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# DIFFERENTIAL CHANGES IN THE VALUE-RELEVANCE OF EARNINGS AND BOOK VALUES OVER TIME: FINANCIAL VERSUS OTHER INDUSTRIES

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# DIFFERENTIAL CHANGES IN THE VALUE-RELEVANCE OF EARNINGS AND BOOK VALUES OVER TIME: FINANCIAL VERSUS OTHER INDUSTRIES

**Abstract**: We investigate the change in the value-relevance of earnings and book value information in the financial industry compared to other industries from 1970 to 2005. Prior literature provides mixed evidence as to whether value-relevance reduces over time. Using Ohlson's model, we find increasing value-relevance for earnings and book value for the financial and other industries. However, the increasing trend is less evident for financial firms. More importantly, we document that the slower growth trend for the financial industry improves compared to other industries after firms adopt SFAS 133 (as amended by SFAS 137 and 138) in 2001. Financial institutions typically hold more derivative instruments and hedging portfolios than other industries. Our results are thus consistent with the view that SFAS 133 may help financial institutions improve the value-relevance of accounting information. Our results have implication for policy makers when they evaluate the benefit of SFAS 133.

*JEL classification:* G10: G21; G38; M41; M410

*Keywords:* Value-relevance; accounting information; comparative change; SFAS 133; financial industry; non-financial industry.

DIFFERENTIAL CHANGES IN THE VALUE-RELEVANCE OF EARNINGS AND BOOK VALUES OVER TIME: FINANCIAL VERSUS OTHER INDUSTRIES

## 1. Introduction

A large body of research examines the change in the value-relevance of accounting information over time. For example, Collins et al. (1997) estimate the regression of stock price on earnings per share and book value per share. They find that book value-relevance and combined value-relevance has increased from 1953 to 1993, but bottom line earnings relevance has declined during the same period. Ely and Waymire (1999), Francis and Schipper (1999), and Lev and Zarowin (1999) examine the return-earnings relation based on data prior to 1996. They generally document a decline of earnings relevance over time. Landsman and Maydew (2002), using abnormal trading volume and return volatility around quarterly earnings announcement, suggest that earnings information becomes more informative from 1972 to 1998. Overall, prior research generates mixed evidence as to whether the value relevance of accounting information has declined or improved over time.

In our paper, we first re-examine the trend in the value-relevance of accounting information in the extended time frame from 1970 to 2005. We operationalize value-relevance using Ohlson's (1995) model and express the stock price as a linear function of earnings and book value. We measure earnings relevance as the coefficient on earnings, book value-relevance as the coefficient on book value, and combined value-relevance as the adjusted $R^2$. By extending the sample to the 2000's, we are able to evaluate the effect of new fair value accounting standards issued by the Financial Accounting Standards Boards (FASB), especially Statement of Financial Accounting Standards (SFAS) No.

133, *Accounting for Derivative Instruments and Hedging Activities,* (FASB 1998), as amended by SFAS 137 (FASB 1999) and 138 (FASB 2000), henceforth SFAS 133, on the changing value-relevance of accounting information.[1]

Moreover, to the best of our knowledge, extant research does not examine the comparative change of value-relevance in the financial industry versus other industries. We argue that financial institutions hold much more financial instruments that do not have intrinsic value, than other industries and current accounting reporting system cannot adequately account for those financial instruments in the financial statements in a timely manner. As a result, the value-relevance of accounting information and the trend over time in the financial industry is expected to differ from other industries, especially after the implementation of SFAS 133.

To address the increasing use of derivatives and the complexity of those derivatives, FASB issued new fair value accounting standards regarding financial instruments, which include SFAS 107 (FASB 1991), 115 (FASB 1993) and 119 (FASB 1994). The most comprehensive to-date is SFAS 133 effective after June15, 2000. SFAS 133, for the first time, requires all companies to report the fair value of derivatives on the balance sheets and recognize fair value or cash flow hedge either in current earnings or other comprehensive income. FASB explicitly states that the purpose of SFAS 133 is to provide more relevant and transparent information to investors to make informed decision about a firm's financing and investing activities. Ahmed et al. (2006) find that recognized derivatives under SFAS 133 are more value relevant than previously disclosed derivatives for bank holding companies. We expect that the value-relevance of

[1] We acknowledge that the Sarbanes-Oxley Act of 2002 may also affect the usefulness of accounting information in the 2000's. In addition, SFAS 142 may also change the trend of value-relevance up to the 2000's. All of these make it worthwhile to reexamine the trend of value-relevance up until 2005.

accounting information for the financial industry improves after firms adopt SFAS 133, compared to other industries.

Using 34,252 firm-year observations in the financial industry and 160,206 firm-year observations in other industries, we find that earnings, book value and combined value-relevance have increased from 1970 to 2005. More importantly, the increasing trend is weaker for the financial industry than for other industries. We also document that the slower growth in value-relevance trend for the financial industry improves after the adoption of SFAS 133.

Our results contribute to the existing literature in the following ways. First, the financial industry and other industries carry different levels of financial assets and liabilities and may thus exhibit different trend of value-relevance over time. However, prior literature on change in value-relevance does not separate the financial industry from other industries. Collins et al. (1997) argue that value-relevance trend can be different across industries and future research can address this issue. Our paper provides initial evidence of differential trend of value-relevance change in the financial industry versus other industries over time. This helps investors understand the impact of financial instruments on the changing value-relevance of accounting information over time.

Second, our paper is the first to examine the effect of specific accounting standards on the changing value-relevance over time. Ely and Waymire (1999) find a significant increase in combined value-relevance of earnings and book value post-FASB period compared to pre-FASB period. They attribute their finding to overall accounting reorganizations. Ely and Waymire (1999) further suggest that future research on the effect of specific standards can better understand value-relevance of accounting data. Our

paper complements Ely and Waymire (1999) in that we investigate the impact of one specific, but very controversial, accounting standard, SFAS 133, on the changing value-relevance in the financial industry versus other industries over time.

