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FAIR VALUE ACCOUNTING AND EARNINGS MANAGEMENT

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Abstract

Many have argued that measuring financial instruments at fair value might not reflect firms' financial condition. Prior study finds that managers manipulate the "disclosure" of fair value measurement (Song *et al.* 2010). In this study, we attempt to provide evidence regarding manager's incentive to manipulate the disclosure of fair value measurements by examining whether the disclosure of less relevant fair value measurement is related to the odds of earnings management. We find that firms with more Level 3 assets and liabilities (i.e., less value relevant fair value measurement) are more likely to recognize positive unrealized gains to meet or beat analyst forecast target. In addition, we find that only firms with weak corporate governance disclose more Level 3 fair value liabilities and recognize unrealized gains into reported earnings to meet or beat analyst forecast target. This evidence suggests that managers manipulate the disclosure of fair value measurement in order to manage reported earnings via the adoption of fair value option.

Keywords: Fair Value Option, Fair Value Measurement, FAS157, FAS159, Earnings Management

1. Introduction

Standard-setters have increased the extent to which financial instruments are recognized at fair value for decades. In September 2006, the Financial Accounting Standards Board (FASB) issued FAS157 (FASB, 2006), which creates a framework for the definition of fair value for assets and liabilities. In 2007, it issued FAS159 (FASB, 2007), which provides firm an option to allow the use of fair value option to eligible financial assets and liabilities. In 2010, the FASB proposed that all financial instruments be recognized at fair value, with limited exceptions for receivables and payables and some companies' own debt (FASB, 2010). In early 2013, the FASB issued an exposure draft that proposes that all financial instruments should be measured at fair value except certain debt financial assets and most financial liabilities (FASB, 2013). Yet, the fair value accounting has continuously received widespread attention and scrutiny from the media, regulators, and academic researchers.[1] Academic research provides evidence that even

[1] Two dissenting FASB board members expressed concerns that fair value option could lead to opportunistic election and weaken cross-sectional comparability. The American Bankers Association also believes that measuring financial instrument at fair value would not be useful in assessing financial condition (Yingling, 2009).

the "disclosure" of fair values might be a concern (Song *et al.* 2010). In this paper, we attempt to provide evidence regarding manager's incentive to manipulate the disclosure of fair value measurements.

Song *et al.* (2010) find the disclosure of fair values based on less transparent inputs (Level 3 fair values) is less value relevant than the disclosure of fair values based on more transparent inputs (Level 1 and Level 2 fair values).[2] In addition, they find that the value relevant of Level 3 fair values increases for firms with strong corporate governance, implying the managerial manipulation causes the less value relevant Level 3 fair value disclosure. Yet, it is not clear why managers would like to manipulate the "disclosed" measures of Level 3 fair values. In this paper, we argue that managers want to manipulate the "disclosed" Level 3 fair values in order to manipulate the unrealized gains (losses) which can be recognized into reported earnings via FAS159.

FAS159, The Fair Value Option for Financial Assets and Financial Liabilities, provides managers an option to recognize unrealized gains (losses) due to change in fair value into reported earnings. Under FAS159, firms have the option to report selected financial assets and liabilities at fair value. By adopting FAS159, managers have a channel to manage reported earnings by manipulating the disclosure of fair value measures. Since the measures of Level 3 fair values are based on unobservable firm-generated inputs, it provides manager more flexibility in managing the valuation of Level 3 assets and liabilities. Thus, we expect that mangers in firms with more disclosed Level 3 fair values are more likely to manage Level 3 fair value measures as well as reported earnings by recognizing unrealized gains (losses) due to change in fair values into income statement.[3]

Using a sample of quarterly reports by firms after November 15, 2007 (effectiveness date of FAS159), we classify a firm as FAS159 adopter if the firm reports unrealized gains (losses) on change in fair value measurement. We first examine whether fair value adopters are more likely to beat the targets than non-adopters.[4] Consistent with (Guthrie *et al.* 2011; Chang *et al.* 2009), we do not find any evidence suggesting that firms opportunistically use FAS159 to manage earnings upward. Yet, when we focus on adopting firms, we find that firms disclosing more Level 3 financial assets and liabilities are more likely to recognize unrealized gains to beat consensus analyst forecasts (Burgstahler and Dichev, 1997; Burgstahler and Eames, 2006; Degeorge *et al.* 1999). In addition, consistent with Song *et al.* (2010), we also find that the amount of disclosed Level 3 fair value liabilities is related to the odds of recognizing unrealized gains to meet or beat analyst forecast target only for firms with weak corporate governance; while such relationship cannot be observed for firms with strong corporate governance.

