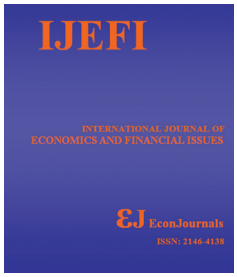

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The Effect of Earnings Recognition on Firm-Specific Information Variation

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ABSTRACT

We examine the relation between earnings recognition practices and firms' information environment. Using a sample of U.S. firms over the period 2000-2012, we investigate how earnings timeliness (*ETL*) and smoothness affect firm information environment. To measure firms' information environment, we adopt stock return synchronicity. The timeliness of earnings recognition measures the extent to which current earnings reflect value-relevant information into stock prices. As managers use earnings smoothing as a vehicle to reveal their private information, we expect earnings smoothing improves earnings informativeness and enables the market to incorporate more firm-specific information. Our study shows that as *ETL* increases, the market incorporates more firm-specific information into stock prices. In addition, as a firm's earnings become more volatile (less smooth), such a firm's stock return reflects more market-wide variation relative to firm-specific information.

Keywords: Earnings Smoothing, Timeliness, Stock Return Synchronicity, USA
JEL Classifications: G14, M41

1. INTRODUCTION

In this paper, we investigate the association between earnings recognition practices and firms' information environment. Specifically, we study how earnings timeliness (*ETL*) influences the degree to which the stock price of an individual firm incorporates firm-specific information. We also test the effect of earnings smoothness on firm-specific information reflection into stock prices.

The stock returns of an individual firm reflect new market-level, industry-level, and firm-specific information. Using a typical asset pricing regression model, Roll (1988) documents the weak association between an individual firm's stock returns and contemporaneous market and industry movements. Based on these results, he suggests that the extent of incorporation of firm-specific information into stock prices is associated with the relative amounts of contemporaneous market-level and industry-level information. Since his seminal study, many researchers have used stock return synchronicity as an inverse measure of the quality of a firm's information environment. Stock return synchronicity assesses the ability of market-wide and industry-wide information to account for firm-level stock returns. When the price incorporates relatively more public news, R^2 from a market model is higher (i.e., higher stock return synchronicity). By construction, the residual component of returns represents firm-specific information (Piotroski and Roulstone, 2004).

This stock return synchronicity has been validated empirically in several studies. In their cross-county study, Morck et al. (2000) first adopt stock return synchronicity to capture the degree of firm-specific information incorporated in stock prices and find a negative relation between protection of investor rights and stock return synchronicity. Piotroski and Roulstone (2004) find that the presence of informed market participants is inversely related with stock return synchronicity, which is consistent with insider and institutional trading accelerating the incorporation of firm-specific information into prices. Hutton et al. (2009) investigate the relation between the transparency of financial statements and stock return synchronicity. They show that financial statement opacity is associated with less revelation of firm-specific information. Campbell and Hentschel (1992) document that as the information environment improves, stock return synchronicity decreases. These results show that the greater the amount of firm-specific

information for firm-level stock return variations, the lower a firm's stock return synchronicity becomes.

Financial statements summarize a firm's operational performance and communicate extensive information that explains the sources of firm-specific information that affect changes in equity value. Because stock prices lead earnings in capturing economic events, a higher level of correlation between earnings and stock return indicates that accounting earnings contain more of value-relevant information. As a summary measure of firms' performance, *ETL* recognition examines the timeliness with which current earnings reflect value-relevant information into contemporaneous stock prices. Since Ball and Brown (1968) shows that some value-relevant information in earnings is gradually and delayed before it is recognized into stock prices, a large body of literature has developed *ETL* measures and examined factors that affect *ETL* and their implications. Early studies investigate whether accounting earning and (abnormal) stock returns are associated and whether they incorporate the same underlying events (Hagerman et al., 1984; Easton and Harris, 1991; Warfield and Wild, 1992; Collins et al., 1994). Beaver et al. (1987) use reverse regression of the contemporaneous earnings–return relation and show that reverse regression offers a more powerful and efficient test of the earnings-return association. Basu (1997) devises several *ETL* measures and find a more sensitive association between stock price movements and earnings in periods of bad news. Under different legal, institutional, and financial reporting regimes, Ball et al. (2000) hypothesize and test the influence of institutional variables on incorporation of economic income in accounting income. Their results show that accounting earnings in common-law countries (market oriented) are significantly more timely reflected into stock prices than in code-law countries (governmental regulation oriented). Bushman et al. (2004) investigate the relation between *ETL* and corporate governance structures and document that governance structures are inversely related with *ETL*, supporting the firm-specific timeliness as a governance choice.