Third, our paper extends prior value-relevance literature to most recent years, especially to the 2000s. FASB has started to move from historical cost-based accounting to fair value-based accounting in the 2000s. It is interesting to see whether new fair value accounting standards change the comparative trend of value-relevance of accounting information over time. In addition, using more recent data enables us to evaluate the effect of SFAS 133, which is effective from 2001 fiscal year, on the comparative change in value-relevance between the financial and other industries.

Lastly, our paper has implication for policy makers. We find that the coefficients on earnings and book value and adjusted R-square are increasing more with time in the financial industry after the adoption of SFAS 133 than before the adoption. SFAS 133 has received significant criticism for more volatile earnings and difficult valuation since its enactment. We argue that despite the criticism, SFAS 133 significantly improves the value-relevance trend of accounting information in the financial industry.

The rest of the paper is organized as follows. Section 2 develops the hypotheses. Section 3 designs the research. Section 4 presents the empirical analysis. The last section concludes the paper and presents possible future research.

## 2. Hypotheses Development

Research on value-relevance of accounting information has received a lot of attention in the accounting literature (e.g., Barth et al., 2001; Holthausen and Watts,

2001). One stream of literature focuses on whether the value relevance of accounting information has declined/increased over time. Prior research provides conflicting views. Ely and Waymire (1999), Francis and Schipper (1999), and Lev and Zarowin (1999) find that earnings has lost its value-relevance over time, while Landsman and Maydew (2002) document increasing value-relevance for the accounting information. We re-examine this issue by extending the sample to the 2000's. Some fair value accounting standards, such as, SFAS 133 and SFAS 142, take effect during the 2000's. Both standards are intended to improve the relevance of accounting information to financial statement users. Concurrently, the Sarbanes-Oxley Act of 2002 may also enhance the usefulness of accounting information. It is interesting to see the trend of value-relevance over time after incorporating data from recent years. Our first hypothesis, stated in the null form, is,

> ***Hypothesis 1:*** *Value-relevance of accounting information has not changed over time.*

In our paper, we also focus on the comparative changes in the value-relevance of earnings and book values in the financial versus other industries. Barth et al. (1999) find that regulated industries, such as financial institutions and utilities, have a lower earnings response coefficient than other industries. However, they assume that the impact of regulation on earnings response coefficient is constant over time. Ryan and Zarowin (2003) exclude financial firms in their return-earnings trend analysis. They argue that financial firms have bigger mismatch in their assets and liabilities and thus may exhibit different association between earnings and stock returns than firms in other industries.

We explicitly compare the time-series earnings-stock price and book value-stock price relation between financial institutions and other industries for the following reasons. Compared with other industries, financial instruments dominate financial institutions'

financial statements (e.g., Khurana and Kim, 2003). Barth et al. (2001) argue that loans are major assets to be revalued by banks under fair value accounting. The rapid growth and increasing complexity of those instruments increase the demand to adequately report them in both balance sheets and income statements in order to manage their risks.

To address this demand, FASB issued a series of fair value accounting standards from the 1990's. SFAS 107 (FASB 1991) requires that all entities disclose the fair value of financial instruments, for which it is practicable to estimate the fair value. Barth et al. (1996) document that fair value estimates of loans and long-term securities under SFAS 107 add incremental explanatory power to the bank share prices. Two years later, SFAS 115 (FASB 1993) addressed the accounting for debt investments and for equity investments that have determinable fair values. Park et al. (1999) find that fair value disclosures under SFAS 115 explain equity value beyond the historical measures. Issued in 1994, SFAS 119 (FASB 1994) required that firms disclose disaggregated notional amounts of derivative instruments. Wong (2000) demonstrates that the disaggregated derivative disclosure provides useful information in equity valuation.

Although these standards address the accounting for financial instruments to some degree, financial instruments, especially derivative instruments, are normally presented in the footnote of financial statements under these standards. Many people believe that such footnote disclosure cannot meet the fast growth in global financial markets and inadequate financial reporting of derivatives may weaken the usefulness of earnings and book value to explain stock price over time. As argued above, financial institutions generally hold much more financial instruments, such as futures, options, and interest rate swaps, than firms in other industries. For example, as of December 31, 2005, Bank of

America carried more than 500 billions of financial assets on its balance sheet, of which 23.7 billion were derivative assets (almost 5%). The insufficient accounting for financial instruments in balance sheets and income statements adversely affects the time-series fundamental earnings/book value-price relation for the financial industry more than for other industries. We propose the second hypothesis (also in null form) as follows:

> ***Hypothesis 2:*** *The effect postulated in hypothesis 1 is the same in financial and other industries.*

To remedy the inadequate financial reporting caused by mere footnote disclosure, FASB issued SFAS 133 in 1998. With this statement, FASB, for the first time, required that all firms record the fair value of derivatives on the balance sheets as either assets or liabilities. SFAS 133 also requires that firms report the value changes of the derivatives in earnings if such derivatives do not completely zero out the gain or loss on the instrument that they are supposed to hedge. Ahmed et al. (2006) find that recognized derivatives under SFAS 133 provide additional information contents to the equity valuation than disclosed derivatives under previous standards. If SFAS 133 improves the equity valuation for firms holding derivative instruments, we would expect such effect is stronger for firms holding more derivatives (i.e., financial industry) than for firms holding fewer derivatives (i.e., other industries). Our third null hypothesis is:

> ***Hypothesis 3:*** *The effect postulated in hypothesis 2 is not affected by the implementation of SFAS 133.*

## 3. Research Design

Following Collins et al. (1997), we employ the Ordinary Least Squares (OLS) regression based on Ohlson's (1995) model. This model is well suited for our research

question since new fair value accounting standards may have an impact on both income statement and balance sheet items:

$$P_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 E_{it} + \alpha_3 LOSS_{it}*E_{it} + \varepsilon_{it} \quad (1)$$

where $P_i$ is the price per share for firm i at fiscal year end; $BV_i$ is the net book value per share for firm i at fiscal year-end; $E_i$ is the earnings before extraordinary items per share for firm i at fiscal year end; and $LOSS_i$ is a binary variable that equals 1 if $E_i < 0$ and 0 otherwise. [2]

According to extant research (for example, Collins et al. 1997), $\alpha_1$ and $\alpha_2$ are positive. Collins et al. (1999) provide evidence that loss firms exhibit a lower coefficient on earnings in equity valuation than profit firms. Thus, we include the interaction between loss firms and earnings before extraordinary items ($LOSS_{it}*E_{it}$) and expect $\alpha_3$ to be negative.