Our findings contribute to the literature in several ways. First, we contribute to literature regarding the value relevance of fair value measurements. Song *et al.* (2010) find that Level 3 fair value disclosure is less reliable and imply that managers' manipulation might cause the less value relevant disclosure. However, since the disclosure of fair values has no direct effect on reported earnings, it is not clear why managers want to manipulate the disclosure of fair value measures. We provide evidence suggesting that even FAS157 only provides the framework for defining and measuring fair values, managers still have incentives to manipulate the fair value measures when FAS159 is also adopted. Second, the results add to our understanding of firms' incentives regarding the adoption of the fair value option to financial assets and liabilities under FAS159. Although FAS159 received widespread critics that an instrument-by-instrument option

[2] The FASB issued FAS157, Fair Value Measurements, in 2006. FAS157 establishes a framework for measuring and disclosing fair value. It prioritizes the source of information used in fair value measurements into three levels, where levels are based on the transparency of inputs that market participants would use in pricing the assets or liabilities. Three levels are as follows: Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that firm have the ability to access at the measurement date. Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly, such as quoted prices for similar assets or liabilities in active markets, interest rates, volatilities, prepayment speeds and default rates. Level 3 inputs are unobservable inputs for the asset or liability.

[3] In order to be consistent with Song *et al.* (2010), we use "disclosed" financial instruments to proxy for the instrument that are elected to adopt the fair value option. We argue that the more disclosed Level 3 financial instruments, the more likely that the firms will adopt fair value option to Level 3 fair value measures.

[4] Although it is possible for firms to recognize unrealized losses to smooth income through fair value accounting, prior studies have focused on using FAS159 to recognize unrealized gains in order to meet or beat an earnings target (Guthrie *et al.* 2011; Song, 2008). One possible reason is that one of the purposes of FAS159 is to eliminate earnings volatility. Thus, it will be less likely to identify managers' incentive even we observe more smooth earnings pattern.

could lead to opportunistic election and weaken cross-sectional comparability, prior studies find that fair value option adopters have more derivative, report more ineffective hedge, and exhibit lower earnings volatility than non-adopters, suggesting that firms adopt fair value option as regulators' intent (Chang *et al.* 2009; Guthrie *et al.* 2011; Song, 2008; Fiechter, 2011). We provide evidence suggesting that managers are able to take advantage of FAS159 when they have more Level 3 fair value financial assets and liabilities.

The paper proceeds as follows. The next section describes the institutional background and hypotheses development. The third section provides research method and an overview of our sample. The fourth section discusses our empirical results and the fifth section concludes.

2. Institutional Background and Hypotheses Development

Consistent with its increasing application of fair value and to increase consistency with international accounting standards, the FASB issued two recent fair value standards. In September 2006, it issued FAS157 (FASB, 2006), which creates a framework for the definition of fair value for assets and liabilities and increases the disclosure requirements to support assets and liabilities recognized at fair value. In 2007, it issued FAS159 (FASB, 2007), which expanded the range of assets that could receive fair value treatment.

2.1. FAS157 Fair Value Measurements

FAS157 requires fair value assets and liabilities to be disclosed by 3 different levels, where levels are based on the transparency of inputs that market participants would use in pricing the assets or liabilities. Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities that firm have the ability to access at the measurement date. Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly, such as quoted prices for similar assets or liabilities in active markets, interest rates, volatilities, prepayment speeds and default rates. Level 3 inputs are unobservable inputs for the asset or liability. In particular, Level 3 financial instruments are valued based on unobservable inputs, which subjects to greater estimation and judgment by management.

Prior studies have shown that there is considerable discretion in recognition, disclosure, and presentation of fair value estimates (Chee, 2011; Hilton and O'brien, 2009; Song *et al.* 2010). Specifically, Song *et al.* (2010) examine the value relevance of Level 1, 2 and 3 financial instruments and suggest that the value relevance of Level 3 financial instruments is less than that of Level 1 and 2. In addition, they find that the value relevance of fair values, especially Level 3 fair values, is greater for firms with strong corporate governance instruments. This evidence suggests that managerial manipulation incentives might affect the disclosure of Level 3 fair value measurements.

