, motivated by managers' desire to mislead at least some stakeholders into believing certain financial reporting goals have been met in the normal course of operations." Certain methods for manipulating real activities, such as sales promotions using discounted price and/or a discretionary expenditures reduction, are optimal given certain economic circumstances. However, given economic conditions and the objective to meet or beat an earnings target, when managers engage in these activities more extensively than is normal, according to the definition of Roychowdhury (2006), they are manipulating real activities.

In many corporate M&As, the bidding company purchases the target firm using its own stock. Shareholders of the target company will receive a specified number of shares from the acquiring firm for each of the target shares after the transaction is completed. Given the target firm's purchase price, the acquiring firm's stock price when the merger agreement is reached determines how many acquiring firm shares exchanged for each share of the target firm. As a result, the executives of the bidding company have incentives to inflate their stock price before the M&A in order to purchase the target firm with less shares of their stock. Hirsch (1995) points out that a firm competing for stock mergers will try to increase its stock price used for the purchases prior to mergers. Particularly, Erickson and Wang (1999) investigate that how likely acquiring firms will try to increase their stock price before a stock-for-stock merger in order to lower the cost of buying the target company. They show that acquiring firms increase earnings prior to the merger attempt with a sample between 1985 and 1990. Therefore, there is evidence that executives might attempt to manipulate earnings before an acquisition in order to elevate their stock price and to save the cost for the acquisition.

Most of the previous research studying real activities management targets on the opportunistic reduction on reported expenses by decrease expenditures on R&D. Dechow and Sloan (1991) discover that approaching the end of CEOs' tenure, they will increase short-term earnings by reducing R&D spending. Baber (1991) and Bushee (1998) also provide similar evidence that reducing R&D spending helps hitting the earnings benchmarks.

Much other evidence reveals that there is a series of activities other than a reduction of R&D spending for managers to adopt. Bens (2002 and 2003) reports that because of the dilution of earnings per share, managers repurchase stock. The dilution maybe caused by employee exercising stock option and stock option grants. In addition, Graham's survey

(2005) shows that many survey respondents admit that they use methods of discretionary expenditures and/or capital investments reduction more often than use other manipulation methods. Will CEOs manage real activities in order to meet the threshold of zero earnings? Burgetahler and Dichev (1997) find a few limited evidence on this question. In Bartov (1993), if earnings decrease, firms will report higher profits from asset sales.

Roychowdhury (2006) provides evidence on other real activities management instead of just reductions in R&D. He finds that managers manipulate real activities to avoid reporting annual losses. These activities include price discounts to temporarily increase sales, overproduction to report lower cost of goods sold, and reduction of discretionary expenditures to improve reported margins.

Previous studies suggest that (1) executives may initiate activities designed to manipulate earnings before M&As to temporarily inflate their stock prices and (2) firms could manage their earnings through real activities manipulations to obtain certain financial goals. However, few studies have linked the two management initiatives together and investigate whether some executives manage their earnings through real activities manipulations before M&As in order to benefit from the temporary overvaluation.

HYPOTHESES DEVELOPMENT

To investigate real activities manipulation to inflate stock prices, the authors examine patterns in cash flow from operations (CFO), discretionary expenses, and production costs for bidders before they conduct M&As. The authors take discretionary expenses as the sum of R&D expenses, advertising expenses, and selling, general, and administration expenses (SG&A). Production costs represent the sum of cost of goods sold (COGS) and change in inventory during the period.

The authors use the same model as in Dechow (1998) and Roychowdhury (2006) to derive the normal levels of three variables—CFO, discretionary expenses, and production costs—for each firm-year in the sample. Any deviations from the normal levels will be interpreted as abnormal, such as abnormal CFO .etc. Following their methodology, this paper focus on three manipulation methods (shown below) along with the effects on the abnormal levels of all these variables:

1. Manipulating sales.
2. Reducing discretionary expenditures.
3. Overproducing or increasing production output to lower reported COGS.