We estimate Model (1) by year in the financial and other industries separately. The coefficients $\alpha_1$ and $\alpha_2$ represent book value-relevance and earnings relevance. The combined relevance is measured by the adjusted $R^2$ for each model.

We then examine the differential trend of value-relevance over time between the financial industry and other industries using the following model:

$$\begin{aligned} \text{Dependent Variable} = {} & \beta_0 + \beta_1 DFIN + \beta_2 DPOST + \beta_3 TIME \\ & + \beta_4 DFIN*TIME + \beta_5 DPOST*TIME \\ & + \beta_6 DFIN*DPOST*TIME + \varepsilon \end{aligned} \quad (2)$$

where Dependent Variable is book value-relevance, earnings-relevance, or combined value-relevance from Model (1) for each year. We have two observations every year, one

[2] Price per share is Compustat annual data 199; Book value per share is Compustat annual data 60 divided by annual data 25; Earnings before extraordinary item per share is Compustat annual data 18 divided by annual data 25.

from the financial industry and another from other industries. We use stacked data to estimate model 1. DFIN is a dummy variable that equals 1 for financial institutions and 0 otherwise; DPOST is a dummy variable that equals 1 for post-SFAS 133 period from 2001 onwards and 0 otherwise; and TIME is a running variable from 0 in 1970 to 35 in 2005. We choose 2001 as the year of implementation for SFAS 133 for the following reasons. Paragraph 48 of SFAS 133 (as amended by SFAS 137) states, "This Statement shall be effective for all fiscal quarters of all fiscal years beginning after June 15, 2000." Firms with fiscal years ending on June 16, 2001 or later would start reporting under SFAS 133. Compustat assigns the data year as the year in which the fiscal year begins if the fiscal year end is from January through May. If the fiscal year end is from June through December, then the data year is the year in which the fiscal year ends. Thus, data year 2001 would be the year that SFAS 133 was implemented.[3]

We employ Weighted Least Squares (WLS) regression methodology to accommodate the effect of different sample sizes in the financial and other industries, and the ensuing differences in accuracy of estimated coefficients. A positive (negative) $\beta_3$ would reject H1 that value-relevance of accounting information does not increase (decrease) over time. If the increasing (decreasing) trend of value-relevance of accounting information is weaker (stronger) in the financial industry than in other industries, we would expect $\beta_4$ to be negative (rejection of H2). In addition, if SFAS 133 mitigates the less increasing or more decreasing value-relevance of accounting information for financial institutions, $\beta_6$ should be positive (resulting in the rejection of H3).

[3] Since early adoption of SFAS 133 was encouraged, we run sensitivity analysis on Model 2 by excluding 2000 and then 2000 and 1999 from the estimation (not reported). The conclusions do not change.

## 4. Empirical Analysis

### *4.1. Sample Selection and Descriptive Statistics*

We select our sample from Compustat during the period of 1970-2005. Our sample for financial industry is from Standard Industrial Classification (SIC) codes 6000-6999. These include the following financial institutions:

Group 60: Depository Institutions
Group 61: Non-depository Credit Institutions
Group 62: Security and Commodity Brokers, Dealers, Exchanges, and Services
Group 63: Insurance Carriers
Group 64: Insurance Agents, Brokers, and Service
Group 65: Real Estate
Group 67: Holding and Other Investment Offices

Our sample for other industries is from remaining SIC codes (excluding utility industry since the impact of SFAS 133 is not clear in this sector). Both book value of equity and number of shares outstanding should be positive to be included in the final sample. All continuous variables are winsorized in the range (1%, 99%) to minimize the effects of outliers. Our final sample consists of 34,252 firm-year observations in the financial industry and 160,206 observations in other industries.

Table 1 shows the descriptive statistics for our sample. Panel A reports the descriptive statistics for the variables used in the financial industry, while Panel B reports the same statistics in other industries. The mean price per share is $20.39 for financial institutions and $14.62 for firms in other industries. Financial institutions are generally larger and more profitable than firms in other industries, as evidenced by higher mean book value per share and earnings per share. Fourteen percent of financial institutions and thirty-one percent of firms in other industries report losses during our sample period.

[Insert table 1 about here]

Table 2 contains the Pearson and Spearman correlation coefficients for the financial (Panel A) and other industries (Panel B). The Pearson (Spearman) correlation coefficients are in the lower (upper) triangle. As expected, book value and earnings are positively correlated with stock price and with each other. LOSS dummy is negatively correlated with stock prices, book value and earnings. This is consistent with the view that loss firms have smaller earnings and book value and reduced stock price. All coefficients are significant at the 0.0001 level.

[Insert table 2 about here]

*4.2. Empirical Results*

Table 3 presents the results for yearly regressions of price on book value and earnings for financial institutions based on Model (1). The number of observations range from 245 in 1970 to 1,688 in 1999. The coefficients on book value are positive and significant in 33 out of 36 yearly regressions and generally exhibit an increasing trend. The coefficients on earnings and the interaction of loss dummy and earnings are significant and in the expected direction in all regressions. Earnings coefficients are lowest in the early 1980s and then increase. The adjusted $R^2$s range from 51.5% to 76.1%, suggesting a good fit for the equity valuation model. The adjusted $R^2$s are above 0.50 in the early 1970s and then increases to above 0.60 and even 0.70 in the late 1970s-1990s, although they fall harshly in late 1990s and rise again in the 2000s.