2.2. FAS159 Fair Value Option for Financial Assets and Financial Liabilities

Unlike FAS157, which only requires firms' footnote disclosures, FAS159 gives firms options to apply fair value measurements to permitted financial assets or financial liabilities. Under FAS159, firms have the option to report selected financial assets and liabilities at fair value, on an instrument-by-instrument basis. Once the election is made, it is irrevocable. Unrealized gains (losses) of elected instruments are reported in the income statement. The fair value that uses to determine unrealized gains (losses) under FAS159 is based on the framework of fair value measurements that provided by FAS157. FAS159 provides the transition provisions, which permits a one-time election for existing positions at the adoption date with a cumulative-effect adjustment included in opening retained earnings. Any changes in fair value after adoption should be included in earnings. In addition, FAS159 establishes presentation and disclosure requirements designed to facilitate comparisons between entities that choose different measurement attributes for similar types of assets and liabilities.

FAS159 is intended to enable firms to mitigate the volatility in earnings that results from using different measurement attributes in reporting related assets and liabilities and to enable firms to achieve consistent accounting without having to apply complex hedge accounting provisions (FASB, 2007). Although FAS159 has received widespread attention and scrutiny from the media, and regulators (Boyd, 2008; Leone, 2007), empirical evidence generally suggests that the adoption of fair value option is as the regulators' intent (Chang *et al.* 2009; Fiechter, 2011; Guthrie *et al.* 2011).

For example, Guthrie *et al.* (2011) do not find evidence of systematic opportunistic election of the fair value option. Instead, they find that hedge derivatives users are more likely to apply FAS159.[5] Chang *et al.* (2009) find that the regular adoption of the fair value option is explained by variables related to accounting mismatches. Consistent with this evidence, Fiechter (2011) examines the adoption of IAS39 and finds that adopters of IAS 39 had lower earnings volatility. Although Henry (2009) finds that some early-adopt-than-rescind incidents opportunistically apply FAS159, her results are based on 11 early adopters, which is argued to be hard to generalize to normal adopters.

2.3. Hypotheses Development

As discussed before, Song *et al.* (2010) provide indirect evidence suggesting that managerial manipulation might cause less value relevance Level 3 fair value measures. Since FAS157 only provides the framework of the disclosure of fair value, in this paper, we argue that focusing on FAS157 alone is not sufficient to identify manager's incentive. The application of FAS157 cannot be disentangled from the adoption of FAS159. FAS159 allows firms to recognize unrealized gains (losses) due to change in fair value into reported earnings, which provide managers a chance to alter reported earnings. Although prior studies fail to find any systematic evidence suggesting managers' opportunistic earnings management behavior via FAS159 (Chang *et al.* 2009; Fiechter, 2011; Guthrie *et al.* 2011), we argue that it is because prior studies fail to consider FAS157 and FAS159 together.

Since Level 3 fair value measures rely on unobservable inputs, which subjects to greater estimation error and managerial judgment, managers in firms with more Level 3 fair values measurement can take advantage of the valuation of Level 3 financial instruments. By adopting FAS159 along with FAS157, managers are able to manipulate the valuation of Level 3 fair value measurements and recognize unrealized gains (losses) due to change in fair value into reported earnings, which provide managers a channel to manage earnings.

Following prior studies (Guthrie *et al.* 2011; Song, 2008), we focus on the use of FAS159 to recognize unrealized gains in order to meet or beat an analyst target. We expect that firms with more disclosed Level 3 fair value instruments have more flexibility to "decide" the unrealized gains on change in fair value. As a result, a positive relation between the disclosed amount of Level 3 fair value measurements and the odds of recognizing unrealized gains to meet or beat analyst forecast target should be observed. This leads to our first hypothesis:

H1: Firms with more Level 3 fair value instruments are more likely to recognize unrealized gains to manage earnings upward to meet or beat analyst forecast target.