For the first method, managers can accelerate the timing of sales and/or generate additional sales that are unsustainable. There are two methods to achieve these: 1 increasing price discounts; 2 more lenient credit terms. These two methods can also be used by executives to increase their sales during the year in order to manage earnings upward before a M&A. Thus, assuming positive margins, the additional sales would help push total earnings in the current period higher. These methods can be counted as price discounts which lead to lower cash flow over the sales period. Under these methods, sales management activities would likely lead to an abnormally low current period CFO and abnormally high production costs, as compared with the normal level given the sales level. On the other hand, if executives reduce current period discretionary expenditures to temporarily inflate current period earnings, they will incur abnormally low discretionary expenses. Finally, if firms produce more goods than necessary and exceed demand in order to lower the total cost per unit, the CFO will be lower than normal, given actual sales levels.

For the primary test, suspect firms are those bidders in M&As that are relatively

overvalued during the year of conducting M&As. Our hypotheses are as follows:

H1A: *Control for sales levels, the suspect firm (relatively overvalued bidders) exhibits at least one of the following prior to a M&A: unusually low CFO or discretionary expenses.*

H2A: *Control for sales levels, the suspect firm (relatively overvalued bidders) exhibits unusually high production costs prior to a M&A.*

It's also reasonable to believe that relatively smaller bidders have more incentives to execute earning manipulations than larger bidders prior to M&As. Specifically, the authors have the following hypothesis:

H3A: *After controlling for sale levels, smaller bidders have more incentive than larger bidders to conduct real activities earnings manipulations prior to a M&A.*

DATA AND ESTIMATION MODELS

Data Introduction

The authors use the firms found in the Compustat database from 1950 to 2005 to calculate the Compustat-based accounting variables in our estimations for every firm-year. As the CFO data are only available beginning in 1987, our sample period is from 1987 to 2005.

As the authors are investigating the pre-M&A earning manipulations, The authors collect data on M&As from Security Data Corporation's (SDC) Merger and Acquisition Database from Thomson One Banker. Since the primary focus is on the pre-M&A earnings manipulation activities, The authors use the annual data for primary tests, because the preliminary testing on real activities manipulations detected by Roychowdhury (2006) and preliminary patterns in CFO detected by Burgstahler and Dichev (1997) are all annual data.

Following the previous literature on real activities earnings manipulations, the data in this paper does not contain financial institutions, banks and firms in regulated industries. SIC codes are between 6000 and 6500 and between 4400 and 5000 respectively. The models are estimated by year and industry using normal CFO, production costs, discretionary expenses, and accruals or expected values. Imposing all the data availability requirements gives 100,506 firm-years from 1987 to 2005, along with 386 industries (Based on 4-digit SIC codes) and 12,899 individual firms. The authors use these samples to test the hypotheses in this paper.

Estimation Models

The authors express normal CFO to be a linear function of both sales and changes in sales in the current period, following Dechow (1998) and Roychowdhury (2006). To estimate the model, the authors use the cross-sectional regression for each industry and year shown below:

$$CFO_t / A_{t-1} = \alpha_0 + \alpha_1(1 / A_{t-1}) + \beta_1(S_t / A_{t-1}) + \beta_2(\Delta S_t / A_{t-1}) + \varepsilon . \quad (1)$$

A_t is the total assets at the end of period t . S_t are the sales during period t , and $\Delta S_t = S_t - S_{t-1}$.

The actual CFO minus the 'normal' CFO calculated using estimated coefficients from the corresponding industry-year model and the firm-year's sales and lagged assets gives abnormal CFO for every firm-year,.

