

# VALUE RELEVANCE OF ACCOUNTING NUMBERS: EVIDENCE FROM THE JAKARTA STOCK EXCHANGE (JSX)

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## **Abstract**

*This paper investigates value relevance of accounting numbers of the firms listed at the Jakarta Stock Exchange (JSX) for the period of 1993-2001. This study reveals that combined value relevance of both book value and residual earnings increased steadily from 1993 until 2001, except for the crisis year in 1998. When investigated separately, the value relevance of book value increased dramatically from 1993 to 2001, but decreased slightly in the crisis year 1998. On the other hand, the value relevance of residual earnings decreased significantly from 1993 to 1999 and increased to the highest level in 2000. Consistent with these findings, the incremental value relevance of book value increased with the highest level in 1997, whereas the incremental value relevance of residual earnings decreased from 1993 to the zero in 1996 until 2001.*

**Keywords:** *Value relevance, accounting numbers, and JSX.*

## **INTRODUCTION**

Financial statement has been used to reflect the economics of firms. Stakeholders, mainly investors and lenders rely on the financial statements in assessing firms to invest or to lend their money. Currently, however, the relationship between accounting data and market value has been being questioned. Academic studies documented that value relevance of financial statement declines over time (Chang, 1999; Francis and Schipper, 1999). Many studies investigated the value relevance of financial statement in developed capital market such as in the US. This paper addresses the value relevance of accounting numbers of the firms listed at the Jakarta Stock Exchange (JSX). At least two reasons that make this study become important. First, such similar study is very limited in Indonesian market. Second, Indonesia, as other South East Asian countries, experienced deep economic crises

in 1998 and the effects were the worst among countries in the region.

## **STUDIES IN DEVELOPED MARKET**

Studies investigate the relationship between market value and earnings and book values resulted from current financial accounting model come to mixed conclusions. Elliot and Jacobson (1991) contended that the current financial accounting model in the US results in financial statements that are insufficient to evaluate information-era companies. Some studies try to provide evidence as to whether financial statements resulted from conventional historical cost accounting have lost its value-relevance. Chang (1999) found that the value relevance of earnings and book value has declined. He used earnings and book value data from 1953 until 1996.

Collins *et al.* (1997) documented three primary findings. First, the combined

value-relevance of earnings and book values has not declined over past forty years. Second, the value relevance of earnings has declined, but in the same time the value relevance of book values increases. Lastly, they found that the shift in value-relevance from earnings to book values can be associated with changes in average firm size and intangible intensity across time, increasing significance of one-time items and increase frequency of negative earnings. Their findings resulted from the investigation on the value relevance of value and book value and earnings over the period 1953 to 1993.

Francis and Schipper (1999) based on their study on the relation between market value and accounting numbers over the 1952- 1994 period interpreted their results as providing mixed evidence on whether financial report has lost its relevance. Their results indicated that the explanatory power of earnings levels and changes for returns has significantly decreased over time, but it was not the case for explanatory power of book value. Ely and Waymire (1999) found that value relevance of earnings did not increase significantly in the case of either CAP empowerment or subsequent reorganizations of standard setting process. However, they also found the combined value-relevance of earnings and book values for equity valuation increased significantly during the FASB tenure (1974-93) compared to that of the APB (1960-1973).

#### **Related Study in East Asia**

Graham and King (2000) investigated the value relevance of different accounting practices using an empirical model that regress current book value and current residual earnings on market prices. Unlike in the residual income model, they use current residual earnings as a surrogate expected residual earnings. They found that accounting book value and residual income earnings are positively and significantly related to

current stock prices across Indonesia, Korea, Malaysia, Taiwan and Thailand.