We also consider the extent to which stronger corporate governance mechanisms can mitigate managerial earnings management behavior. We do so by testing whether the odds of using unrealized gains to meet or beat the target vary with the strength of a firm's corporate governance. We expect that, when corporate governance is stronger, managers are unlikely to manipulate the valuation of Level 3 fair value instrument and recognize unrealized gains to beat the target. On the other hand, when corporate governance is weak, managers in firms with more Level 3 financial assets are more likely to use fair value option to manage earnings upward, which leads to our second hypothesis:

[5] Song (2008) finds that adopters systematically benefited from earnings management and balance sheet restructuring. However, Guthrie *et al.* (2011) suggest that the discrepancy between Song (2008) and the other findings may stem from Song not differentiating between early and regular adopters in his sample.

H2: Firms with more Level 3 fair value measurements are more likely to recognize unrealized gains to manage earnings upward to meet or beat analyst forecast target only when corporate governance is weak.

3. Research Design, Sample and Summary Statistic

We first test whether firms that adopt fair value option (FAS159) are more likely to meet or beat analyst forecast target than non-adopters. Although there has been concern that managers use fair value option to manage earnings (Boyd, 2008; Leone, 2007), empirical results do not find evidence of systematic opportunistic election of the fair value option (Guthrie *et al.* 2011; Chang *et al.* 2009; Fiechter, 2011). In order to replicate findings from prior studies, we estimate following equation (1):

$$D\_EM = \alpha + \beta_0 ADOPTER + \beta_1 SIZE + \beta_2 BTM + \beta_3 SHARES + \beta_4 NUM\_ESTIMATE + \beta_5 ELIGIBLE + \beta_6 HEDGE + \beta_7 EVOL + \varepsilon \quad (1)$$

We identify a firm as fair value adopter (ADOPTER=1) if the firm reports non-missing total fair value changes including earnings from Compustat Fundamentals. D_EM is a dummy variable which equals one when a firm whose earnings is greater than or equal to analyst forecasts, and zero when a firm whose earnings is below forecasts. We do not expect to have any significant coefficient on ADOPTER.

Following prior research, we include various control variables that might correlate with earnings surprises. We control for firm size (SIZE) and book-to-market ratio (BTM). Skinner and Sloan (2002) find that high-growth firms might be more likely to beat analyst forecasts to avoid the torpedo effect associated with missing analyst forecast targets. The number of outstanding shares (SHARES) is included because firms with more outstanding shares have smaller EPS and are thus more likely to beat analyst forecasts of EPS (Bartov *et al.* 2002).

We also control for variables that affect firms' adoption of fair value option. Following Chang *et al.* (2009) and Guthrie *et al.* (2011), we control for eligible items for adopting fair value option (ELIGIBLE). Because prior studies suggest that hedge accounting users are more likely to apply the fair value option (Guthrie *et al.* 2011; FASB, 2006), we use HEDGE to capture whether the firm is hedge accounting user. In addition, we include EVOL to capture firms' earnings volatility. One of FASB's objectives for FAS159 is to eliminate earnings volatility caused by measuring related instruments differently.

Our first hypothesis suggests that managers in firms with more Level 3 fair value instruments are more likely to manages the valuation of fair values and recognize unrealized gains to manage earnings upward. In order to test our **H1**, we estimate following equation (2):

$$D\_EM\_FV = \alpha + \beta_0 FVA1 + \beta_1 FVA2 + \beta_3 FVA3 + \beta_4 FVL12 + \beta_5 FVA3 + \beta_6 SIZE + \beta_7 BTM + \beta_8 SHARES + \beta_9 NUM\_ESTIMATE + \beta_{10} ELIGIBLE + \beta_{11} HEDGE + \beta_{12} EVOL + \varepsilon \quad (2)$$

D_EM_FV is a dummy variable which equals one when a firm whose earnings before unrealized gains due to change in fair value is below forecasts but reports sufficient unrealized gains that allow earnings to meet or beat analyst forecasts, and zero when a firm whose earnings are below forecasts. Following Song *et al.* (2010), we combine Level 1 and Level 2 liabilities (FVL12) due to the low frequency of fair value liability reporting in our sample. Per **H1**, we expect that firms with more Level 3 financial assets and liabilities are more likely to manipulate fair value measurements in order to recognize unrealized gains to meet or beat the target. Thus, β_3 and β_5 are predicted to be significantly positive.

Our second hypothesis suggests that only firms with weak governance are able to manipulate Level 3 fair value measurements and manage earnings upward to meet or beat the target. Hence, we re-estimate equation (2) by partitioning our sample into two groups: firms with strong corporate governance and firms with weak corporate governance. We predict positive coefficients on FVA3 and FVL3 only for the firms with weak corporate governance.