The authors estimate normal production costs with the following industry-year regression:

$$PROD_t / A_{t-1} = \alpha_0 + \alpha_1(1 / A_{t-1}) + \beta_1(S_t / A_{t-1}) + \beta_2(\Delta S_t / A_{t-1}) + \beta_3(\Delta S_{t-1} / A_{t-1}) + \varepsilon . \quad (2)$$

Under the simplifying assumptions in Dechow (1998) and Roychowdhury (2006), a linear function of contemporaneous sales should be used to express discretionary expenses. Then the relevant regression would be as follows for each industry and year:

$$DISEXP_t / A_{t-1} = \alpha_0 + \alpha_1(1 / A_{t-1}) + \beta(S_{t-1} / A_{t-1}) + \varepsilon . \quad (3)$$

Models Statistics

The suspect firms are those bidding companies that are relatively overvalued in the year their M&As are conducted, because it is possible that they manipulate their earnings through real activities to temporarily inflate their stock prices before the M&A. For this examination, The authors rank the bidding companies by their market-to-book (MTB) value and choose those bidders as the suspect firms whose MTB values in the M&A year are higher than 95% and 99% of that of other bidders on their corresponding M&A year.

In Panel A of Table, the descriptive statistics of comparing the M&A firm-year to the entire sample are given. In Panel B of Table 1 presents the suspect firm-year to the full sample. The suspect firm-year corresponds to the relatively overvalued bidders in their corresponding M&A year. From the table, the authors can see that both the mean and median market values as well as the total assets of the bidding companies are much higher than the mean and median of the remaining companies. Even though the mean value of the MTB ratio is a little smaller for the M&A firms than the remaining firms, the relationship of the median values between them has reversed, including that their MTB value is actually comparable. When the authors compare the suspect firm-year with the remaining firm, the authors find an even higher gap between their mean and median market values and total asset values, especially the difference in their corresponding market values. The suspect firm-year's mean and median market value are much higher than the mean and median market values of the remaining companies. On the other hand, both the mean and median MTB of the suspect firms are much higher than the mean and median values of the remaining companies, which shows that the suspect bidders are actually over-valued in the year of their M&As.

In Table 2, the coefficients of some key regressions for estimating 'normal' levels are reported. The authors estimate these models with total population of 100,506 firm-years. The mean coefficient and t-statistics from standard errors across industry-years are reported in the table. The authors can see the mean adjusted R squares in each of these regressions are high, which shows the explanatory power of these specifications.

Table 3 shows the correlations matrix of various variables. The results are consistent with prior studies which find a strong negative correlation between accruals and CFO as a percentage of total assets.

EMPIRICAL RESULTS AND INTERPRETATION

Comparison between the suspect firm year and the rest of the sample

If the relative overvalued bidders undertake earnings manipulation activities prior to M&As. These activities adversely affect their CFO. Then calculating these abnormal CFO for these firm-years with the industry-year model described in Section 4.2, they should be negative compared to the rest of the sample. The authors estimate the following regression for this testing:

$$ABCFO_t = \alpha + \beta_1(SIZE)_{t-1} + \beta_2(MTB)_{t-1} + \beta_3(NetIncome)_t + \beta_4(SUSPECT_NI)_t + \varepsilon. \quad (4)$$

The dependent variable $ABCFO_t$ represents abnormal CFO in period t . This regression is also estimated with dependent variables of both abnormal production costs and abnormal discretionary expenses. $SUSPECT_NI$ is an indicator variable. It is set to one if the bidders are ranked within the 95% highest MTB ratios among all of the bidding companies in the corresponding year of M&As, and zero otherwise. The other two regressions for abnormal production cost and abnormal discretionary expenses are as following:

$$ABPROCD_t = \alpha + \beta_1(SIZE)_{t-1} + \beta_2(MTB)_{t-1} + \beta_3(NetIncome)_t + \beta_4(SUSPECT_NI)_t + \varepsilon. \quad (5)$$

$$ABEXP_t = \alpha + \beta_1(SIZE)_{t-1} + \beta_2(MTB)_{t-1} + \beta_3(NetIncome)_t + \beta_4(SUSPECT_NI)_t + \varepsilon. \quad (6)$$

The dependent variables, $ABPROD_t$ and $ABEXP_t$, are abnormal production costs and abnormal discretionary expenses, respectively.