[Insert table 3 about here]

The results for other industries are shown in Table 4. The number of observations

is larger than in financial institutions and ranges from 2,768 in 1970 to 6,407 in 1997. The coefficients on book value are positive and significant(as expected) in 32 out of 36 yearly regressions. The coefficients $\alpha_1$ increase almost monotonically. The coefficients on earnings are all positively significant and the coefficients on the loss interaction term are all negatively significant, consistent with Collins et al. (1999). The coefficients $\alpha_2$ decline sharply in the early 1970s and then increase steadily but slowly later on. The adjusted $R^2$s are between 0.24 and 0.77. The trend for adjusted $R^2$s is similar to that for financial institutions.

[Insert table 4 about here]

Figures 1-3 depict the time trends for book value coefficients, earnings coefficients and adjusted $R^2$. The dark lines represent the financial industry, while the gray lines are for other industries. These plots generally confirm the increasing trends for both the financial industry and other industries.

[Insert figures 1-3 about here]

In Table 5, we present estimates of regressions of book value coefficients ($\alpha_1$), earnings coefficients ($\alpha_2$), and adjusted $R^2$s on time trend (TIME), financial dummy (DFIN), and post-SFAS 133 dummy (DPOST), along with interaction terms (DFIN*TIME, DPOST*TIME, and DFIN*DPOST*TIME). When book value-relevance ($\alpha_1$) is the dependent variable (Column 2), the coefficient on TIME is positive and significant (coefficient = 0.17). The TIME coefficient remains positive and significant when we replace the dependent variable with earnings relevance ($\alpha_2$ in Column 3). A regression of the yearly adjusted $R^2$ (Column 4) on TIME indicates that combined value relevance also increases significantly over time (the coefficient on TIME is 0.07 and

significant at the 0.01 level). These results suggest increasing overall value-relevance over time, thereby, rejecting H1.

[Insert table 5 about here]

Our results on book value and adjusted $R^2$ are consistent with Collins et al. (1997). Contrary to Collins et al. (1997), we find increasing earnings relevance over time. This is possibly due to the following three reasons: (1) we measure earnings as earnings before extraordinary items while they use bottom line earnings; Collins et al. (1997) find that one time items (i.e., earnings before discontinued operation, extraordinary items and special items) are more transitory and thus reduce earnings relevance; (2) unlike Collins et al. (1997), we control for loss firms, since they report an increasing frequency of loss firms over time and loss firms have more transitory components of earnings than profit firms; (3) Collins et al. (1997) examine the 1953-93 period. In contrast, we estimate the regression over the 1970-2005 period. From Tables 3 and 4 and Figure 2, we see a sharp decline of earnings relevance in the early 1970s but a stable increase afterwards through the 2000s. Table 3 of Collins et al. (1997) shows a sharper decline of earnings relevance before the 1970s, from 9.31 in the 1950s to 8.22 in the 1960s and 3.22 in the 1970s. Overall, our results, coupled with the results in Collins et al. (1997), suggest that although earnings relevance decreases during the pre-1975 period, earnings become more relevant afterwards.

The key variable to test our H2 is DFIN*TIME. The coefficient on DFIN*TIME is negative (coefficient = –0.14, –0.49, or –0.03 with the dependent variable as book value-relevance, earnings relevance, or combined relevance, respectively) and significant at the 0.01 level. Generally, the results reject H2 and imply that overall value-relevance

of accounting information increases less for financial institutions than for other industries. The negative coefficients on DFIN*TIME in Columns 2 and 3 clearly indicate that earnings and book value become less value relevant over time for financial institutions in comparison to other industries.

To assess whether such deterioration in value relevance of accounting information for financial institutions improves after they adopt SFAS 133, we incorporate a three way interaction term DFIN*DPOST*TIME. A positive coefficient on DFIN*DPOST*TIME indicates that the slower increasing trend for book value/earnings/combined relevance improves because of derivative instrument reporting under SFAS 133. In contrast, a negative coefficient on DFIN*DPOST*TIME suggests that accounting information becomes less informative for financial institutions after SFAS 133. Table 5 shows positive and significant coefficients on DFIN*DPOST*TIME in Columns 2-4 (Coefficients = 0.04, 0.30 and 0.02 in Columns 2, 3, and 4, respectively). Thus, in financial institutions, in the post-SFAS 133 period, there is an incremental annual effect of 0.064 (0.30) in the coefficient on book value (earnings), compared with the pre-SFAS 133 period. At the same time, there is an annual improvement of 2% in the post-SFAS 133 period in adjusted $R^2$ of financial institutions compared to pre-SFAS 133 period. Overall, the results reject H3 and suggest that SFAS 133 mitigates the slower growth trend in value-relevance of financial institutions compared to other industries.

## 5. Conclusion

We investigate the comparative changes in the value-relevance of book value and earnings information from 1970 to 2005. Previous research on the value-relevance trend

provides inconsistent results as to whether earnings, book value and adjusted $R^2$ improve or decline over time (e.g., Collins et al., 1997; Francis and Schipper, 1999; Lev and Zarowin, 1999). Moreover, none of the studies examines the comparative change of value-relevance in financial institutions versus other industries and how the trend is affected by the new fair value accounting standard, SFAS 133.

Using a sample of 34,252 firm-year observations in financial institutions and 160,206 observations in other industries during the 1970-2005 period, we report three primary findings. First, we find that the value-relevance of earnings and book value increases over time. The combined value-relevance has also improved throughout our sample period. Second, such increasing trend is less prominent for financial institutions than for firms in other industries. Lastly, although the increasing trend is less pronounced for financial institutions, the value relevance of accounting information improves after firms adopt SFAS 133 in 2001.