3.1. Sample Selection

We derive our sample from the Compustat Fundamentals Quarterly Database from November 15, 2007 to 2013. November 15, 2007 is the official effective date of FAS159. We restrict our sample to regular adopters because Henry (2009) documents that early adopters have different incentives to adopt fair value option than regular adopters. I/B/E/S summary file provides quarterly analyst forecast data. We start with all firm-quarter observations from Compustat during our sample period. We require all observations to have sufficient data from I/B/E/S and Compustat to calculate all variables in our analyses. We have winsorized firm-quarter observations in the top and bottom one percent of distributions of all continuous variables in order to reduce the effects of extreme observations. As a result of these requirements, the sample used in our equation (1) consists of 81,690 firm-quarter observations.

Equation (2) focuses on firms that use FAS159 to meet or beat analyst forecasts. In order to be included in equation (2), an observation needs to (1) adopt FAS159; and (2) report unrealized gains due to change in fair value. Such requirement eliminates our sample to 929 firm-quarter observations.[6] We further require firms that either have earnings without unrealized gains below analyst forecast but report sufficient unrealized gains to beat the target (Beat the target) or firms report unrealized gains but still miss analyst forecast (Miss the target). The final sample used in equation (2) is 537 firm-quarter observations.

3.2. Descriptive Statistics

Table 1 provides descriptive statistics relating to fair value adopters and non-adopter. Among 81,690 firm-quarter observations, less than half of observations adopt FAS159. Comparing with non-adopters, adopters are larger in size, which is consistent with Guthrie's (2011) finding that fair value adopters are significantly larger. Adopters have higher book to market ratio, less shares outstanding, and more analyst following.

Table 1. Comparison between adopters and non-adopters

Non-Fair Value Adopters						
	N	**Mean**	**STD**	**Q1**	**Median**	**Q3**
SIZE	43,937	7.084**	2.026	5.697	7.045	8.366
BTM	43,937	3.306**	7.230	0.662	1.221	2.549
SHARES	43,937	160***	327	24	50	121
NUM_ESTIMATE	43,937	7.632**	6.648	2.000	6.000	11.000
ELIGIBLE	43,937	0.357	0.203	0.224	0.316	0.423
HEDGE	43,937	0.997	0.054	1.000	1.000	1.000
EVOL	43,937	0.581	0.980	0.142	0.274	0.578
Fair Value Adopters						
	N	**Mean**	**STD**	**Q1**	**Median**	**Q3**
SIZE	37,753	7.124	1.892	5.800	7.161	8.376
BTM	37,753	3.453	7.849	0.685	1.311	2.763
SHARES	37,753	128	262	24	49	111
NUM_ESTIMATE	37,753	7.743	6.424	3.000	6.000	11.000
ELIGIBLE	37,753	0.358	0.192	0.236	0.323	0.420
HEDGE	37,753	0.996	0.060	1.000	1.000	1.000
EVOL	37,753	0.576	0.947	0.142	0.271	0.588

Notes: The sample includes firm-quarter observations from 2007, December 15th to 2013. Fair value adopters are firms that report non-missing total fair value changes including earnings (tfvceq). All continuous variables are winsorized by top and bottom 1%. See Appendix for variable definitions. *** p<0.01, ** p<0.05, and * p<0.

[6] The sample we use to estimate equation (1) is 81,690 firm-quarter observations: 43,937 observations are non-fair value adopters, and 37,753 observations are fair value adopters. Among 37,753 adopters, 36,015 observations report zero change in fair value instrument, 809 observations report negative change in fair value instrument, and 929 observations report positive change in fair value measurements.

Table 2 presents descriptive statistics relating to adopters who beat the target and adopters who miss the target. As predicted, firms beating the target report significantly more Level 2 assets, Level 3 assets and Level 3 liabilities. This evidence suggests that those financial instruments provide managers more flexibility to recognize unrealized gains to beat the target. In addition, firms beating the target are generally large in size, have lower book to market ratio, have more shares outstanding, and more analysts following.