In their survey of 401 financial executives, Graham et al. (2005) find that executives express a strong preference for smooth earnings. In investigation of the key underling factors, they find that executives believe that investors perceive firms with less volatile earnings to provide higher predictability of earnings. On the other hand, some maintain that earnings smoothing distorts information as a means of earnings management (e.g., Leuz et al., 2003; Bhattacharya et al., 2003; Barth et al., 2006). The discretionary applications of accounting rules and choices by opportunistic management have been found to induce earnings that are smoother or more volatile than cash flows (e.g., Dechow, 1994; Dechow and Dichev, 2002; Ball and Shivakumar, 2006). However, a large number of studies report that managers use earnings smoothing as a vehicle to reveal their private information. Theoretical and empirical studies show that earnings smoothing is informative (e.g., Arya et al., 2003; Demski, 1998). Hunt et al., (2000) show that earnings smoothing strengthens the contemporaneous price-earnings ratio and find evidence of the informativeness of earnings smoothing. Dichev and Tang (2009) investigate the link between earnings volatility and earnings predictability and show that earnings with low volatility have higher persistence and predictability. Tucker and Zarowin (2006) examine whether earnings smoothing improves earnings informativeness and find that smoother income impounds more information about future earnings.

In this study, we test how earnings recognition practices, timeliness and smoothness in income recognition are associated with firms' information environment. We posit that as a firm's earnings become more deviated from cash flows (less smooth) or earnings less-timely reflect value-relevant information, less firm-specific information is available to the market. Therefore, we expect that such a firm's stock return incorporates more market-wide variation relative to firm-specific information. As a result, its stock price is more synchronous with the market and industry.

We choose U.S. firms over the period 2000-2012 as our sample. Following Bushman et al. (2004), we construct a composite *ETL* measure. The timeliness of the earnings recognition measures the extent to which current earnings reflect value-relevant information into stock prices. As an earnings smoothness measure, we employ a widely used empirical proxy, the ratio of earnings variability to cash flow variability. As managers use earnings smoothing as a vehicle to reveal their private information, earnings smoothing improves earnings informativeness. Our study shows that a higher level of *ETL* enables the market to incorporate more firm-specific information into stock prices. In addition, as a firm's earnings become more volatile (less smooth), such a firm's stock returns incorporate more market-wide variation relative to firm-specific information.

The remainder of the paper is organized as follows. Section 2 describes the sample and methodology, and Section 3 presents the empirical results. Section 4 concludes.

2. SAMPLE AND VARIABLE MEASUREMENT

2.1. Sample

To construct our sample, we start with all U.S. firms in the annual COMPUSTAT database covering the period 1991 through 2012. We obtain firm-related information from both the quarterly and annual COMPUSTAT database. We retain firms' return data from the Center for Research in Security Prices (CRSP) database. To estimate stock return synchronicity, we require all sample firms to be available in the CRSP database and select only firm-year with at least 45 weekly return data with its primary Standard Industrial Classification (SIC) code available. In addition, we also require at least 10 firms within each two-digit SIC industry definition. We require annual earnings and stock returns data to estimate our *ETL* measure over rolling 10 years windows (i.e., for year 2000 starting in 1991 and ending in 2000). To measure earnings smoothness, we select only firms with non-missing quarterly observations for earnings and cash flows during each rolling 5-year period (from year t-4 to year t). To remain in our sample, we require all firm-years with sufficient financial data for control variables. To mitigate the effects of extreme observations, we winsorize our sample of observations at the 1st and 99th percentiles. As described in Table 1, the final sample consists of 10,587 firm-years from 2000 to 2012.

