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Fairness and Reciprocity in Earnings Management*

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Abstract

This paper test the hint that executives' decision to manage earnings is in a fairness and reciprocal context. A structural equation model with earnings management, shares' market price, executives' compensation, and three thresholds of fairness latent variables was tested empirically using the partial least squares (PLS) technique by implementing Smart PLS 2.0 (beta).

Using the unique BusinessWeek's core earnings data set, the results show that all of the hypotheses were supported. The structural equation model turned out to provide weak to moderate R^2s with latent exogenous variables' effect size to latent endogenous variables varied from weak to strong.

Keywords:
Earnings management; fairness; reciprocity; core earnings; partial least square; SmartPLS 2.0 (beta).

I. Introduction.

Though Beaver & Demski (1979) argued that true net income measurement may not exist in a world of complete and perfect markets, earnings provide important information for investment decisions. Market price of share fluctuates in anticipating reported earnings. Firms' earnings should exceed at least three thresholds of expectation: to report positive profits, to make at least last year's earnings; and to meet the analysts' consensus earnings forecast (Degeorge, Patel & Zeckhauzer, 1999). Market price of share tend to increase significantly when firms report earnings greater than expected or exceeded their most recent analysts' earnings forecasts (Bartov, Givoly & Hayn, 2002).

Conversely, market price of growth firms' share decrease sharply when they fail to meet expectations (Skinner & Sloan, 2002). The magnitude of share price decrease were significantly greater than the share price increase for firms that exceeded expectations, suggesting that market penalizes firms that fall short of expectations by more than it rewards firms that exceed them. These thresholds of expectation and market's reward and punishment sound like three important properties of prospect theory (Kahneman & Tversky, 1979) conversion from individual to mass behavior. As a result, this market behavior gives managers a strong incentive to meet earnings expectations, particularly if they hold executive share options (ESOs) or other share-related compensation. Managers may manage earnings upwards, or lowering down investors' expectations by actively try to influence analysts' expectations downward (Degeorge, Patel & Zeckhauser, 1999), or to use both approaches (Matsumoto, 2002).

Assuming that rational investors will be aware of this incentive then earnings management can be viewed in a framework of fairness and positive and negative reciprocity. Market will appreciate by increasing shares price when managers report earnings that exceed

thresholds of fairness, makes investors wealthier and willing to reward executives by increasing their compensation.

This paper utilize partial least square technique on a unique publicized data of core earnings in capturing dynamic interrelation between with firms' market performance and executive compensation. The use of new data of earnings management, structural equations technique and behavioral economics framework is argued to be the main contribution of this paper to academic literature. There are significant empirical evidences that executives manage earnings to exceed expectation and that executive compensation relative to market performance will limit earnings management.

The remainder of the paper is organized as follows. Section "Literature Review" presents a brief discussion on the prior literature review to build the model and hypotheses. Section "Research Design" describes the empirical method and data for investigation. Section "Findings" summarizes the estimated empirical statistics and its discussion; and finally Section "Conclusion" summarized and concludes the paper.

II. Literature Review

2.1. Earnings management.

Schipper (1989) defined earnings management as disclosure management in the sense of a purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain as opposed to, say, merely facilitating the neutral operation of the process. This definition limits the discussion in that it includes only the external reporting function and not, for example, managerial accounting reports or activities designed to influence or change *Generally Accepted Accounting Principles* (GAAP). Accommodating the perspective of standard setter, Healy & Wahlen (1999) defined earnings management as managers' use of

judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers.

Earnings management is common, though a controversial issue, in accounting practice and could take in several patterns. It is called "taking a bath" when managers reporting big loss during periods of organizational stress or reorganization for feeling that it has little to lose at this point. Besides, accruals reversal assets write-off will enhance the probability of future reported profits. Managers may minimize income during periods of high profitability. On the other hand, management may maximize income for bonus purposes (Healy, 1985; Kaplan, 1985; McNichols & Wilson, 1988; Holthausen, Larcker & Sloan, 1995) or avoiding violations of close debt covenant (Sweeney, 1994; DeFond & Jiambalvo, 1994; DeAngelo, DeAngelo, & Skinner, 1994; Graham, Harvey, & Rajgopal, 2005), or to decrease the costs imposed on the firm in transactions with stakeholders (Burgstahler & Dichev, 1997). Moreover, risk averse managers may report income smoothing over time so as to receive relatively constant bonus compensation.