Financial institutions hold much more financial assets and liabilities than firms in other industries. Our results are consistent with the conjecture that inadequate accounting for financial instruments in both the balance sheets and income statements is associated with more noise in book value and earnings information resulting in lower growth trend for value-relevance of accounting information in financial institutions compared to other industries. Our evidence also suggests that SFAS 133 has improved the slower growth trend of value-relevance for financial institutions. This is consistent with the view that SFAS 133 provides more timely and useful information to investors and improves the association between book value /earnings and stock price. Consequently, our results provide evidence of positive information content effects of SFAS 133 on accounting

information.

Our paper also raises some questions for future research. First, it is not clear whether the value-relevance of different components of earnings and book value change differently. Future research can break down earnings and book value into different categories and examine their change in value-relevance. Second, we focus on the comparative change of value-relevance between financial institutions and firms in other industries. It is possible that among other industries, some industries, such as high-tech industries, will also exhibit differential trends of value-relevance over time. More detailed inter-industry analysis can lead to better insight. Finally, if data on the net effect of SFAS 133 on book value and earnings (that is, with and without implementation) can be compiled, a more in-depth study of the impact of SFAS 133 on value relevance can be conducted.

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**TABLE 1**
DESCRIPTIVE STATISTICS FOR THE SAMPLE

*Panel A: Descriptive statistics for financial firms*
*(N = 34,252 firm-years)*

| Variable | Mean | Std. Dev. | Q1 | Median | Q3 |
|---|---|---|---|---|---|
| $P_i$ | 20.39 | 17.21 | 8.25 | 16.63 | 27.50 |
| $BV_i$ | 15.22 | 13.19 | 6.41 | 12.32 | 19.85 |
| $E_i$ | 1.55 | 2.05 | 0.38 | 1.23 | 2.34 |
| $LOSS_i$ | 0.14 | 0.35 | 0.00 | 0.00 | 0.00 |

*Panel B: Descriptive statistics for firms in other industries*
*(N = 160,206 firm-years)*

| Variable | Mean | Std. Dev. | Q1 | Median | Q3 |
|---|---|---|---|---|---|
| $P_i$ | 14.62 | 15.82 | 3.38 | 9.13 | 20.25 |
| $BV_i$ | 8.88 | 10.07 | 2.02 | 5.68 | 11.78 |
| $E_i$ | 0.72 | 1.67 | –0.09 | 0.44 | 1.38 |
| $LOSS_i$ | 0.31 | 0.46 | 0.00 | 0.00 | 1.00 |

Notes: $P_i$ is the price per share for firm i at fiscal year end; $BV_i$ is the net book value per share for firm i at fiscal year end; $E_i$ is the earnings before extraordinary items per share for firm i at fiscal year end; and $LOSS_i$ is a binary variable that equals 1 if $E_i < 0$ and 0 otherwise.

**TABLE 2**
CORRELATION COEFFICIENTS AMONG VARIABLES

*Panel A: Correlation coefficients among variables for financial firms (N = 34,252 firm-years)*

| Variable | $P_i$ | $BV_i$ | $E_i$ | $LOSS_i$ |
|---|---|---|---|---|
| $P_i$ | 1.00 | 0.73 | 0.76 | –0.43 |
| $BV_i$ | 0.70 | 1.00 | 0.72 | –0.35 |
| $E_i$ | 0.69 | 0.71 | 1.00 | –0.61 |
| $LOSS_i$ | –0.32 | –0.26 | –0.52 | 1.00 |

*Panel B: Correlation coefficients among variable for firms in other industries (N = 160,206 firm-years)*

| Variable | $P_i$ | $BV_i$ | $E_i$ | $LOSS_i$ |
|---|---|---|---|---|
| $P_i$ | 1.00 | 0.75 | 0.67 | –0.47 |
| $BV_i$ | 0.63 | 1.00 | 0.68 | –0.48 |
| $E_i$ | 0.61 | 0.66 | 1.00 | –0.80 |
| $LOSS_i$ | –0.35 | –0.34 | –0.60 | 1.00 |

Notes: Pearson correlation coefficients are in the lower triangle and Spearman correlation coefficients are in the upper triangle. All of the coefficients are significant at the 0.0001 level.
$P_i$ is the price per share for firm i at fiscal year end; $BV_i$ is the net book value per share for firm i at fiscal year end; $E_i$ is the earnings before extraordinary items per share for firm i at fiscal year end; and $LOSS_i$ is a binary variable that equals 1 if $E_i < 0$ and 0 otherwise.

**TABLE 3**
CROSS-SECTIONAL REGRESSIONS FOR FINANCIAL FIRMS

$P_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 E_{it} + \alpha_3 LOSS_{it} * E_{it} + \varepsilon_{it}$ (1)