Table 1: Distribution of number of firms

Year	No. of firms (%)
2000	517 (4.89)
2001	592 (5.59)
2002	650 (6.14)
2003	717 (6.77)
2004	793 (7.49)
2005	845 (7.98)
2006	884 (8.35)
2007	918 (8.67)
2008	927 (8.76)
2009	937 (8.85)
2010	933 (8.81)
2011	942 (8.90)
2012	932 (8.80)
Total	10,587 (100)

2.2. Variable Measurement

2.2.1. Stock return synchronicity

Following Durnev et al. (2003) and Piotroski and Roulstone (2004), we calculate the firm-specific measures of stock return synchronicity for each-firm as

$$R_{i,t} = \alpha + \beta_1 R_{M,t-1} + \beta_2 R_{M,t} + \beta_3 R_{I,t-i} + \beta_4 R_{I,t} + \in_{i,t} \quad (1)$$

where $R_{i,t(t-1)}$ is firm *i*'s returns in week *t (t-1)*, $R_{M,t\,(t-1)}$ is the CRSP value-weighted market returns in week *t (t-1)*, and $R_{I,t\,(t-1)}$ is the two-digit SIC industry *i*'s return in week *t (t-1)*. For each fiscal year, the stock return synchronicity is measured for each firm-year with at least 45 weekly return observations. We also require at least 10 firms within each two-digit SIC industry definition. R^2 from eq. (1) measures the extent to which firm-specific return volatility commoves with the market and its primary industry. Firm-specific volatility or deficiency of market comovement is measured by $(1-R^2)$.

Then, following extant studies, we estimate stock return synchronicity (*Synch*) as

$$Synch_{i,t} = \ln\left(\frac{R^2}{1-R^2}\right) \quad (2)$$

Piotroski and Roulstone (2004) characterize *Synch* as the degree to which market and industry information explains firm-level stock return variation. So, *Synch* represents the portion of individual firms' stock returns that can be explained by market and industry, while the residual (unexplained) portion indicates firm-specific information confined in firms' returns. Therefore, a high value of *Synch* indicates a higher level of market- and industry-level information (i.e., a lower level of firm-specific return variation). Following common practice, we log transform *Synch* to use an unbounded continuous variable with a more normal distribution.

2.2.2. Earnings timeliness

Earnings timeliness measures the extent to which current earnings reflect value-relevant information into stock prices. Following Bushman et al. (2004), we capture the three firm-specific elements from two regressions to compose the *ETL* measure. The first two components of *ETL* are based on the following reverse regression of annual earning on contemporaneous stock returns, using rolling 10-year periods:

$$EARN_{i,t} = \alpha + \beta_1 NEG_{i,t} + \beta_2 RET_{i,t} + \beta_3 NEG_{i,t} * RET_{i,t} + \zeta_{i,t} \quad (3)$$

where $EARN_{i,t}$ is firm *i*'s net income (earnings before extraordinary items and discontinued operations) in year *t*, scaled by market value at the end of year *t-1*. $RET_{i,t}$ is firm i's 15 months stock return ending 3 months after the end of fiscal year *t,* and $NEG_{i,t}$ is an indicator variable (1 if $RET_{i,t}$ <0, 0 = otherwise).