Graham and King and Bailes (2000) documented that earnings and book values of Thai firms were positively and significantly related to security price. The extent of the relation, however, was less than US and Britain earnings and book values. They also investigated whether earnings and book values had incremental information content relative to the other. They found that these two accounting variables had incremental information content relative to the other. Additionally, they also report that the value relevance of Thai book value increased significantly, particularly after the decline in the value of Bath in July 1997. This increase was related to the increase in the number of Thai firms reporting losses in the second and third quarters of 1997, while there was no evidence that value relevance of earnings had changed.

#### **Research Question**

This paper extends the existing literature with the value relevance study of accounting numbers in the context of Indonesia. More specifically, this study tries to answer the following research questions.

1. Do accounting numbers specifically book value and residual earnings have value relevance to the market value?
2. How did the value relevance of accounting numbers behave within the period of 1993-2001?

#### **METHOD**

This paper uses linear cross section regressions. A simplified Ohlson model is used to investigate the value relevance of book value and earnings. The following procedures are undertaken to obtain the value relevance of book value and earnings as indicated by the explanatory power ( $R^2$ ) of the variables in the equations. First, this study estimates equation (1).

$$\text{Price}_{it} = a_0 + a_1\text{BVPS}_{it} + a_2\text{RESID}_{it} + e_{it} \dots\dots\dots (1)$$

Where  $\text{Price}_{it}$  is the stock price per share of firm  $i$  at the end of year  $t$ ,  $\text{BVPS}_{it}$  is book value per share at the end of the year  $t$ ,  $\text{RESID}_{it}$  is residual earnings of firm  $i$  at the end of year  $t$ . The RESID is calculated by subtracting the product of this year interest rate and book value at the beginning of the year from current earnings ( $\text{RESID} = \text{EPS}_{it} - r * (\text{BVPS}_{t-1})$ ). This study follows Graham and King (2000) uses RESID as a proxy for expected residual earnings in period  $t_{+1}$  and  $e_{it}$  is error term. This equation provides combined explanatory power ( $R_a^2$ ) of both book value and residual earnings.

Second, this study estimates equation (2).

$$\text{Price}_{it} = b_0 + b_1\text{BVPS} + e_{it} \dots\dots\dots (2)$$

All variables are the same as in equation (1). This estimation provides explanatory power ( $R_b^2$ ) of book value.

Third, this paper also estimates the equation (3) to obtain the explanatory power of residual earnings ( $R_c^2$ ).

$$\text{Price}_{it} = c_0 + c_1\text{RESID} + e_{it} \dots\dots\dots (3)$$

From those three estimations the incremental explanatory power of book value can be calculated by subtracting explanatory power of residual earnings ( $R_c^2$ ) from combined explanatory power ( $R_a^2$ ). Similarly, incremental explanatory power of residual earnings can be obtained by subtracting explanatory power of book value ( $R_b^2$ ) from combined explanatory power of both book value and residual earnings ( $R_a^2$ ).

**Sample**

A sample consists of 1657 firms listed at the Jakarta Stock Exchange (JSX) for the period of 1993-2001. Financial statement data were taken from the JSX

website including a nine year period starting from 1993 to 2001. Stock price data obtained from the Stock Price database prepared by the Center For Accounting Development, Faculty of Economics, Gadjah Mada University, Indonesia.

**Descriptive Statistics**

This section presents the data characteristics used in this study. Means, standard deviations of each variable are presented in Table 1.

**Table 1:** Means, standard deviations and correlations (using 1396 firm sample) The sample covers the period of 1993-2001 (full Sample)

	PRICE	BVPS	RESID
Means	2096.5	1631.7	-3044.8
Stand. Dev.	2369.7	1821.7	11312.
<b>Correlation matrix:</b>			
	PRICE	BVPS	RESID
PRICE	1.000	0.494	-0.0301
BVPS	0.495	1.00	-0.174
RESID	-0.03	-0.174	1.000

The means of residual earnings is negative suggests that many of firms in the sample suffers loss or some big firms adversely suffer loss. This is also consistent with the fact that since 1998 crisis many firms listed at the JSX has negative earnings. Additionally, Table 1 also contains the correlation among variables. There is no variable that is highly correlated one to another in this sample.