| Year | N | $\alpha_1$ | $\alpha_2$ | $\alpha_3$ | Adj. $R^2$ |
|---|---|---|---|---|---|
| 1970 | 245 | 0.38*** | 4.94*** | –0.19 | 0.638 |
| 1971 | 303 | 0.05 | 7.70*** | –22.12*** | 0.622 |
| 1972 | 378 | –0.07 | 9.77*** | –12.03*** | 0.642 |
| 1973 | 387 | 0.06 | 6.67*** | –6.55*** | 0.548 |
| 1974 | 424 | 0.26*** | 2.58*** | –2.14*** | 0.515 |
| 1975 | 414 | 0.24*** | 3.63*** | –3.10*** | 0.629 |
| 1976 | 413 | 0.29*** | 4.72*** | –4.14*** | 0.761 |
| 1977 | 421 | 0.32*** | 3.38*** | –3.61*** | 0.721 |
| 1978 | 478 | 0.25*** | 3.45*** | –4.18*** | 0.689 |
| 1979 | 564 | 0.10** | 4.17*** | –4.44*** | 0.651 |
| 1980 | 597 | 0.17*** | 3.74*** | –3.34*** | 0.657 |
| 1981 | 654 | 0.35*** | 3.40*** | –3.36*** | 0.748 |
| 1982 | 661 | 0.41*** | 2.71*** | –2.73*** | 0.707 |
| 1983 | 681 | 0.53*** | 2.46*** | –2.40*** | 0.739 |
| 1984 | 684 | 0.62*** | 1.90*** | –1.58*** | 0.750 |
| 1985 | 713 | 0.77*** | 2.52*** | –2.56*** | 0.732 |
| 1986 | 792 | 0.50*** | 4.01*** | –3.77*** | 0.730 |
| 1987 | 837 | 0.54*** | 3.13*** | –3.49*** | 0.646 |
| 1988 | 851 | 0.35*** | 3.69*** | –3.45*** | 0.624 |
| 1989 | 832 | 0.41*** | 5.17*** | –5.48*** | 0.709 |
| 1990 | 823 | 0.21*** | 5.30*** | –5.01*** | 0.683 |
| 1991 | 863 | 0.36*** | 5.79*** | –4.68*** | 0.698 |
| 1992 | 894 | 0.55*** | 5.18*** | –4.73*** | 0.695 |
| 1993 | 1,530 | 0.54*** | 4.19*** | –3.48*** | 0.683 |
| 1994 | 1,626 | 0.52*** | 4.26*** | –4.20*** | 0.703 |
| 1995 | 1,658 | 0.56*** | 5.17*** | –5.38*** | 0.723 |
| 1996 | 1,658 | 0.67*** | 5.24*** | –4.94*** | 0.734 |
| 1997 | 1,587 | 0.63*** | 6.62*** | –5.72*** | 0.690 |
| 1998 | 1,610 | 0.43*** | 7.05*** | –6.25*** | 0.615 |
| 1999 | 1,688 | 0.37*** | 6.36*** | –6.35*** | 0.551 |
| 2000 | 1,609 | 0.64*** | 5.30*** | –5.21*** | 0.546 |
| 2001 | 1,542 | 0.65*** | 5.22*** | –6.00*** | 0.597 |
| 2002 | 1,509 | 0.63*** | 4.65*** | –3.71*** | 0.681 |
| 2003 | 1,492 | 0.73*** | 4.01*** | –2.60*** | 0.650 |
| 2004 | 1,463 | 0.59*** | 5.21*** | –5.74*** | 0.639 |
| 2005 | 1,371 | 0.58*** | 6.01*** | –7.92*** | 0.672 |
| Pooled | 34,252 | 0.45*** | 4.28*** | –3.50*** | 0.568 |

Notes: $P_i$ is the price per share for firm i at fiscal year end; $BV_i$ is the net book value per share for firm i at fiscal year end; $E_i$ is the earnings before extraordinary items per share for firm i at fiscal year end; and $LOSS_i$ is a binary variable that equals 1 if $E_i < 0$ and 0 otherwise. ***, ** and * represents significance at the 1%, 5% and 10% level, respectively (one-tailed for predicted signs and two-tailed otherwise).

**TABLE 4**
CROSS-SECTIONAL REGRESSIONS FOR OTHER INDUSTRIES

$P_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 E_{it} + \alpha_3 LOSS_{it} * E_{it} + \varepsilon_{it}$ (1)

| Year | N | $\alpha_1$ | $\alpha_2$ | $\alpha_3$ | Adj. $R^2$ |
|---|---|---|---|---|---|
| 1970 | 2,768 | 0.03 | 9.93*** | –10.86*** | 0.559 |
| 1971 | 2,996 | –0.05** | 11.44*** | –12.24*** | 0.527 |
| 1972 | 3,211 | –0.11*** | 10.90*** | –11.98*** | 0.456 |
| 1973 | 3,262 | –0.01 | 7.02*** | –8.08*** | 0.414 |
| 1974 | 3,307 | 0.12*** | 3.88*** | –4.04*** | 0.482 |
| 1975 | 3,263 | 0.21*** | 4.97*** | –5.27*** | 0.560 |
| 1976 | 3,244 | 0.18*** | 6.08*** | –7.09*** | 0.655 |
| 1977 | 3,198 | 0.17*** | 5.37*** | –6.21*** | 0.689 |
| 1978 | 3,319 | 0.12*** | 5.27*** | –6.39*** | 0.651 |
| 1979 | 3,528 | 0.10*** | 5.29*** | –5.82*** | 0.609 |
| 1980 | 3,678 | 0.08*** | 6.36*** | –7.04*** | 0.578 |
| 1981 | 4,150 | 0.21*** | 5.12*** | –5.75*** | 0.659 |
| 1982 | 4,100 | 0.37*** | 5.50*** | –5.65*** | 0.661 |
| 1983 | 4,431 | 0.50*** | 5.52*** | –5.78*** | 0.717 |
| 1984 | 4,477 | 0.40*** | 5.64*** | –5.94*** | 0.770 |
| 1985 | 4,412 | 0.55*** | 6.33*** | –7.08*** | 0.756 |
| 1986 | 4,558 | 0.64*** | 6.82*** | –7.29*** | 0.739 |
| 1987 | 4,693 | 0.58*** | 6.02*** | –6.47*** | 0.719 |
| 1988 | 4,452 | 0.60*** | 5.86*** | –6.84*** | 0.763 |
| 1989 | 4,299 | 0.65*** | 6.03*** | –6.48*** | 0.732 |
| 1990 | 4,223 | 0.44*** | 7.14*** | –7.76*** | 0.684 |
| 1991 | 4,280 | 0.64*** | 8.10*** | –8.95*** | 0.652 |
| 1992 | 4,564 | 0.72*** | 7.88*** | –8.78*** | 0.675 |
| 1993 | 4,976 | 0.83*** | 7.63*** | –8.40*** | 0.675 |
| 1994 | 5,285 | 0.72*** | 6.72*** | –7.20*** | 0.683 |
| 1995 | 5,804 | 0.78*** | 6.17*** | –6.73*** | 0.567 |
| 1996 | 6,372 | 0.72*** | 6.59*** | –6.62*** | 0.579 |
| 1997 | 6,407 | 0.78*** | 7.43*** | –8.02*** | 0.573 |
| 1998 | 6,142 | 0.68*** | 7.20*** | –7.63*** | 0.443 |
| 1999 | 6,168 | 0.71*** | 5.26*** | –6.97*** | 0.236 |
| 2000 | 6,077 | 0.72*** | 5.04*** | –4.55*** | 0.365 |
| 2001 | 5,476 | 0.86*** | 5.43*** | –4.90*** | 0.508 |
| 2002 | 5,096 | 0.73*** | 5.53*** | –5.07*** | 0.582 |
| 2003 | 4,918 | 0.85*** | 6.19*** | –6.03*** | 0.632 |
| 2004 | 4,858 | 0.87*** | 6.31*** | –6.45*** | 0.664 |
| 2005 | 4,214 | 0.81*** | 6.93*** | –6.83*** | 0.687 |
| Pooled | 160,206 | 0.43*** | 5.47*** | –5.89*** | 0.494 |