The first element of *ETL* (*RevR2*) is R^2 from eq. (3). A higher R^2 indicates that earnings incorporate more of the value-relevant events that are also being reflected in stock returns in the same period. Therefore, we use R^2 from eq. (3) to measure the explanatory power of earnings for the variation in returns. The second element (*RevSlope*) is β_2, the coefficient on $RET_{i,t}$. This coefficient measures how rapidly a firm's earnings incorporates good news. The third element (*ErcR2*) is R^2 of the following equation, also using rolling 10-year periods.

$$RET_{i,t} = \alpha + \beta_1 EARN_{i,t} + \beta_2 \Delta EARN_{i,t} + \xi_{i,t}, \quad (4)$$

where $\Delta EARN_{i,t}$ is firm *i*'s net income (earnings before extraordinary items and discontinued operations) change in year *t* from year *t-1*, scaled by market value at the end of year *t-1* and other variables are as previously defined. R^2 of eq. (4) captures the explained variability of stock returns by accounting earnings, the speed with which the level and change in annual earnings are impounded into stock prices.

Following Bushman et al. (2004), we construct the *ETL* measure as follows. First, we calculate the percentile rank of each of the three timeliness components. Then, we calculate the average value of all 3% rank values for each firm. *ETL,* a composite measure, consists of the percentile rank values of two R^2 and one coefficient from two regressions. The larger values of *ETL* imply more timely earnings. As timelier value-relevant accounting earnings are recognized, stock returns incorporate more firm-specific information relative to market- and industry-level information. Therefore, we expect that *ETL* is negatively related with *Synch*.

2.2.3. Earnings smoothness

We employ a widely used empirical measure, the ratio of earnings variability to cash flow variability as a proxy for earnings smoothness (*Smooth*) (e.g. Leuz et al., 2003; Francis et al., 2004; McInnis, 2010). We measure *Smooth* as the standard deviation of net income (earnings before extraordinary items and discontinued operations) divided by the standard deviation of cash flow (net cash flow from operating activities), both scaled by total assets. *Smooth* is a firm-quarter earnings smoothness measure and is calculated over rolling 20-quarter (5 years) periods ending in the current fiscal year. If a firm has smoothing earnings, the variability of earnings should be lower relative to cash flows. Therefore, a larger *Smooth* means less smooth and more volatile earnings.

$$Smooth = \frac{\delta(\text{Earnings})}{\delta(\text{Cash flows})} \quad (5)$$

where δ indicates the standard deviation. As managers use earnings smoothing as a vehicle to reveal their private information, earnings smoothing improves earnings informativeness Therefore, we expect *Smooth* (an inverse measure of earnings smoothness) to be positively associated with *Synch*.

Table 2: Descriptive statistics and univariate results of synch for each ETL/SM group

Panel A: Descriptive statistics of firm characteristics (n=10,587)					
Variables	**Q1**	**Mean**	**Median**	**Q3**	**Standard deviation**
Synch	–1.4046	–0.7076	–0.6083	0.0660	1.0989
RevR2	0.2477	0.4665	0.4644	0.6733	0.2557
RevSlope	0.0009	0.0436	0.0393	0.0870	0.1224
ErcR2	0.2231	0.4373	0.4375	0.6302	0.2484
ETL	0.3333	0.5050	0.5067	0.6733	0.2204
SM	0.2982	0.6556	0.4732	0.7895	0.5834
SIZE	5.6461	6.9797	6.9883	8.3133	2.0332
LEV	0.3121	0.4738	0.4787	0.6203	0.2102
MB	1.4000	2.8890	2.1362	3.4864	2.7735
ROE	0.0555	0.1040	0.1138	0.1785	0.2100
VARIND	0.0004	0.0012	0.0007	0.0013	0.0013

Panel B: Level of synch for each *ETL/SM* group		
	***ETL* quintile**	***SM* quintile**
Low	–0.5044	–0.6708
2	–0.5228	–0.6015
3	–0.5239	–0.5899
4	–0.6660	–0.5881
High	–0.8316	–0.5801
Difference (high-low)	–0.3272	0.0907
P value	<0.0001	<0.0001

Variable definitions

Synch: Natural logarithm of $(\frac{1-R^2}{R^2})$ from $R_{i,t} = \alpha + \beta_1 * R_{M,t-1} + \beta_2 * R_{M,t} + \beta_3 * R_{I,t-1} + \beta_4 * R_{I,t} + *\epsilon_{i,t}$

Where $R_{i,t\,(t-1)}$ is firm *i*'s returns in week *t (t-1)*, $R_{M,t\,(t-1)}$ is the CRSP value-weighted market returns in week *t (t-1)*, and

$R_{I,t\,(t-1)}$ is two-digit SIC industry *I*'s return in week *t (t-1)*. For each fiscal year, stock return synchronicity is measured for each firm-year with at least 45 weekly return observations.