Table 2. Comparison between adopters who use fair value option to beat the target and adopters who miss the target

Beat the target						
	N	**Mean**	**STD**	**Q1**	**Median**	**Q3**
FVA1	231	0.072	0.105	0.002	0.040	0.115
FVA2	231	0.343***	0.271	0.104	0.290	0.629
FVA3	231	0.069*	0.117	0.003	0.037	0.078
FVL12	231	0.079	0.139	0.002	0.010	0.107
FVL3	231	0.037*	0.103	0.000	0.001	0.014
NFVA	231	0.581*	0.244	0.343	0.621	0.810
NFVL	231	0.667	0.239	0.510	0.763	0.850
SIZE	231	9.211**	2.087	7.792	9.149	10.647
BTM	231	9.546***	10.043	2.793	7.212	12.766
SHARES	231	452***	699	38	76	489
NUM_ESTIMATE	231	11.238***	8.478	4.000	9.000	18.000
ELIGIBLE	231	0.462	0.275	0.202	0.405	0.759
HEDGE	231	0.996	0.066	1.000	1.000	1.000
EVOL	231	0.577	0.788	0.099	0.262	0.702
Miss the target						
	N	**Mean**	**STD**	**Q1**	**Median**	**Q3**
FVA1	306	0.079	0.106	0.000	0.035	0.120
FVA2	306	0.275	0.245	0.049	0.203	0.475
FVA3	306	0.052	0.095	0.002	0.021	0.051
FVL12	306	0.069	0.145	0.000	0.004	0.032
FVL3	306	0.023	0.079	0.000	0.000	0.006
NFVA	306	0.621	0.266	0.378	0.682	0.850
NFVL	306	0.693	0.256	0.543	0.784	0.892
SIZE	306	8.800	2.118	7.379	8.930	10.146
BTM	306	13.740	16.705	2.466	7.913	18.062
SHARES	306	266	463	31	76	249
NUM_ESTIMATE	306	8.997	6.966	3.000	7.000	13.000
ELIGIBLE	306	0.495	0.281	0.243	0.447	0.794
HEDGE	306	0.997	0.057	1.000	1.000	1.000
EVOL	306	0.657	0.799	0.142	0.350	0.793

Notes: The sample includes firm-quarter observations that report positive total fair value changes including earnings (tfvceq). Beat the target group includes firms whose earnings before unrealized gains due to change in fair value (scaled by total share outstanding) is below forecasts but reports sufficient unrealized gains that allow earnings to meet or beat analyst forecasts. Miss the target group includes firms that miss the analyst forecast target. All continuous variables are winsorized by top and bottom 1%. See Appendix for variable definitions. *** p<0.01, ** p<0.05, and * p<0.1.

4. Empirical Results

Table 3 reports the results for equation (1). As expected, the coefficient on ADOPTER is insignificant, suggesting that the probability of meeting or beating the target is similar for fair value option adopter and non-adopters. Such evidence is consistent with the findings from prior studies (Chang *et al.* 2009; Guthrie *et al.* 2011). For the control variables, the coefficients of SIZE and NUM_ESTIMATE are significantly positive, suggesting that larger firms and firms with more analysts following are more likely to beat the target. The coefficient on EVOL is significantly negative, suggesting that firms with more volatile earnings are less likely to meet or beat analyst forecasts.

Table 3. The odds of beating target by accruals contingent for fair value adopters versus non-fair value adopters

	D_EM
ADOPTER	**0.037**
	[1.187]
SIZE	0.094***
	[5.800]
BTM	-0.020***
	[-4.115]
SHARES	-0.000***
	[-3.870]
NUM_ESTIMATE	0.031***
	[6.491]
ELIGIBLE	-0.153
	[-1.115]
HEDGE	-0.009
	[-0.0642]
EVOL	-0.058***
	[-2.873]
DERIVATEVE	0.094***
	[5.800]
N	81,690
Pseudo R-Square	0.0262

Notes: The dependent variable is D_EM, which equals one if the actual quarterly reported earnings is greater than median value of consensus analyst forecast, and zero otherwise. See Appendix for other variable definitions. Year-quarter dummies are included. Constant is included but not reported. T-Statistics shown in brackets are based on robust standard errors clustered by industry. *** p<0.01, ** p<0.05, and * p<0.1.

Table 4 presents the results from the estimation of equation (2). Consistent with our predictions, the coefficient of FVA3 and FVL3 are significantly positive. This finding is consistent with our prediction: firms with more Level 3 fair value measurement are more likely to manipulate the fair value measurement and recognize unrealized gains to meet or beat the target. On the other hand, the coefficients on FVA1, FVA2, and FVL12 are all insignificant, suggesting that the more transparent inputs of Level 1 and Level 2 fair value measurements deter managers' manipulation.