Table 4 presents the empirical results of comparison of suspect firm-year with the rest of the sample. The first two columns list the results for the relatively overvalued bidders (the highest 1% and highest 5% of bidders in the MTB ratio in their corresponding M&A year), or the suspected firm-years. For the bidders that have the highest 1% level of MTB ratios, the abnormal CFO is negative and correlated to the $SUSPECT_NI$ dummy variables, which shows that the abnormal CFOs of those suspect firm-years are significantly lower than the remaining firm-years'. These results are consistent with hypothesis H1A: "After controlling for sales levels, the suspect firm (relatively overvalued bidders) exhibits at least one of the following prior to a M&A: unusually low CFO or unusually low discretionary expenses." The authors also can see that for the bidders that have both the highest 1% level and highest 5% level of MTB ratios, the abnormal production cost is significantly positively correlated to the $SUSPECT_NI$ dummy variable (the significance is at the 1% level in both cases), which shows that the abnormal production costs of those suspect firm-years are significantly higher than the remaining firm-years'. These results are consistent with hypothesis H2A: "After controlling for sales levels, the suspect firm (relatively overvalued bidders) exhibits unusually high production costs prior to a M&A." In conclusion, these results provide strong evidence to support our hypotheses that bidding companies that are relatively overvalued prior to a M&A, conduct real activities to attempt to manipulate earnings before the M&A. These activities may or may not inflate their firm's stock price; if they do, the firm will benefit from the acquisition.

In order to test hypothesis H3A, The authors ranked bidders based on their firm size and conducted the regressions in (4), (5), and (6). The results are presented in Table 5. The authors find a consistent trend for the results of regression (5), the regression on the abnormal production cost. With the firm size decreasing from the highest 1% level to the lowest 1% level, the coefficient of the $SUSPECT_NI$ dummy changes continuously from negative to positive. During this process, the absolute t-value for the negative coefficient of $SUSPECT_NI$ also decreases continuously until the coefficient finally becomes positive. This consistent trend provides evidence that the smaller bidders have more intention to manipulate their earnings to inflate their firm's stock price prior to M&As, especially through overproduction to report a lower cost of goods sold.

Table 6 presents the results for comparing the bidding companies' firm-years with the remaining samples. The authors also present the results comparing the bidding companies' firm-years, which are particularly stock-to-stock mergers, with the remaining samples. The

authors do not find significant results in either case; however, when stock-for-stock mergers are used, instead of all M&As, the sign for the coefficient of *SUSPECT_NI* is negative, which is consistent with the expected sign of hypothesis H3A.

CONCLUSION AND FUTURE RESEARCH

Our study finds evidence consistent with previous research in that some managers manipulate real activities to inflate their firm's market values before M&As. Specifically, the authors find that relatively overvalued bidders conduct earnings manipulation through real activities before M&As. The empirical results suggest that discounts price to temporarily increase sales and overproducing to lower cost of goods sold reported are activities that executive employ to attempt to increase firm value prior to M&As. Further analysis reveals that firm size also influences earnings through real activities manipulations. Smaller bidders are more likely to initiate activities designed to manipulate their earnings to inflate firm value prior to M&As, especially through overproduction to report lower cost of goods sold. There is also some evidence that the payment methods of M&As may also affect real activities manipulations.

An important and very interesting issue for further research is, if both kinds of earnings manipulation methods are possible and they have the flexibility to engage in both, which types of manipulation managers will choose and how, real activities manipulation or accrual manipulation.