Though some pushed earnings management too far to become a financial fraud, Generally Accepted Accounting Practice (GAAP) do not completely constrain managers' choices of accounting policies and procedures. Managers' accounting policy choices are often motivated by strategic considerations, such as meeting earnings expectations (Bartov, Givoly & Hayn, 2002; Skinner & Sloan, 2002), contracts that depend on financial accounting variables, new share issues (Hughes, 1986; Clarkson, Dontoh, Richardson, & Sefcik, 1992; Teoh, Welch, & Wong, 1998), discouraging potential competition, and unblocking of inside information (Demsky & Sappington, 1987, 1990; Gu & Li, 2007; Hirst, Koonce & Venkataraman, 2007).

Thus, earnings management is good (Stocken & Verrecchia, 2004; Evans & Sridhar, 1996; Dye, 1988; Chen, Hemmer, & Zhang, 2007; Subramayam, 1996; Sloan, 1996; Xie, 2001; Tucker & Zarowin, 2006; Jones, 1991; Liu, Ryan, & Wahlen, 1997; Barth, Elliott, & Finn, 1999; Callen & Segal, 2004; Francis, LaFond, Olsson, & Schipper, 2005) or bad (Dechow, Sloan, & Sweeney, 1996; Hanna, 1999; Elliott & Hanna, 1996; Leuz, Nanda & Wysocki, 2003) depends on how it is used. Some may argue that earnings management gives managers flexibility to react to unanticipated state realizations when contracts are rigid and incomplete, or that earnings management can serve as a vehicle for the credible communication of inside information to investors (Scott, 2006).

2.2. Fairness and reciprocity.

Conceptual parsimony typically attributed behavior of economic agents such like firms to the maximization of profits and portrayed human actors as self-interest seeking. Almost all economic models assume that all people are exclusively pursuing their material self-interest and do not care about "social" goals per se.

However, the traditional assumption that fairness is irrelevant to economic analysis is challenged. Akerlof (1979, 1982) and Solow (1980) have invoked a notion of fairness in their interpretations of the market phenomena of price and wage stickiness, respectively. Kahneman, Knetsch & Thaler (1986a, 1986b) elicited that willingness to enforce fairness is common and that the rules of fairness, though some of which are not obvious, help explain some anomalous market phenomena. Falk, Fehr & Fischbacher (2008) provided experimental evidence indicating that the attribution of fairness intentions is important in both the domains of negatively and positively reciprocal behavior. This means that equity models exclusively based on preferences over the distribution of material payoffs cannot capture reciprocal behavior. Models that take players' fairness intentions and distributional preferences into

account are consistent with their data, while models that focus exclusively on intentions or on the distribution of material payoffs are not.

Reciprocity, means people evaluate the kindness of an action not only by its consequences but also by the underlying intention and reward kind actions and punish unkind ones (Falk & Fischbacher, 2001),[1] constitutes a basic motivational drive and can account for a wide range of empirical phenomena as suggested by literature survey on large number of studies (Fehr & Gachter, 1998). According to Fehr & Schmidt (1999), economic environment turns out to determine whether the fair types or the selfish types dominate equilibrium behavior. Caring about equity by some people could resolve the puzzle of exploitation of bargaining power in competitive markets but not in bilateral bargaining situations, and exploitation of free-riding opportunities in voluntary cooperation games but not if there is opportunity to punish free riders (although punishment is costly for those who punish[2]).

A similar approach by Bolton & Ockenfels (2000) demonstrated that people are not only motivated by their pecuniary payoff as a self-interest seeking behavior but also by their relative payoff standing in a wide variety of laboratory games where equity is thought to be a factor, games where reciprocity is thought to play a role, and games where competitive behavior is observed. Theory of reciprocity helped in explaining the relevant stylized facts of a wide range of experimental games, why the same consequences trigger different reciprocal responses in different environments, and why in bilaterial interactions outcomes tend to be

[1] Fehr, Fischbacher & Gachter (2002) used similar definition of "strong" reciprocity means that many people have a tendency to voluntarily cooperate, if treated fairly, and to punish non-cooperator. A substantial number of people exhibit social preferences, which means they are not solely motivated by material self-interest but also care positively or negatively for the material payoffs of relevant reference agents.

[2] Andreoni, Harbaugh & Vesterlund (2002) found substantial demands for both punishments and rewards. While rewards alone have little influence on cooperation, punishments have some. The dramatic effect on cooperation when the two are combined suggesting that rewards and punishments are complements in producing cooperation. They conclude that the demands for rewards depend on the availability of punishments.