Table 4. The odds of beating target by accruals contingent for fair value adopters

	D_EM_FV
FVA1	-0.971
	[-0.544]
FVA2	1.419
	[1.390]
FVA3	**2.740****
	[2.321]
FVL12	-1.569
	[-1.642]
FVL3	**2.352***
	[1.682]
NFVA	0.696
	[0.674]
NFVL	0.425
	[0.570]
BTM	-0.037
	[-0.238]
SHARES	-0.036**
	[-2.401]
NUM_ESTIMATE	0.001*
	[1.789]
ELIGIBLE	0.005
	[0.218]
HEDGE	0.013
	[0.0288]
EVOL	0.802
	[0.772]
DERIVATEVE	-0.016
	[-0.0739]
N	537
Pseudo R-Square	0.0964

Notes: The dependent variable is D_EM_FV, which equals one when a firm whose earnings before unrealized gains due to change in fair value is below forecasts but reports sufficient unrealized gains that allow earnings to beat analyst forecasts, and zero when a firm whose earnings is below forecasts. See Appendix for other variable definitions. Year-quarter dummies are included. Constant is included but not reported. T-Statistics shown in brackets are based on robust standard errors clustered by industry. *** p<0.01, ** p<0.05, and * p<0.1.

Table 5 presents the results from the estimation of equation (2) by partitioning the sample into firms with stronger corporate governance and firms with weaker corporate governance. Following Song *et al.* (2010), we use five individual governance mechanisms, i.e., board independence, audit committee financial expertise, the percent of shares held by institutional investors, the auditor's office size, and no material control weakness problem under 404 of the Sarbanes-Oxley Act, to create a standardized governance score (GOVSCORE) based on the principal-component factor analysis.

Table 5. The odds of beating target by accruals contingent for fair value adopters: Corporate governance

	STRONG	WEAK
FVA1	0.785	-1.127
	[0.301]	[-0.248]
FVA2	1.288	-0.242
	[0.538]	[-0.0913]
FVA3	3.377	0.732
	[0.898]	[0.148]
FVL12	-1.999	-0.772
	[-0.958]	[-0.518]
FVL3	**7.133**	**7.551****
	[1.297]	**[2.232]**
NFVA	0.584	0.763
	[0.210]	[0.225]
NFVL	0.864	1.690
	[0.470]	[1.439]
BTM	-0.183	0.175
	[-0.852]	[1.168]
SHARES	-0.044	-0.082***
	[-1.484]	[-2.987]
NUM_ESTIMATE	0.001	0.002**
	[1.206]	[2.112]
ELIGIBLE	0.018	-0.043
	[0.461]	[-1.201]
EVOL	0.197	-0.978
	[0.164]	[-1.102]
DERIVATEVE	0.394	-0.653*
	[1.096]	[-1.827]
N	195	182
Pseudo R-Square	0.164	0.218

Notes: The dependent variable is D_EM_FV, which equals one when a firm whose earnings before unrealized gains due to change in fair value is below forecasts but reports sufficient unrealized gains that allow earnings to beat analyst forecasts, and zero when a firm whose earnings is below forecasts. STRONG firms are those firms with GOVSCORE above median value for a given year. WEAK firms are those firms with GOVSCORE below median value for a given year. See Appendix for other variable definitions. Year-quarter dummies are included. Constant is included but not reported. T-Statistics shown in brackets are based on robust standard errors clustered by industry. *** p<0.01, ** p<0.05, and * p<0.1.

We classify a firm as strong corporate governance firm if its GOVSCORE is above the median value for a given year. As expected, we find that the coefficient on FVL3 is significantly positive only for firms with weak corporate governance mechanism. On the other hand, the probability of meeting or beating target is not related to the disclosed amount of fair value instrument for firms with strong corporate governance.

5. Conclusion

This paper provides evidence about manager's incentive to disclose less value relevant Level 3 fair value measurements. We argue that managers have incentive to manipulate Level 3 fair value measurement when the firm adopts FAS159 at the same time. Since FAS159 allows firm to recognize unrealized gains (losses) into reported earnings, mangers in firms with more Level 3 financial instruments are more likely to manipulate Level 3 fair value measurement and

reported earnings by recognizing unrealized gains (losses) on change in fair value measurement.