ETL: Average of the percentile rank values of *RevR2, RevSlope*, and *ErcR2*.

RevR2: R^2 from the following regression, using rolling 10-year periods:

$EARN_{i,t} = \alpha + \beta_1 NEG_{i,t} + \beta_2 RET_{i,t} + \beta_3 NEG_{i,t} * RET_{i,t} + \zeta_{i,t}$

where $EARN_{i,t}$ is firm *i*'s net income (earnings before extraordinary items and discontinued operations) in year *t*, scaled by market value at the end of year *t-1*. $RET_{i,t}$ is firm *i*'s 15 months stock return ending 3 months after the end of fiscal year *t*, and $NEG_{i,t}$ is an indicator variable (1 if $RET_{i,t}$<0, 0=otherwise).

RevSlope: β_2, the coefficient on $RET_{i,t}$ from the previous equation.

ErcR2: R^2 from the following regression, using rolling 10-year periods:

$RET_{i,t} = \alpha + \beta_1 EARN_{i,t} + \beta_2 \Delta EARN_{i,t} + \xi_{i,t}$

where $\Delta EARN_{i,t}$ is firm *i*'s net income (earnings before extraordinary items and discontinued operations) change in year *t* from year *t-1*, scaled by market value at the end of year *t-1* and other variables are as previously defined.

$SM: \frac{\delta(\text{Earnings})}{\delta(\text{Cash flows})}$, where δ indicates standard deviation.

Size: Natural logarithm of price per share multiplied by the number of shares outstanding at year *t-1*.

LEV: Book value of liabilities scaled by total assets at year *t-1*.

MB: Market value of equity divided by the book value of equity at year *t-1*.

ROE: Income before extraordinary items divided by the book value of equity at year *t*.

VARIND: Variance of two-digit SIC industry weekly returns at year *t*

2.2.4. Control variables

Following previous research, we include the following additional variables to control for possible biases. To proxy for any omitted variables associated with firm *SIZE*, we include *SIZE*, which is calculated as the natural logarithm of price per share multiplied by the number of shares outstanding at year *t-1*. For leverage, LEV is the book value of liabilities scaled by total assets at year *t-1*. To control for growth, we include MB, which is the ratio of the market value of equity to the book value of equity at year *t-1*. As a profitability measure, we use *ROE* as income before extraordinary items divided by the book value of equity. To control for industry variance, we measure *VARIND* as the variance of two-digit SIC industry weekly returns.

3. EMPIRICAL RESULTS

3.1. Descriptive Statistics

Table 2, Panel A provides the descriptive statistics of the variables of interest. Table 2, Panel B reports simple univariate tests. The mean and the median values of the firm return comovement measure (*Synch*) are −0.7076 and −0.6083, respectively. While the bottom quartile *Synch* is −1.4046, the top quartile is 0.0660. *Synch* shows considerable variation. Our sample firms also show considerable variation in a comprehensive measure of *ETL*. The mean (median) of *ETL* is 0.5050 (0.5067). The mean value of *SM*, earnings smoothness measure, is 0.6556, while the median value is 0.4732. Our sample firms also show considerable variation in other firm characteristic variables. In Table 2, Panel B, we divide our sample into quintiles using *ETL* and *SM* values and compare the median *Synch* to investigate the simple relation with *Synch*. Consistent with our expectation, the median *Synch* inclines monotonically across *SM* quintiles, while the median *Synch* of *ETL* quintiles declines monotonically. The Wilcoxon Rank Sum tests of *Synch* for both *ETL* and *SM* verify these results (both, P < 0.0001).