‘fair’ whereas in competitive markets even extremely unfair distributions may arise (Falk & Fischbacher, 2001).

Contrary to common beliefs, fairness concerns may play an important role even at relatively high stake levels (Fehr, Fischbacher & Tougareva, 2002), and work with reciprocity in real world. Buyers and suppliers in a large-scale survey by Forker & Stannack (2000) indicate to have smaller satisfaction gap within the competitive relationship than within the “cooperative” relationship because genuine competition in an open market guarantees reciprocity to prevail. If the price is perceived as being unreasonable for a product, the buyer can simply turn to another supplier to supply that same item. Norms of equity will be violated if adequate marketplace competition is either constrained or deficient. Prices charged in such a limited marketplace will appear to be biased to the buyer or supplier, and the disappointed firm's satisfaction with the exchange will be reduced.

According to Kahneman, Knetsch & Thaler (1986b), community standards for actions of fairness influencing the behavior of even profit-maximizing firms. Firms will have an incentive to act in a manner that is perceived as fair if the individuals with whom they deal are willing to resist unfair transactions and punish unfair firms at some cost to themselves. In customer or labor markets, it is acceptable for a firm to raise prices (or cut wages) when profits are threatened and to maintain prices when costs diminish. It is unfair to exploit shifts in demand by raising prices or cutting wages.

Reciprocity is an important determinant in the enforcement of contracts and social norms and enhances the possibilities of collective action greatly and may render the provision of explicit incentive inefficient because the incentives may crowd out voluntary cooperation. It strongly limits the effects of competition in markets with incomplete contracts, gives rise to noncompetitive wage differences, and hence is also a strong force contributing to the

existence of incomplete contracts (Fehr & Gachter, 2000[3]). Fehr & Gachter (2002) provided experimental evidence indicating that incentive contracts may undermine voluntary cooperation. This suggests that explicit incentives may have costly side effects that have been largely neglected by economists. The undermining effect in their experiments is so strong that the incentive contracts are less efficient than contracts without any incentives. The undermining of voluntary cooperation through incentives is, in principle, consistent with models of inequity aversion and reciprocity.

2.3. Model & Hypotheses.

Based on previous literatures an operational model is built as in figure 1. The model suggests that executives' effort to manage earnings may not be viewed as a mere ones' act of self interest though maximizing compensation was involved. Better it be viewed in a fairness and reciprocity framework.

If executives act in self interest they may manage earnings "to influence contractual outcomes that depend on reported accounting numbers" (Healy & Wahlen, 1999) with the "intent of obtaining some private gain" (Schipper, 1989). Then incentive compensation plan is one of those plausible contracts since, beside salary and bonus, more often it features equity-based compensation such as restricted stock and options that usually based on two performance measures – net income and share price. At this point, executives have incentive to manage earnings for market reward (Bartov, Givoly & Hayn, 2002) and to avoid market punishment (Skinner & Sloan, 2002) since market price of share fluctuates according to reported earnings. Therefore, we hypothesis as follow:

H1: Shares' market price has positive effect on earnings management.

[3] For a selective survey of experiments to investigate the potential of social motivations in explaining employment relations that are frequently governed by incomplete contracts, see Gachter & Fehr (2001)

Executives also have incentive to manage earnings to exceed thresholds of expectation (Degeorge, Patel & Zeckhauzer, 1999). In line with the proposition, we hypothesis as follow:

H2: Thresholds of fairness have positive effect on earnings management.

In line with Kahneman, Knetsch & Thaler (1986b) investors may perceive an increase in executive compensation as fair when reported earnings exceed these thresholds and market increases firm's share price. In accordance with the premise, we hypothesis as follows:

H3: Shares' market price has positive effect on executives' compensation.
H4: Thresholds of fairness have positive effect on executives' compensation.

However, rational investor will compare executives' compensation with firm performance and diversify their risk of investing too much on firms with too high executives compensation and poor firm performance. On the other hand, unlike shareholders, compensation contract may restrict managers' ability to diversify their risk away and makes them particularly sensitive to this risk since and so a limit will be naturally imposed on the incentive to earnings management for compensation maximization. Thus, we hypothesis as follows:

H5: Executives' compensation has negative effect on earnings management.