REFERENCES

- Bartov, E., 1993. The timing of asset sales and earnings manipulation. *The Accounting Review* 68, 840-855.
- Burgstahler, D. Dichev, I., 1997. Earnings management to avoid earnings decreases and losses. *Journal of Accounting and Economics* 24, 99-126.
- Dechow, P.M., Kothari, S.P., Watts, R.L., 1998. The relation between earnings and cash flows. *Journal of Accounting and Economics* 25, 133-168.
- Dechow, P.M., Richardson, S.A., Tuna, I., 2003. Why are earnings kinky? *Review of Accounting Studies* 8, 355-384.
- Dechow, P.M., Skinner, D.J., 2000. Earnings management: reconciling the views of accounting academics, parishioners and regulators. *Accounting Horizons* 14, 235-250.
- Dechow, P.M., Sloan, R., Sweeney, A., 1995. Detecting earnings management. *The Accounting Review* 70, 193-225.
- Dechow, P.M., Sloan, R., Sweeney, A., 1996. Causes and consequences of earnings manipulation: an analysis of firms subject to enforcement actions by the SEC. *Contemporary Accounting Research* 13, 1-36.
- DeGeorge, F., Patel, J., Zeckhauser, R., 1999. Earnings management to exceed thresholds. *Journal of Business* 72, 1-33.
- Durtschi, C., Easton, P., 2005. Earnings management? The shapes of the frequency distributions of earnings metrics are not evidence ipso facto. *Journal of Accounting Research* 43, 521-556.
- Guidry, F., Leone, A., Rock, S., 1999. Earnings-based bonus plans and earnings management by business unit managers. *Journal of Accounting and Economics* 26, 113-142.
- Healy, P.M., Wahlen, J.M., 1999. A review of the earnings management literature and its implications for standard setting. *Accounting Horizons* 13, 365-383.
- Henock Louis, 2004. Earnings management and the market performance of acquiring firms. *Journal of Financial Economics* 74, 121-148.

- Merle Erickson and Shiing-wu Wang, 1999. Earnings management by acquiring firms in stock for stock mergers. *Journal of Accounting and Economics* 27, 149-176.
- Sugata Roychowdhury, 2006. Earnings management through real activities manipulation. *Journal of Accounting and Economics* 42 (2006) 335-370.
- Teoh, S., Welch, I., Wong T., 1986b. Earnings management and the long-run underperformance of initial public offerings. *Journal of Finance* 53, 1935-1974.
- Teoh, S., Welch, I., Wong T., 1998a. Earnings management and the long-run underperformance of seasoned equity offerings. *Journal of Financial Economics* 50, 63-100.

Table 1.
Descriptive Statistics

Panel A: Descriptive Statistics for M&A and Non-M&A Firm-Year				
	M&A Firm-Year		Non M&A Firm-Year	
	Mean	Median	Mean	Median
<i>Full sample of 100,506 firm-year with 24,064 M&A firm-year</i>				
MVE (\$ million)	3038.117	259.196	990.436	48.918
MVE/BE	2.847	2.080	3.277	1.689
Total Assets (\$ million)	2399.128	246.057	1032.814	52.145
Sales (\$ million)	2154.743	220.982	946.537	45.888
IBEI (\$ million)	104.724	7.608	32.219	0.176
CFO (\$ million)	227.972	14.860	87.674	1.158
Accruals (\$ million)	-123.237	-7.704	-55.478	-1.886
IBEI/A	-0.498	0.041	-1.317	0.007
CFO/A	-0.791	0.087	-0.523	0.041
Accruals/A	-0.645	-0.051	-1.234	-0.057
Production Costs/A	4.914	0.735	2.155	0.679
Discretionary Expenses/A	1.718	0.340	2.125	0.363
Inventory Turnover Ratio	27.242	7.981	34.697	7.220
Panel A: Descriptive Statistics for Suspect High MTB M&A and Rest Sample				
	Suspect Firm-Years		Rest of the Sample	
	Mean	Median	Mean	Median
<i>Full sample of 100,506 firm-year with 907 suspect firm-year</i>				
MVE (\$ million)	11555.268	727.871	1388.965	71.701
MVE/BVE	40.918	17.971	2.830	1.775
Total Assets (\$ million)	2223.704	139.096	1352.092	76.133
Sales (\$ million)	1901.869	96.914	1229.750	69.411
IBEI (\$ million)	224.937	-0.197	47.989	0.780
CFO (\$ million)	335.722	5.334	119.321	2.456
Accruals (\$ million)	-111.156	-7.550	-71.351	-2.540
IBEI/A	-0.551	-0.010	-1.126	0.018
CFO/A	-5.203	0.076	-0.546	0.054
Accruals/A	-8.262	-0.107	-1.028	-0.055
Production Costs/A	6.444	0.580	2.789	0.695
Discretionary Expenses/A	10.607	0.682	1.950	0.354
Inventory Turnover Ratio	41.034	10.454	32.792	7.403