Table 3 reports the spearman rank correlation structure. All three components of the *ETL* measure are positively correlated among them and with *ETL* (all, P < 0.0001). Consistent with our expectation, there is a significant positive correlation between *Synch* and *SM* (0.0564, P < 0.0001) and a significant negative correlation between *Synch* and *ETL* (−0.1020, P < 0.0001). The correlation between *Synch* and *SM* is significantly negative (−0.1204, P < 0.0001). These results show that as firms' earnings become more volatile (less informative) and less-timely reflect value-relevant information, individual firms' stock returns and market-wide and industry-wide movements are more positively associated. The correlations among the other variables support the results reported in the extant literature.

3.2. Regression Analysis

To investigate the relation between earnings recognition practices and firms' information environment, we estimate the following ordinary least squares (OLS) regressions. For heteroscedasticity and correlation among the observations, the standard errors are clustered by both firm and time following Gow et al. (2010) in order to report the P values.

$$Synch_{i,t} = \alpha + \beta_1 ETL\ (or\ SM)_{i,t} + \beta_2 SIZE_{i,t-1} + \beta_3 LEV_{i,t-1} + \beta_4 MB_{i,t-1} + \beta_5 ROE_{i,t} + \beta_6 VARIND_{i,t} + \varsigma_{i,t} \quad (6)$$

Table 3: Correlation of firm characteristics (n=10,587)

Variable	*Synch*	*RevR2*	*RevSlope*	*ErcR2*	*ETL*	*SM*	*SIZE*	*LEV*	*MB*	*ROE*
RevR2	–0.0810***									
RevSlope	–0.0873***	0.2488***								
ErcR2	–0.1193***	0.6240***	0.2602***							
ETL	–0.1020***	0.8113***	0.6511***	0.8153***						
SM	0.0564***	–0.1047***	–0.0584***	–0.1260***	–0.1204***					
SIZE	0.5500***	–0.0836***	–0.1440***	–0.1191***	–0.1406***	–0.0004				
LEV	0.1434***	–0.0495***	0.0455***	–0.0798***	–0.0364***	–0.0792***	0.2401***			
MB	0.1349***	–0.0033	–0.1214***	0.0274***	–0.0466***	0.0060	0.4390***	–0.0098		
ROE	0.1359***	0.0447***	0.0287***	0.0825***	0.0688***	-0.2058***	0.3616***	0.1459***	0.5551***	
VARIND	0.2386***	–0.0033	0.0146	–0.0085	–0.0076	0.0693***	0.0088	–0.0691***	–0.0269***	–0.0575***

***indicate statistical significance at the 10, 5, and 1% level, respectively, All variables are defined in Table 2

Synch, our measure of stock return synchronicity, is the dependent variable in our regression analyses. The high values of *Synch* indicate a lower level of firm-specific information (i.e., more market-level and industry-level information). Our main independent variables are *ETL* and *SM*. The *ETL* measure, *ETL*, captures the degree to which current earnings incorporate value-relevant information into stock prices. As earnings timely reveal firm-specific value-relevant information, we expect that more firm-specific information is reflected into stock prices. Therefore, we expect a negative coefficient on *ETL*. The other main independent variable, SM, represents earnings of volatility, the extent to which earnings deviate from cash flows. A high level of *SM* implies greater divergence between earnings and operating cash flows and less earnings informativeness. Less informative earnings make it difficult for the market to reliably interpret and therefore, incorporate firm-specific accounting information into stock prices. As a result, we expect that *SM* is positively associated with *Synch*.

Table 4 reports the results of our regression analyses. In Table 4, Panel A, we first include *ETL* to investigate the relation between *ETL* and stock return synchronicity. As shown in Model 1, the coefficient of *ETL* is negative and significant. The *ETL* coefficient is −0.1498 and significant at the 5% level, consistent with our univariate results showing that a higher level of *ETL* enables the market to incorporate more firm-specific information into stock prices. Then, we analyze the relation between *SM* and *Synch*. We run a separate regression for *SM* in Model 2 and find a significantly positive *SM* coefficients (0.0901, at the 1% level). As a firm's earnings become more volatile, firm-related information is less informative to the market. As a result, such a firm's stock return incorporates more market-wide variation relative to firm-specific information. The results for the control variables are similar to those of previous research.