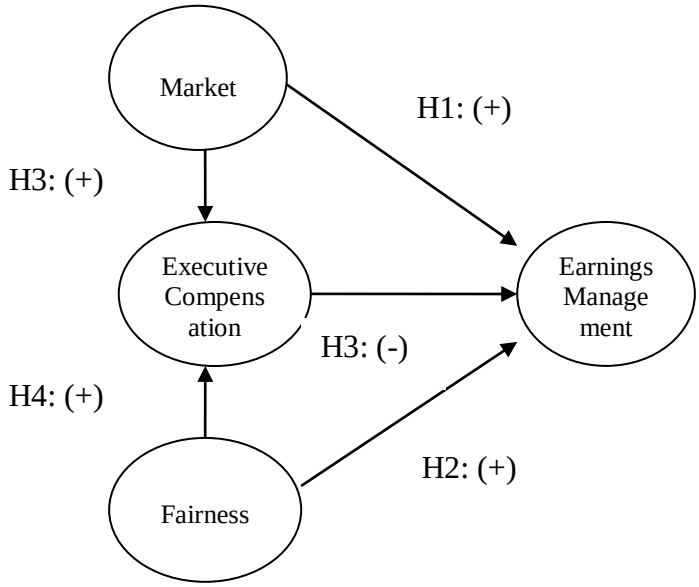

Figure 1. Fairness and Reciprocity in Earnings Management Model and Hypotheses

III. Research design.

3.1. Empirical method.

Trying to capture the dynamic interrelation of earnings management, market price of share, thresholds of fairness and executive compensation, the paper uses partial least squares (PLS) technique for several considerations: PLS' intuitive graphical representation; it's ability to accommodate small sample size for highly complex models with many latent variables of dependents as well as independents; it's ability to handle multicollinearity among the independents; it's no distributional assumptions and robustness in the face of data noise and missing data; and finally, it's ability in making explicit estimation of latent variable scores in exogenous and endogenous constructs.

PLS is a predictive technique which reduces the predictor variables (X) into principal components, as are the dependent variables (Y). The components of X are used to predict the scores on the Y components, and the predicted Y component scores are used to predict the actual values of the Y variables. In constructing the principal components of X, the PLS algorithm iteratively maximizes the strength of the relation of successive pairs of X and Y component scores by maximizing the covariance of each X-score with the Y variables. Smart PLS 2.0 beta software (Ringle at al., 2005) is implemented to do the calculation.

Assessment of internal consistency reliability, indicator reliability, convergence validity and discriminant validity were needed before PLS results evaluation. The paper use Cronbach's Alpha and Dillon-Goldstein's Rho, certainly two most prominent internal consistency reliability coefficients, to measures the reliability of a set of indicators. Cronbach's Alpha coefficient formula is written as follows.

$$\alpha = \frac{k}{k-1}\left(1 - \frac{\sum_{i=1}^{k}\sigma_i^2}{\sigma_t^2}\right)$$

Where k is number of indicators, σ^2_i is = variance of the i^{th} indicator, and σ^2_t is the variance of the summated indicators

Whereas Dillon-Goldstein's Rho coefficient was calculated using the following formula:

$$\rho_j = \frac{\left(\sum_{i=1}^{k_j}\lambda_{ij}\right)^2 \phi_{jj}}{\left(\sum_{i=1}^{k_j}\lambda_{ij}\right)^2 \phi_{jj} + \sum_{i=1}^{k_j}\theta_{ii}}$$

Where k_j is number of indicators, λ_{ij} is the loading of the i^{th} indicator, φ_{jj} is the empirical variance of the latent variable ξ_j, and θ_{ii} is the error variance of the i^{th} indicator.

Indicator reliability, measured between *0* and *1*, denotes the proportion of indicator variance that is explained by the respective latent variable. The formula to calculate the indicator reliability is as follow:

$$rel(x_i) = \frac{\lambda_{ij}^2 \phi_{jj}}{\lambda_{ij}^2 \phi_{jj} + \theta_{ii}}$$

Where x_i is indicator i, λ_{ij} is the loading of the i^{th} indicator, φ_{jj} is the empirical variance of the latent variable ξ_j, and θ_{ii} is the error variance of the i^{th} indicator.