Table 2
Model Parameters

	CFO_t / A_{t-1}	$DISEXP_t / A_{t-1}$	$PROD_t / A_{t-1}$	$Accruals_t / A_{t-1}$
Intercept	-0.0064 (5.7838)	0.4293** (14.0001)	0.5096* (29.6425)	-0.0804** (3.2664)
$1 / A_{t-1}$	-10.3416** (431.6289)	9.2526** (317.5167)	64.6494** (2293.7753)	6.0369 (421.7864)
S_t / A_{t-1}	0.1138** (3.9911)		0.3746* (19.6096)	
S_{t-1} / A_{t-1}		-0.0010 (10.2974)		
$\Delta S_t / A_{t-1}$	0.0371* (2.4759)		-0.3362 (25.5510)	0.0105 (9.7711)
$\Delta S_{t-1} / A_{t-1}$			0.9907 (80.4640)	
PPE_{t-1} / A_{t-1}				-0.0238 (3.9218)
Adjusted R^2	0.42	0.40	0.84	0.36

Table 3
Correlation Table

	Sale/A	IBEI/A	CFO/A	Accruals/A	PROD/A	DISEXP/A	Abnormal CFO	Abnormal PROD	Abnormal DISEXP
Sale/A	1.0000000								
IBEI/A	- 0.1115154	1.0000000							
CFO/A	- 0.0042318	0.4717893	1.0000000						
Accruals/A	- 0.1043790	0.6492041	- 0.2573695	1.0000000					
PROD/A	0.0054564	0.2035266	- 0.7740803	0.3673666	1.0000000				
DISEXP/A	0.0939079	- 0.6850184	- 0.7494820	- 0.1820542	0.6776423	1.0000000			
Abnormal CFO	0.0000003	0.1320512	0.0973795	0.0983379	- 0.0006720	- 0.1280965	1.0000000		
Abnormal PROD	- 0.0000015	0.0160754	0.0009481	- 0.0005666	0.0064296	- 0.0224940	0.0109751	1.0000000	
Abnormal DISEXP	0.0000000	- 0.2010202	- 0.0784240	- 0.2748995	0.0081559	0.3298419	- 0.3884192	- 0.0711384	1.0000000

Table 4
Comparison between suspect firm-year and the rest of the sample

Abnormal CFO						
	Level of Market to Book Ratio					
	99%					
	Higher	95% Higher	90% Higher	90% Lower	95% Lower	99% Lower
Intercept	0.05728* (1.83)	0.5636* (1.80)	0.05631* (1.80)	0.05546* (1.77)	0.05553* (1.77)	0.05502* (1.76)
SIZE	-0.00692 (-1.10)	-0.00674 (-1.07)	-0.00680 (-1.08)	-0.00688 (-1.10)	-0.00692 (-1.10)	-0.00697 (-1.11)
MTB	0.0006184 (0.53)	0.0000655 (0.56)	0.00006518 (0.55)	0.00006491 (0.55)	0.00006461 (0.55)	0.00006751 (0.57)
Net Income	0.01285*** (56.57)	0.01285*** (56.68)	0.01285*** (56.68)	0.01285*** (56.68)	0.01285 (56.68)	0.01289 (56.77)
SUSPECT_NI	-0.80219** (-1.89)	-0.10287 (-0.63)	-0.02893 (-0.27)	0.07115 (0.46)	0.13823 (0.70)	1.30836*** (3.02)

*Significant at the 10% Level. ** Significant at the 5% Level. *** Significant at the 1% Level.