In Table 4, Panel B, we explore out main results with further changes in methodology. As robust tests, we rerun our multivariate analysis with a variety of modified specifications. As a first modification, we run a simple OLS regression without any correction. Second, we estimate the autocorrelation-adjusted Fama and MacBeth coefficients. Then, we use the percentile rank values of the dependent and main independent variables. Because *ETL* is the average of the percentile rank values, we exclude the use of the percentile rank values of *ETL*. The results are similar to those in Table 3, Panel A. Only the coefficient on *SM* of Fama and MacBeth regressions is marginally significantly. These results corroborate our findings from Table 4, Panel A.

Table 4: Regression analysis (n=10,587)

Panel A: Regression analysis (dependent variable=*Synch*)

Variable	Model 1		Model 2	
	Coefficient	t-stat	Coefficient	t-stat
Intercept	–2.8997	–23.45***	–3.0535	–30.65***
ETL	–0.1498	–2.33**	-	
SM	-		0.0901	2.92***
SIZE	0.3155	22.34***	0.3171	22.87***
LEV	0.0695	0.72	0.0850	0.89
MB	–0.0528	–7.84***	–0.0539	–7.78***
ROE	0.0616	0.56	0.1036	1.03
VARIND	155.0530	4.22***	154.4175	4.25***
Adj.R^2	0.3578		0.3591	

Panel B: Model variation

Variation type	Coefficient on *ETL*	Coefficient on *SM*
1. OLS	–0.1498***	0.0901***
2. Fama and MacBeth regressions	–0.1410***	0.0246
3. Using the percentile rank of Synch	–0.0568***	0.0098**
4. Using the percentile rank of *SM*		0.0878***
5. Using the percentile rank of *SM* and *Synch*		0.0279***

*,** and ***Indicate statistical significance at the 10, 5, and 1% level, respectively, All variables are defined in Table 2

4. CONCLUSIONS

We hypothesize and test the association between earnings recognition practices and firms' information environment. Using a sample of U.S. firms over the period 2000-2012, we investigate how *ETL* and smoothness affect firms' information environment. To measure firms' information environment, we adopt stock return synchronicity, which assesses the ability of market-wide information to account for firm-level stock returns. We define firm-specific information as the portion of individual firms' stock returns that cannot be explained by the market and industry. The timeliness of earnings recognition measures the extent to which current earnings reflect value-relevant information into stock prices. As timelier value-relevant accounting earnings are recognized, stock returns incorporate more firm-specific information relative to market-level and industry-level information. As an earnings

smoothness measure, we employ the ratio of earnings variability to cash flow variability. As managers use earnings smoothing as a vehicle to reveal their private information, we expect earnings smoothing to improve earnings informativeness and induce the reflection of more firm-specific information.

Our study shows that a higher level of *ETL* enables the market to incorporate more firm-specific information into stock prices. As a firm's earnings becomes more volatile, such a firm's stock return incorporates more market-wide and industry-wide variation relative to firm-specific information. As a result, such a firm' stock return is more synchronous with market-wide information.

REFERENCES

Arya, A., Glover, J.C., Sunder, S. (2003), Are unmanaged earnings always better for shareholders? Accounting Horizons, 17, 111-116.

Ball, R., Brown, P. (1968), An empirical evaluation of accounting income numbers. Journal of Accounting Research, 6, 159-178.

Ball, R., Kothari, S.P., Robin, A. (2000), The effect of international institutional factors on properties of accounting earnings. Journal of Accounting and Economics, 29(1), 1-51.

Ball, R., Shivakumar, L. (2006), The role of accruals in asymmetrically timely gain and loss recognition. Journal of Accounting Research, 44(2), 207-242.