To assess convergence validity, this paper uses the average variance extracted (AVE) which is comparable to the proportion of explained variance in factor analysis. The AVE of the j^{th} latent variable can be calculated using the following formula:

$$AVE_j = \frac{\phi_{jj}\sum_{i=1}^{k_j}\lambda_{ij}^2}{\phi_{jj}\sum_{i=1}^{k_j}\lambda_{ij}^2 + \sum_{i=1}^{k_j}\theta_{ii}}$$

Where k_j is number of indicators, λ_{ij} is the loading of the i^{th} indicator, φ_{jj} is the empirical variance of the latent variable ξ_j, and θ_{ii} is error variance of the i^{th} indicator

3.2. Data.

Sources of input for the calculation were *BusinessWeek* magazine' *S&P500 Core Earnings* (October 24, 2002) and *Executive Compensation Scoreboards* (April 21, 2003) data. Compensation data of CEOs or the first person listed in the scoreboard representing the company were used. Otherwise, the compensation data of the second person of the same company were used when CEOs' data unavailable or not representative in case of executive turnover. Matching the two sources resulted in 296 corporations as final data.

Instead of using calculation results from *Jones Model* (Jones, 1991) and its modifications (see for example, Dechow, Sloan, & Sweeney, 1995) this paper uses *Diff02*, measured in million US$, the difference of traditionally reported earnings to core earnings, both of same year 2002, as a single indicator of latent variable *Earnings management*. Though widely used, these models have been criticized to have major concern lies with the *type I* error (Ronen & Yaari, 2008) which indicates incorrectly occurrence of earnings management. On the other hand, core earnings[4] represent the difference between the revenue of a company's principal, or core, business and the costs and expenses associated with deriving that revenue. Hence, core earnings 2002 is a unique dataset as it measure earnings management more explicitly and are publicly available from *Standard & Poor's* through *BusinessWeek* magazine.

Invalue0200 was used as a single indicator to latent variable *Market performance of firms share*. Measured in US dollar, it represents the yearend 2002 US dollar value of US$100 invested in the company made three years earlier, including both share price appreciation and reinvested dividends. The latent variable *Executive compensation* also has a single indicator,

[4] Fore more information on *Standard & Poor's* core earnings see http://www.businessweek.com/investor/content/may2002/pi20020514_4676.htm?chan=search

Payperf0200. Measured on a scale of *1* through *5*; *5* indicates the best performance while *1* is the worst. These ratings show how an executive stacks up against peers, measured in terms of 2002 pay relative to total return to shareholders. The rating is based on an index in which the 2002 yearend value of the US$100 invested in three years earlier is divided by year 2002 total pay of the CEOs and then compared with other executives in the same industry. The top 15% of the sample receives a 5. The next 25% get a 4, 30% a 3, 20% a 2, and 10% a 1.

Three indicators form latent variable *Thresholds of fairness* according to Degeorge, Patel & Zeckhauzer (1999) who concluded that firms are expected to report positive profits, to make at least last year's earnings; and to meet the analysts' consensus earnings forecast. The first two thresholds represented by *Trad02*" and *Trad0*", traditionally reported earnings of year 2002 and 2001. Instead of using analysts' consensus, the last threshold is represented by *Expec02*. It equals to firm's traditionally reported earnings minus median reported earnings of its industry, both of 2002. All of these three indicators are measured in million US dollar.

Table 1 (see, appendix) shows number of sample firms in each of the ten industries with respective average and median reported earnings, year 2002. In the year, information technology is the single industry which tends to report loss. At the same time, seven out of ten industries' reported earnings distributions tend to be positively skewed.

IV. Findings.

4.1. Descriptive statistics and findings

Descriptive statistics (see table 2, appendix) shows that there are four and 18 missing values in *Invalue0200* and *Payperf0200* indicators, respectively. Hence, large negative number -999999999.9 was used to feed *Smart PLS 2.0* (beta) for these missing values. In case of all indicators' non-normality, platokurtic or leptokurtic as showed by

kurtosis, *Smart PLS 2.0* (beta) offers advantage of ability in handling non-normal indicators (Henseler, 2009).

Invalue0200 indicates that, in average, investors of the sample firms gained almost 5 times in year 2002 from their US$100 invested three years earlier. These gains came from shares' market price increase following sample firms tendency to report positive net earnings during year 2001 and 2002 as shown in *Trad01* and *Trad02*. Moreover, though some of sample firms reported loss, reported earnings of year 2002 tended to exceed expectation as measured by *Expec02* indicator. Positive average *Expec02* shows positively skewed sample firms' However, there are tendency that executives of sample firms managed earnings to maximize their reported earnings as shown in a positive mean of *Diff02* indicator, the difference between reported earnings and core earnings. Moreover, *Payperf02* indicates tendency that, compared to their peers, market performance of these executives were just slightly above average relative to the compensation they earned during the year 2002.