Abnormal Production Costs						
	Level of Market to Book Ratio					
	99%					
	Higher	95% Higher	90% Higher	90% Lower	95% Lower	99% Lower
Intercept	0.01002 (0.90)	0.01164 (1.04)	0.01111 (0.99)	0.01106 (0.99)	0.01118 (1.00)	0.01113 (1.00)
SIZE	-0.00235 (-1.05)	-0.00263 (-1.18)	-0.00217 (-0.97)	-0.00223 (-1.00)	-0.00224 (-1.00)	-0.00224 (-1.00)
MTB	0.0000834* (-1.77)	0.0000909** (-1.93)	0.00008992** (-1.91)	-0.00009** (-1.91)	0.00008997** (-1.91)	0.00008982** (-1.91)
Net Income	0.00002432	0.00001895	0.00001792	0.00001837	0.00001819	0.00002057

	(0.30)	(0.24)	(0.22)	(0.23)	(0.23)	(0.26)
SUSPECT_NI	1.38986***	0.15757***	-0.01080	0.01047	0.00555	0.08295
	(9.12)	(2.71)	(-0.28)	(0.19)	(0.08)	(0.52)

*Significant at the 10% Level. ** Significant at the 5% Level. *** Significant at the 1% Level.

Abnormal Discretionary Expenses

	Level of Market to Book Ratio					
	99% Higher	95% Higher	90% Higher	90% Lower	95% Lower	99% Lower
Intercept	-	-	-	-	-	-
	0.63118***	-0.63157***	-0.63180***	0.63144***	-0.63163***	-0.63146***
	(-4.18)	(-4.18)	(-4.18)	(-4.18)	(-4.18)	(-4.18)
SIZE	0.10739***	0.10744***	0.10759***	0.10737***	0.10738***	0.10737***
	(3.54)	(3.54)	(3.55)	(3.54)	(3.54)	(3.54)
MTB	0.00155***	-0.00155***	-0.00155***	0.00155***	-0.00155***	-0.00155***
	(-3.27)	(-3.26)	(-3.26)	(-3.26)	(-3.26)	(-3.26)
Net Income	0.09535***	-0.09535***	-0.09535***	0.09535***	-0.09535***	-0.09535***
	(-87.15)	(-87.15)	(-87.15)	(-87.15)	(-87.15)	(-87.15)
SUSPECT_NI	-1.58425	-0.12266	-0.15221	-0.04372	0.07114	-0.35733
	(-0.37)	(-0.08)	(-0.14)	(-0.02)	(0.03)	(-0.06)

*Significant at the 10% Level. ** Significant at 5% Level. *** Significant at 1% Level.

Table 5
Results based on Different Levels of Firm Size

Abnormal CFO						
	Level of Firm Size					
	99% Higher	95% Higher	90% Higher	90% Lower	95% Lower	99% Lower
Intercept	0.06090** [1.92]	0.06732** [2.09]	0.06993** [2.15]	0.05649* [1.79]	0.05364* [1.71]	0.05607* [1.79]
SIZE	-0.00821 [-1.28]	-0.01027 [-1.54]	-0.01133* [-1.65]	-0.00697 [-1.10]	-0.00649 [-1.03]	-0.00690 [-1.10]
MTB	0.00007 [0.55]	0.00007 [0.55]	0.00007 [0.55]	0.00007 [0.55]	0.00007 [0.55]	0.00007 [0.55]
Net Income	0.01285*** [56.69]	0.01285*** [56.70]	0.01285*** [56.70]	0.01285*** [56.69]	0.01285*** [56.69]	0.01285*** [56.69]
SUSPECT_NI	0.18747 [0.93]	0.14266 [1.43]	0.11829 [1.57]	0.00407 [0.02]	0.33937 [1.08]	0.45511 [0.53]

*Significant at the 10% Level. ** Significant at 5% Level. *** Significant at 1% Level.