Notes: $P_i$ is the price per share for firm i at fiscal year end; $BV_i$ is the net book value per share for firm i at fiscal year end; $E_i$ is the earnings before extraordinary items per share for firm i at fiscal year end; and $LOSS_i$ is a binary variable that equals 1 if $E_i < 0$ and 0 otherwise. ***, ** and * represents significance at the 1%, 5% and 10% level, respectively (one-tailed for predicted signs and two-tailed otherwise).

**TABLE 5**

POOLED TREND ANALYSIS FOR COEFFICIENTS OF BV AND E ($\alpha_1$ AND $\alpha_2$) AND ADJUSTED R-SQUARE

Dependent Variable = $\beta_0 + \beta_1$ DFIN + $\beta_2$ DPOST + $\beta_3$ TIME + $\beta_4$ DFIN*TIME + $\beta_5$ DPOST*TIME + $\beta_6$ DFIN*DPOST*TIME + $\varepsilon$ (2)

| Independent Variables | Dependent Variables | | |
|---|---|---|---|
| | $\alpha_1$ | $\alpha_2$ | Adj. $R^2$ |
| *Column 1* | *Column 2* | *Column 3* | *Column 4* |
| Intercept | -0.40*** | 15.82*** | 1.71*** |
| DFIN | 0.31* | –15.96*** | –1.62*** |
| DPOST | 6.59** | 6.79 | 0.45 |
| TIME | 0.17*** | 0.78*** | 0.07*** |
| DFIN*TIME | –0.14*** | –0.49*** | –0.03*** |
| DPOST*TIME | –0.24*** | –0.57 | –0.04 |
| DFIN*DPOST*TIME | 0.04*** | 0.30*** | 0.02*** |
| Observations | 72 | 72 | 72 |
| Adj. $R^2$ | 0.9450 | 0.9355 | 0.9633 |
| F Value | 1204.26 | 172.73 | 311.24 |
| Prob. > F | 0.0001 | 0.0001 | 0.0001 |

Notes: Dependent variables are the coefficient of book value per share ($\alpha_1$), the coefficient of earnings per share ($\alpha_2$), and the adjusted $R^2$. They are obtained from Model (1). DFIN is a dummy variable that equals 1 for financial institutions and 0 otherwise; DPOST is a dummy variable that equals 1 for post-SFAS133 period from 2001 onwards and 0 otherwise; and TIME is a running variable from 0 in 1970 to 35 in 2005. ***, ** and * represents significance at the 1%, 5% and 10% level, respectively (two-tailed).