Thresholds of fairness, the only latent variable with more than one indicators, shows Cronbach's Alpha above 0.70 as the rule of thumb of acceptable internal consistency reliability and its Dillon-Goldstein's Rho coefficient goes inline with Cronbach's Alpha in showing high composite reliability of indicators. Besides, this latent variable shows AVE score higher than 0.5 as the rule of thumb for acceptable convergence of validity (Fornell & Larcker, 1981).

Moreover, table 3 shows that all square-root of the latent variables' AVE scores, written in bold in the diagonal, are higher than the construct correlation scores in the adjacent columns and rows, means acceptable discriminant validity (see table 3, appendix). Table 4 (see appendix) shows the three indicators of latent variable *Thresholds of fairness* have strong positive outer loadings with highly significance of *t*-statistics.

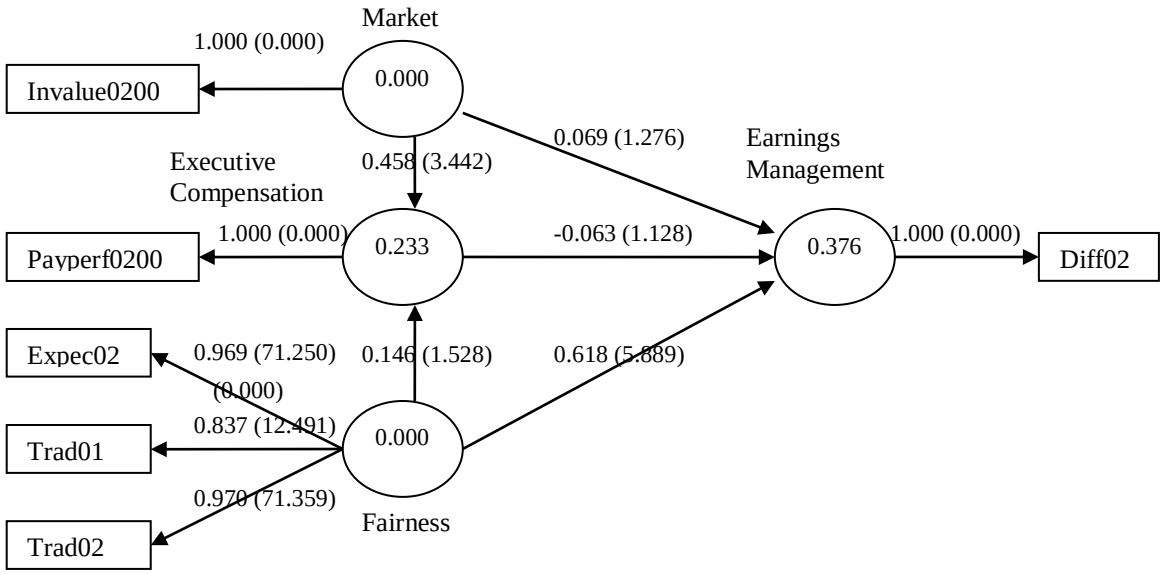

Figure 2 The model with PLS algorithm and Bootstrapping results

Having R^2 of 0.233 and 0.376, as shown in figure 2, latent endogenous variables *Executive compensation* and *Earnings management* are characterized as "weak to moderate" and "moderate", respectively (Chin, 1998)[5]. These R^2s indicate that 23.3% of the variance of the latent endogenous variable "Executive compensation" is explained by latent exogenous variables *Shares' market price* and *Thresholds of fairness*. Whilst 37.6% of the variance of the latent endogenous *Earnings management* is explained by the latent endogenous *Shares' market price*, *Executive compensation* and *Thresholds of fairness*. All the sign of the path coefficients are in accordance with the implied sign of relations in the hypotheses.

Table 5 (see appendix), however, shows that three path coefficients, *Shares' market price* (weight of 0.069) and *Executive compensation* (weight of -0.063) to *Earnings management*, and *Thresholds of fairness* (weight of 0.146) to *Executives' compensation* are insignificant with *t*-statistics (in brackets) less than 2. Whilst, path coefficients of latent

[5] Chin (1998) used 0.67, 0.33 and 0.19 as rule of thumb to characterized R^2 of latent endogenous variable as substantial, moderate or weak.

variables *Shares' market price* (weight 0,458) to *Executives' compensation* and *Thresholds of fairness* (weight of 0.618) to *Earnings management* show positive effects with significant *t*-statistics. These *t*-statistics to estimate the significance of the interrelations between latent endogenous and exogenous variables were provided using resampling techniques (Chin & Newsted, 1999) by the application of bootstrapping procedure (Efron & Tibshirani, 1993).