Abnormal Production Costs						
	Level of Firm Size					
	99% Higher	95% Higher	90% Higher	90% Lower	95% Lower	99% Lower
Intercept	0.00862 [0.76]	0.00748 [0.65]	0.00796 [0.69]	0.01163 [1.03]	0.01142 [1.02]	0.01108 [0.99]
SIZE	-0.00151 [-0.66]	-0.00111 [-0.47]	-0.00119 [-0.49]	-0.00231 [-1.03]	-0.00227 [-1.02]	-0.00222 [-0.99]
MTB	-0.00009** [-1.91]	-0.00009** [-1.91]	-0.00009** [-1.91]	-0.00009** [-1.91]	-0.00009** [-1.91]	-0.00009** [-1.91]
Net Income	0.00002 [0.22]	0.00002 [0.22]	0.00002 [0.22]	0.00002 [0.22]	0.00002 [0.22]	0.00002 [0.23]

SUSPECT_NI	-0.11060	-0.04863	-0.02837	-0.01930	-0.02277	0.11582
	[-1.56]	[-1.38]	[-1.06]	[-0.28]	[-0.20]	[0.38]

*Significant at the 10% Level. ** Significant at 5% Level. *** Significant at 1% Level.

Abnormal Discretionary Expenses

	Level of Firm Size					
	99% Higher	95% Higher	90% Higher	90% Lower	95% Lower	99% Lower
Intercept	-	-	-	-	-	-
	0.64934***	0.68121***	0.69776***	0.60799***	0.62368***	0.63166***
	[-4.25]	[-4.39]	[-4.46]	[-3.99]	[-4.11]	[-4.18]
SIZE	0.11243***	0.12255***	0.12892***	0.10355***	0.10605***	0.10740***
	[3.63]	[3.80]	[3.89]	[3.40]	[3.49]	[3.54]
MTB	0.00155***	0.00155***	0.00155***	0.00155***	0.00155***	0.00155***
	[-3.26]	[-3.26]	[-3.26]	[-3.26]	[-3.26]	[-3.26]
Net Income	0.09535***	0.09536***	0.09536***	0.09535***	0.09535***	0.09535***
	[-87.15]	[-87.15]	[-87.16]	[-87.15]	[-87.15]	[-87.14]
SUSPECT_NI	-0.77367	-0.66031	-0.58755*	-1.10694	-0.90196	0.10697
	[-0.79]	[-1.37]	[-1.61]	[-1.20]	[-0.60]	[0.03]

*Significant at the 10% Level. ** Significant at 5% Level. *** Significant at 1% Level.

Table 6

Comparison between Merger & Acquisition Firm-Year and the Rest of the Year

	Abnormal CFO		Abnormal Production Cost		Abnormal Discretionary Expense	
	Full Sample	By Stock	Full Sample	By Stock	Full Sample	By Stock
Intercept	0.05611* (1.79)	0.05674* (1.81)	0.01116 (1.00)	0.01130 (1.01)	- (-4.18)	- (-4.14)
SIZE	-0.00812 (-1.24)	-0.00662 (-1.05)	-0.00239 (-1.03)	-0.00204 (-0.91)	0.10768*** (3.54)	0.10841*** (3.50)
MTB	0.00006530 (0.55)	0.00006513 (0.55)	0.00008994** (-1.91)	0.00008994** (-1.91)	0.00155*** (-3.26)	-0.00107** (-2.18)
Net Income	0.01285*** (56.69)	0.01285*** (56.69)	0.00001806 (0.23)	0.00001797 (0.22)	0.09535*** (-87.15)	0.09595*** (-87.63)
SUSPECT_NI	0.02193 (0.61)	-0.06571 (-0.71)	0.00282 (0.22)	-0.03558 (-1.08)	-0.05521 (-0.12)	0.05068 (-0.11)

*Significant at the 10% Level. ** Significant at the 5% Level. *** Significant at the 1% Level.