Barth, M., Landsman, W., Lang, M. (2006), International Accounting Standards and Accounting Quality. Working Paper University of North Carolina-Chapel Hill.

Bhattacharya, U., Daouk, H., Welker, M. (2003), The world price of earnings opacity. The Accounting Review, 78, 641-678.

Basu, S. (1997), The conservatism principle and the asymmetric timeliness of earnings. Journal of Accounting and Economics, 24(1), 3-37.

Beaver, W.H., Lambert, R.A., Ryan, S.G. (1987), The information content of security prices: A second look. Journal of Accounting and Economics, 9(2), 139-157.

Bushman, R., Chen, Q., Engel, E., Smith, A. (2004), Financial accounting information, organizational complexity and corporate governance systems. Journal of Accounting and Economics, 37(2), 167-201.

Campbell, J.Y., Hentschel, L. (1992), No news is good news: An asymmetric model of changing volatility in stock returns. Journal of Financial Economics, 31, 281-318.

Collins, D.W., Kothari, S.P., Shanken, J., Sloan, R.G. (1994), Lack of timeliness and noise as explanations for the low contemporaneous return-earnings association. Journal of Accounting and Economics, 18(3), 289-324.

Dechow, P. (1994), Accounting earnings and cash flows as measures of firm performance: The role of accounting accruals. Journal of Accounting and Economics, 18, 3-42.

Dechow, P., Dichev, I. (2002), The quality of accruals and earnings: The role of accrual estimation error. The Accounting Review, 77(Supplement), 35-59.

Demski, J. (1998), Performance measure manipulation. Contemporary Accounting Research, 15, 261-285.

Dichev, A., Tang, V. (2009), Earnings volatility and earnings predictability. Journal of Accounting and Economics, 47, 60-181.

Durnev, A., Morck, R., Yeung, B., Zarowin, P. (2003), Does greater firm-specific return variation mean more or less informed stock pricing? Journal of Accounting Research, 41(5), 797-836.

Easton, P.D., Harris, T.S. (1991), Earnings as an explanatory variable for returns", Journal of Accounting Research, 12, 19-36.

Francis, J., LaFond, R., Olsson, P., Schipper, K. (2004), Costs of equity and earnings attributes. The Accounting Review, 79, 967-1010.

Gow, I., Ormazabal, G., Taylor, D. (2010), Correcting for cross-sectional and time-series dependence in accounting research. The Accounting Review, 85, 483-512.

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

Hagerman, R.L., Zmijewski, M.E., Shah, P. (1984), The association between the magnitude of quarterly earnings forecast errors and risk-adjusted stock returns. Journal of Accounting Research, 22, 526-540.

Hunt, A., Moyer, S., Shevlin, T. (2000), Earnings volatility, earnings management, and equity value. Unpublished Working Paper, University of Washington.

Hutton, A.P., Marcus, A.J., Tehranian, H. (2009), Opaque financial reports, R^2, and crash risk. Journal of Financial Economics, 94, 67-86.

Leuz, C., Nanda, D., Wysocki, P. (2003), Earnings management and investor protection: An international comparison. Journal of Financial Economics, 69, 505-527.

McInnis, J. (2010), Earnings smoothness, average returns, and implied cost of equity capital. The Accounting Review, 85(1), 315-341.

Morck, R., Yeung, B., Yu, W. (2000), The information content of stock markets: Why do emerging markets have synchronous stock price movements? Journal of Financial Economics, 58, 215-260.

Piotroski, J.D., Roulstone, D.T. (2004), The influence of analysts, institutional investors and insiders on the incorporation of market, industry and firm-specific information into stock prices. The Accounting Review, 79, 1119-1151.

Roll, R. (1988), R^2. Journal of Finance, 43, 541-566.

Tucker, J.W., Zarowin, P.A. (2006), Does income smoothing improve earnings informativeness? The Accounting Review, 81(1), 251-270.

Warfield, T.D., Wild, J.J. (1992), Accounting recognition and the relevance of earnings as an explanatory variable for returns. The Accounting Review, 67, 821-842.