Effect size for each latent exogenous variable for the rate of reliability R^2 of the latent endogenous variable was measured using the Cohen's (1988; in Callaghan, Wilson, Ringle & Henseler, 2007) formula of $f^2 = (R^2_{included} - R^2_{excluded})/ (1 - R^2_{included})$. The calculation of f^2 involved keeping a latent variable in the model with all other latent variables and later manually deleted one at a time to calculate its $R^2_{included}$ and $R^2_{excluded}$, respectively. An f^2 of 0.35 or higher s interpreted as strong effect; around 0.15 as a moderate effect and 0.02 or less as weak effect. Table 6 (see Appendix) shows that *Thresholds of fairness* has strong effect-size on the latent endogenous variable *Earnings management* and *Shares' market price* has moderate effect-size on the latent endogenous variable *Executives' compensation*, while the rest of interrelations between latent endogenous and exogenous variables have weak effect-size.

Table 7 (see appendix) shows the predictive relevance Q^2, another criterion for the assessment of the structural model, measured using blindfolding procedures (Chin, 1998). If this value is positive then the latent exogenous variables have predictive relevance for the latent endogenous variable. It is shown that the Q^2 (0,0234) of the two latent exogenous variables *Shares' market price* and *Thresholds of fairness* is positive, means that both have predictive relevance for the latent endogenous variable *Executives' compensation*. However, latent endogenous variable *Earnings management*, all of the three latent exogenous variables have no predictive relevance for latent endogenous variable *Earnings management* as shown

by negative Q^2 (-0,0120). Moreover, table 7 shows q^2 to measure the predictive relevance for each latent exogenous variable which are all negative. Thus, the rate of reliability R^2 of the latent endogenous variable *Earnings management* and *Executives' compensation* are not substantially determined by a certain latent exogenous variable.

4.2. Discussion.

The finding of this study is in line to the intuitive hint that rather than a mere act of self-interest executives manage earnings as in a reciprocal decision. Hope for market reward in shares market price increase even as, especially, drive to avoid market punishment in greater magnitude of shares' market price decline give a strong incentive for executives to manage their firm's reported earnings (Bartov, Givoly & Hayn, 2002). Whereas, evidence from this paper shows that drive to exceed three thresholds of fairness give a stronger incentive for earnings management (Degeorge, Patel & Zeckhauzer, 1999). The evidence support Kahneman, Knetsch & Thaler (1986b), where community (i.e., market and investors) standards for actions of fairness (i.e., expectation) influencing the behavior of even profit-maximizing firms (i.e., earnings management).

The significant and substantial positive weight of *Shares' market price* effect on *Executives' compensation* shows the importance of comparing executives' compensation relative to their firms' share market performance. This is supported by the fact that executives tend to lessen their effort to manage earnings, as shown by the negative though less significant weight of "Executive's compensation" effect on *Earnings management*, as the market performance of their compensation are lower relative to their peers. Such a tendency, along with other factors such as strong internal or external auditors' independency, may reveal a natural limit in executives not to pushed earnings management decision too far.

The less significant positive weight of *Thresholds of fairness* effect on *Executives' compensation* may be affected by the power most executives exercise on firm's compensation committee in influencing the setting of their compensation plan less dependent on how their firms perform (Milkovich & Newman, 2004). A previous attempt with the same structural equation model but use components of executives' compensation such as salary and bonus, incentive compensation, and options compensation gave no better results than the current single indicator *Payperf0200* even appeared to have Cronbach's Alpha less than acceptance level for further analysis. However, such a less strong statistical evidence on firms' performance effect and executives' compensation relation is no surprise (see for example Sloan, 1993; Aggarwal & Samwick, 1999; and Watts, 2003).

V. Conclusion.

Earnings management as disclosure management, in the sense of a purposeful intervention in the external financial reporting process, is a common practice but controversial issue firms' accounting practice. It could take in several patterns though maximizing earnings is the most common. Though some pushed earnings management too far to become a financial fraud, *Generally Accepted Accounting Practice* (GAAP) do not completely constrain managers' choices of accounting policies and procedures. Motivated by several strategic considerations, executives' compensation may be the most common cited drive behind earnings management, though. This made earnings management more liked executives' self-interest act than anything else. The objective of this paper is to empirically test the hint that executives decision to manage earnings is in fairness and reciprocal context.