**FIGURE 1**
PLOT OF THE COEFFICIENTS OF BOOK VALUE PER SHARE OVER TIME FOR FINANCIAL VERSUS OTHER INDUSTRIES

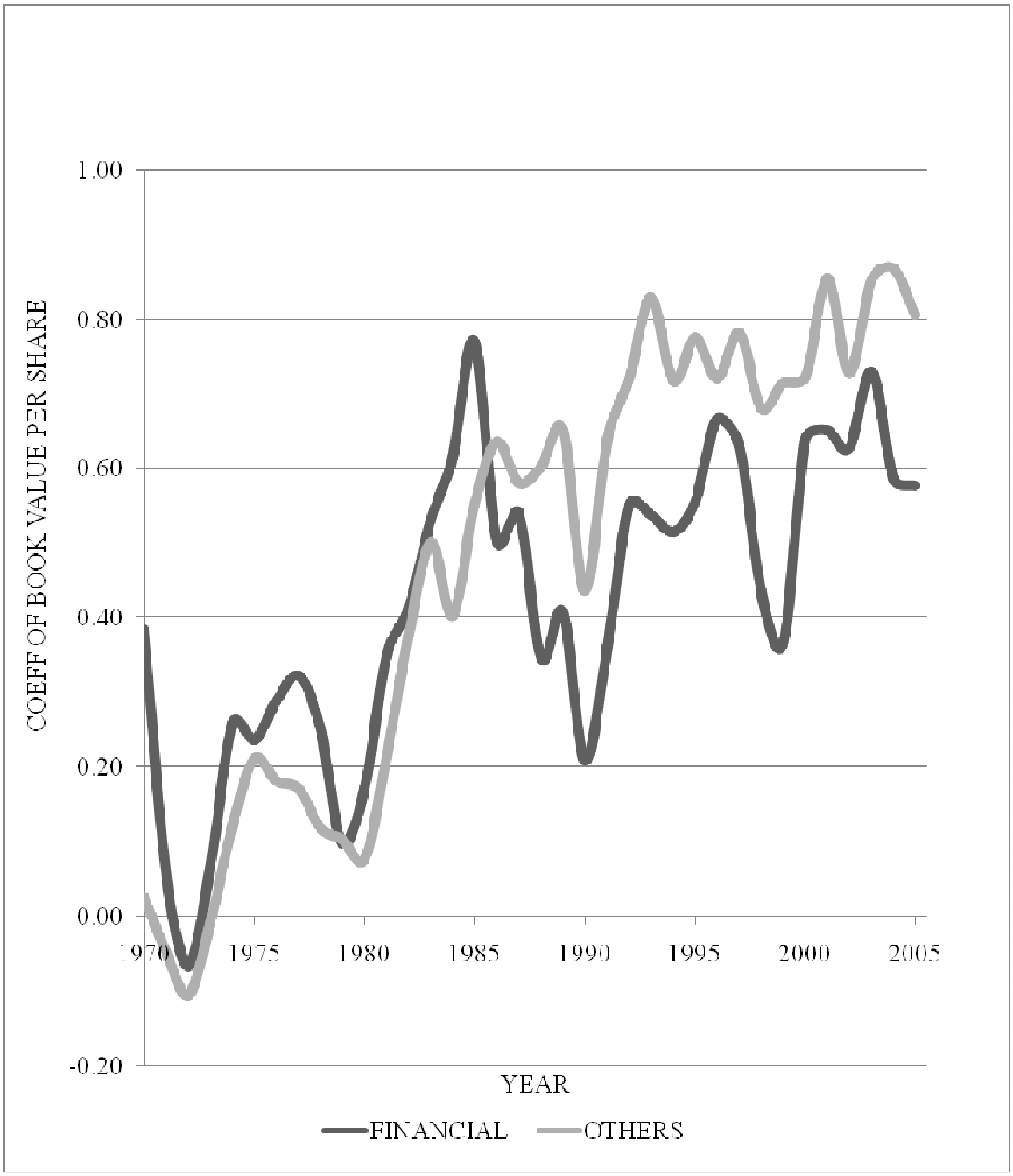

**FIGURE 2**
PLOT OF THE COEFFICIENTS OF EARNINGS PER SHARE OVER TIME FOR FINANCIAL VERSUS OTHER INDUSTRIES

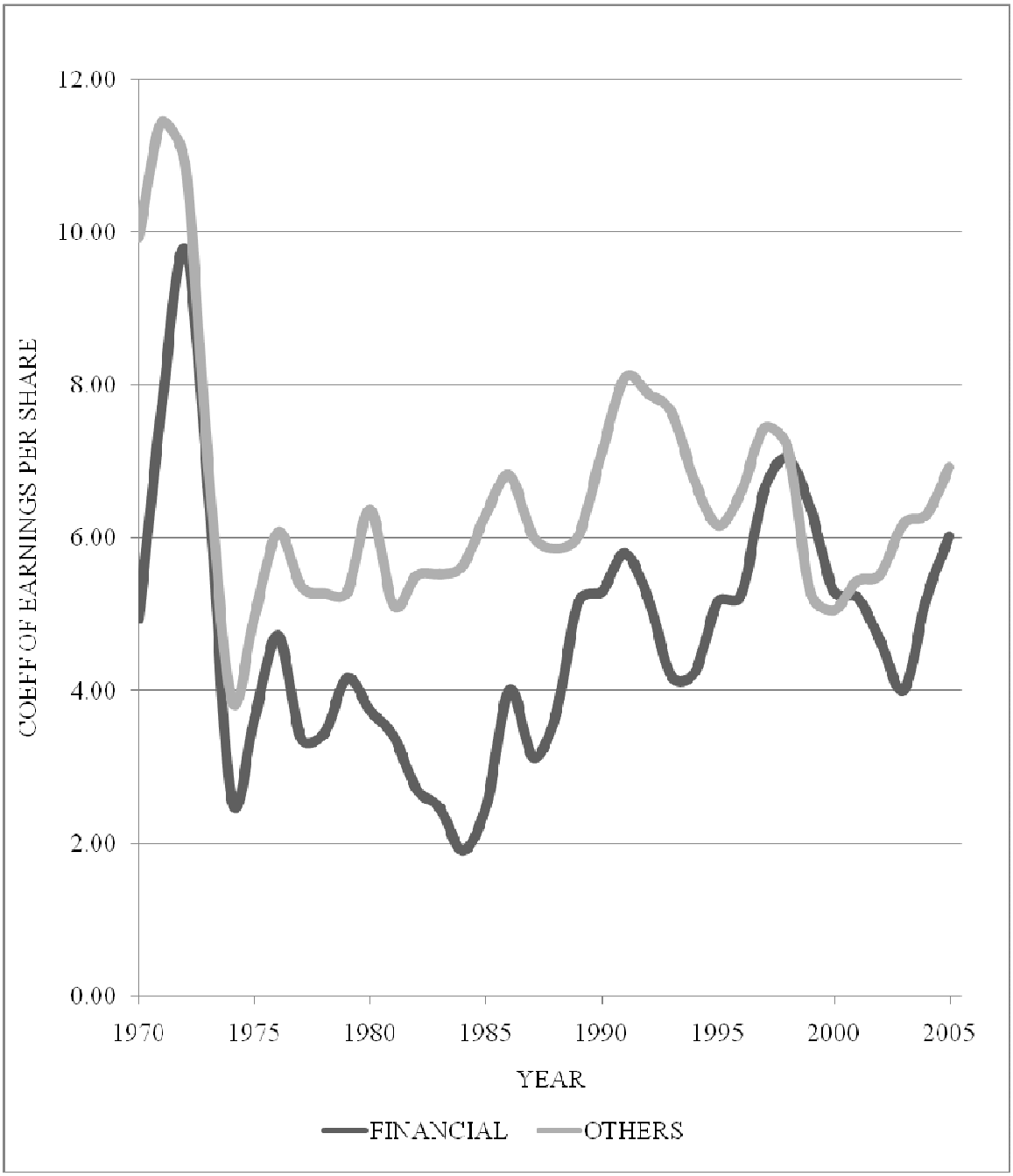

**FIGURE 3**
PLOT OF THE ADJUSTED R-SQUARE OVER TIME FOR FINANCIAL VERSUS OTHER INDUSTRIES