**RESULTS**

Following previous studies (Collins *et al.* 1997; Francis and Schipper 1999, and Graham and King, 2000 among others), this paper uses  $R^2$  as a measure of value relevance of accounting numbers.

**Table 2:**  $P_{it} = a_0 + a_1 BVPS_{it} + \beta_2 RESID_{it} + \varepsilon_t$

Year	$a_0$	$a_1$	$a_2$	$R_a^2$	N
1992	237.76 (0.23)	1.76 (5.57)	4.22 (2.67)	0.11	261
1993	3862.99 (6.83)***	0.62 (3.15)***	4.44 (4.94)***	0.24	121
1994	2144.45 (6.704)***	0.53 (5.939)***	3.76 (5.76)***	0.27	118
1995	1123 (4.461)***	0.57 (5.42)***	0.51 (0.69)	0.17	159
1996	1347 (7.06)***	0.47 (4.67)***	0.48 (1.19)	0.16	207
1997	1062.41 (6.29)***	0.51 (8.63)***	0.21 (1.26)	0.37	127
1998	635.68 (4.059)***	0.21 (2.72)**	-0.037 (-0.32)	0.15	160
1999	1220.93 (7.065)***	0.52 (4.074)***	0.11 (0.745)	0.37	152
2000	375.05 (6.56)***	0.76 (3.64)***	-0.004 (-0.601)	0.44	178
2001	248 (41.73)***	0.31 (5.0572)***	-0.00026 (-0.089)	0.31	174

\*\*\*Significant at 1% level; \*\*significant at 5% level and \*significant at 10% level

- $P_{it}$  = price per share of firm  $i$  at the end of year  $t$ ,
- $a_0$  = constant
- $a_1, a_2$  = slope of coefficient
- $BVPS_{it}$  = book value per share of firm  $i$  at the end of the year  $t$
- $RESID_{it}$  = Residual earnings of firm  $i$  at the end of the year  $t$
- $\varepsilon_{it}$  = error terms.

As presented at Table 2, combined value relevance of both book value and residual income increased steadily from  $R_a^2 = 0.11$  in 1993 to  $R_a^2 = 0.30$  in 2001. From 1993 to 1994 the increased almost tripled, however in 1995 the  $R_a^2$  decreased to only 0.14. This shock might be affected by the implementation of new accounting standards, the adoption the International Accounting Standards (IAS), that were enacted by 1995 by Indonesian Financial Accounting Standards Committee (IFASC). Starting fiscal year 1995, all the firms in Indonesia had to follow the new standards. In this tran-

sition process, there might many adjustments to be made in order to comply with the new standards hence the relevance of accounting numbers decreased. This adjustment process lasted until 1996 therefore the  $R_a^2$  decreased to a lower level in 1996. In 1997, the  $R_a^2$  increased significantly to the level  $R_a^2 = 0.37$ . In 1998, economic crisis stroke Indonesia, the value relevance of accounting numbers plummeted into the lowest level in the period of this study,  $R_a^2 = 0.15$ . A year after the crisis, however, the  $R_a^2$  increased again and reached the highest level,  $R_a^2 = 0.44$  in 2000.

**Table 3:**  $P_t = b_0 + b_1 \text{BVPS}_{it} + \varepsilon_t$

Year	$b_0$	$b_1$	$R_b^2$	N
1993	3854.789 (6.228)***	0.747 (3.541)***	0.087	121
1994	2986.147 (9.289)***	2.26 (3.042)***	0.066	118
1995	1059.924 (3.886)***	0.58 (5.531)***	0.16	159
1996	1267.79 (7.835)***	0.48 (0.482)**	0.16	207
1997	931.26 (6.991)***	0.52 (8.699)***	0.37	127
1998	668.984 (7.048)***	0.21 (5.442)***	0.15	160
1999	1204.60 (8.318)***	0.54 (9.551)***	0.37	152
2000	381.64 (2.540)*	0.81 (11.818)***	0.44	178
2001	359.68 (10.625)***	1.291 (8.007)***	0.31	174