Using a sample of quarterly reports by regular adopters of FAS159, we find that firms with more Level 3 financial assets and liabilities are more likely to recognize unrealized gains to beat consensus analyst forecasts. In addition, we find that firms with more Level 3 fair value liabilities are more likely to recognize unrealized gains to manage earnings upward to meet or beat analyst forecast target only when corporate governance is weak. On the other hand, for firms with strong corporate governance, more Level 3 fair value measurements are not related to the odds of beating targets.

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Appendix

A1. Variable definitions

Variable	Measures
Earnings Management Measurement	
D_EM_FV	Dummy variable which equals one when a firm whose earnings before unrealized gains due to change in fair value (GAIN, see definition below) is below forecasts but reports sufficient unrealized gains that allow earnings to meet or beat analyst forecasts, and zero when a firm whoseearnings is below forecasts.
D_EM	Dummy variable which equals one when a firm whose earnings is greater than or equal to analyst forecasts, and zero when a firm whoseearnings is below forecasts.
GAINS	Unrealized gains due to change in fair value per share, which is measured as total fair value changes including earnings (tfvceq), scaled by number of shares outstanding (cshoq). GAINS only capture firms that report positive total fair value changes including earnings (tfvceq) on Compustat.
Firms Measurement	
SIZE	Firm size, which is measured as log value of total assets (at).
EVOL	Earnings volatility, which is measured as the standard deviation of net income (scaled by total assets) divided by the standard deviation of cash flows from operations (scaled by total assets). EVOL is calculated at the quarterly level over rolling ten-quarters windows ending in the current fiscal year.
BTM	Book to market ratio, which is calculated as total assets (atq) dividend by market value (PRCCQ*CSHOQ) at the end of fiscal quarter.
NUM_ESTIMATE	Number of analysts for firm i year t quarter q, which is measured as number of analysts whose forecasts are included in the consensus forecast used to calculate earnings surprise.
SHARES	Number of common shares (CSHOQ) outstanding for firm i year t quarter q.
HEDGE	Dummy variable equals one for firms that report non-missing ineffective hedge (hedgeglq).
ELIGIBLE	Eligible items, which is measured the summation of receivables (rectq), short-term investments(ivstq), investment and advances(ivaeqq), account payable/creditors(apq), debt in current liabilities (dlcq) and long-term debt(dlttq), divided by the summation of total assets (atq) and total liabilities (ltq).
GOVSCORE	Standardized governance score based on the principal-component factor analysis of five governance variables. The five governance measures include (1) board independence: measured by the number of independent board members divided by the number of total board members (calculated from Risk Matrices and GMI Rating), (2) audit committee financial expertise: measured by the number of audit committee members with financial expertise divided by the number of total audit committee members (calculated from Risk Matrices and GMI Rating), (3) total percent of shares held by institutional investors (calculated from 13-F filings), (4) size of audit engagement office (calculated from Audit Analytics), and (5) no material control weaknesses problem under Sarbanes-Oxley Act (SOX) 404.

Fair Value Measurement	
FVA1	Level 1 fair value assets, which is measure as assets level1 (Quoted Prices) (aqpl1q) divided by total assets (atq).
FVA2	Level 2 fair value assets, which is measure as assets level2 (Observable) (aol2q) divided by total assets (atq).
FVA3	Level 3 fair value assets, which is measure as assets level3 (Unobservable) (aul3q) divided by total assets (atq).
FVL1	Level 1 fair value liabilities, which is measure as liabilities level1 (Quoted Prices) (lqpl1q) divided by total assets (atq).
FVL2	Level 2 fair value liabilities, which is measure as liabilities level2 (Observable) (lol2q) divided by total assets (atq).
FVL3	Level 3 fair value liabilities, which is measure as liabilities level3 (Unobservable) (lul3q) divided by total assets (atq).
NFVA	Non fair value assets, which total assets (atq) minus Level 1,2, and 3 fair value assets (aqpl1q+ aol2q+ aul3q), divided by total assets.
NFVL	Non fair value assets, which total assets (ltq) minus Level 1,2, and 3 fair value assets (lqpl1q+ lol2q+ lul3q), divided by total assets.