**Table 4:**  $P_t = c_0 + c_1 \text{RESID}_{it} + \varepsilon_t$

Year	$c_0$	$c_1$	$R_c^2$	N
1993	5411.79 (18.616)	4.83 (5.329)***	0.18	121
1994	3608.34 (15.549)***	1.73 (2.731)***	0.052	118
1995	2396.95 (15.874)***	0.65 (1.996)**	0.018	159
1996	2218.45 (22.570)***	0.58 (2.000)**	0.014	207
1997	1896.34 (10.852)***	0.30 (1.412)***	0.007	127
1998	1008.82 (9.200)***	0.095 (1.036)	0.004	160
1999	1901.39 (12.63)***	0.486 (3.341)***	0.06	152
2000	619.55 (2.540)*	-0.0491 (-8.637)***	0.29	178
2001	330.57 (8.373)***	-0.0167 (-6.552)***	0.19	174

The value relevance of book value is presented in Table 3. In 1993 the  $R_b^2$  was 0.087, this number decreased in 1994 and increased dramatically in 1995, just a year prior to crisis the  $R_b^2$  reached the level of 0.37. In the 1998 crisis, the  $R_b^2$  was only

0.15 and increased again in the following years, and the highest level was  $R_a^2$  0.44 in 2000. In general the explanatory power of book value increased steadily during the study period.

**Table 5:** Incremental book value and residual earnings.

Year	$R_a^2$	$R_b^2$	$R_c^2$	$R_{book}^2$ ( $R^2 - R_b^2$ )	$R_{residual}^2$ ( $R^2 - R_b^2$ )
1993	0.24	0.087	0.18	0.06	0.153
1994	0.27	0.066	0.052	0.218	0.204
1995	0.17	0.16	0.018	0.152	0.10
1996	0.16	0.16	0.014	0.146	0.00
1997	0.37	0.37	0.007	0.363	0.00
1998	0.15	0.15	0.004	0.136	0.00
1999	0.37	0.37	0.06	0.31	0.00
2000	0.44	0.44	0.29	0.15	0.00
2001	0.31	0.31	0.19	0.11	0.00

In contrast to value relevance of book value, as can be seen in Table 4., value relevance of residual earnings decreased constantly during the period of 1993 to 1999, with the lowest level of  $R_c^2$  was 0.004 in 1998. In 2000 and 2001, the  $R_a^2$  were 0.29 and 0.19 respectively. The decrease in  $R_c^2$  might be due to the growing number of loss-firms in Indonesia, especially after the economic crisis.

In Table 5 shows that incremental explanatory power of book value  $R_{book}^2$  increased during the period of this study. The highest level of  $R_{book}^2$  was 0.36 in 1997 and 0.31 in 1999, just one year before and after the crisis hit Indonesia. Conversely, the incremental explanatory power of residual earning  $R_{residual}^2$  decreased steadily until the level of zero since 1996 until 2001. These findings are consistent with the previous works in the sense that the value relevance of book value tends to be higher for the lower earnings firms or loss firms.

## CONCLUSION

This paper has applied cross section regression technique to explore the value relevance of book value and residual earnings of firms listed at the JSX. The study finds that combined value relevance of both book value and residual earnings increased steadily during the study period, 1993-2001. This paper also reveals that the value rele-

vance of book value increased and became a key point of increasing combined value relevance, especially after the economic crisis in 1998. In contrast, value relevance of residual earnings was low and decreasing until 1999.

In general, the results of this study are consistent with the existing literatures. This paper also contributes to the literature by providing evidence of value relevance of accounting numbers in an emerging market, the Jakarta Stock Exchange. Moreover, this study also reveals the increasing trend in value relevance of accounting numbers over the period of study, except for the crisis year 1998.

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