This paper's contributions are in its use of behavioral modeling, the predictive technique, and the data to test the model empirically. It utilized structural equation model of earnings management as latent endogenous variable and shares' market price, executives'

compensation, and three thresholds of fairness as latent exogenous variable. Executives' compensation itself is modeled as latent endogenous variable affected by latent exogenous variables shares' market price and thresholds of fairness. The structural equation model was tested using the partial least squares (PLS) technique by implementing *Smart PLS 2.0* (beta) software on a set of unique data of earnings management which are more explicit in measuring earnings management and are publicly available. All of the hypotheses were supported by the data though three out of five with less statistical significance. The structural equation model turned out to provide weak to moderate R^2s with latent exogenous variables' effect size to latent endogenous variables varied from weak to strong. However, as q^2 the measure of the predictive relevance for each latent exogenous variable are all negative, thus, the rate of reliability R^2 of the latent endogenous variables are not substantially determined by a certain latent exogenous variable. The generalibility of the findings in this paper may be limited and time dependent because it use brief, one year 2002 only, data of core earnings. Hence, a further study with extended period of observation to capture the dynamic of earnings management decision over time is suggested.

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Appendix

Table 1: Mean and Median of Reported Earnings, Year 2002

Industry	Samples	Mean	Median
Consumer discretionary	46	216,8522	224,9
Consumer staples	21	1095,814	522
Energy	14	226,5714	330,8
Financials	60	1292,068	612,8
Health Care	27	1537,085	601,8
Industrials	43	787,5698	296,3
Information Technology	40	-660,163	33,3
Materials	20	346,37	138,5
Telecommunication	6	764,2833	262,85
Utilities	19	676,4	496
Total	296	631.79	319.90

Table 2: Descriptive statistics of indicators

	Diff02	Expec02	Invalue0200	Payper0200	Trad01	Trad02
N valid	296	296	292	278	296	296
Minimum	-3372,8	-16531,3	3	1	-56121,9	-16498
Maximum	5415,6	15317,2	493	5	14284	15930
Mean	174,0047	270,977	105,4486	3,053957	431,4277	631,7851
Standard deviation	583,625	2117,743	64,01756	1,183812	3835,139	2167,865
Skewness	2,683606	1,00183	1,655258	-0,07864	-10,718	0,866616
Kurtosis	36,88501	30,96676	6,220735	-0,81253	162,6837	29,67336

Table 3: Reliability Statistics

	Earnings Management	Executive Compensation	Fairness	Market	Composite Reliability	Cronbach's Alpha	AVE
Earnings Management	**1.0000**				1.0000	1.0000	1.0000
Executive Compensation	0.0635	**1.0000**			1.0000	1.0000	1.0000
Fairness	0.6091	0.1533	**0.9276**		0.9485	0.9166	0.8605
Market	0.0500	0.4600	0.0157	**1.0000**	1.0000	1.0000	1.0000

Note: Bold numbers on the diagonal show the square root of the AVE scores; numbers below the diagonal represent construct correlations.

Table 4: Factor loadings and their significance

Indicators in the reflective measurement model	Originally predicted values	Mean (bootstrap)	Standard deviation	*t*-value
Firms' reported earnings over industry's median, year 2002	0.9691	0.9769	0.0138	71.250
Firms' traditionally reported earnings, year 2001	0.8371	0.8925	0.0665	12.491
Firms' traditionally reported earnings,	0.9704	0.9781	0.0138	71.359

year 2002				

Table 5: Significance of the estimated coefficients in the structured model

Latent exogenous variable	Originally predicted values	Mean (bootstrap)	Standard deviation	*t*-value
Effect of shares' market price on earnings management	0.0693	0.0616	0.0517	1.3404
Effect of thresholds of fairness on earnings management	0.6177	0.6154	0.1057	5.8441
Effect of executives' compensation on earnings management	-0.0630	-0.0553	0.0553	1.1384
Effect of shares' market price on executives' compensation	0.4577	0.4430	0.1281	3.5738
Effect of thresholds of fairness on executives' compensation	0.1461	0.1435	0.0900	1.6239

Table 6: Weight of the latent exogeneous variables

Latent exogenous variable	R^2 (included)	R^2 (excluded)	Effect-size f^2
Effect of shares' market price on earnings management	0.3757	0.3719	0.0061
Effect of thresholds of fairness on earnings management	0.3757	0.0046	0.5944
Effect of executives' compensation on earnings management	0.3757	0.3729	0.0045
Effect of shares' market price on executives' compensation	0.2329	0.0235	0.2730
Effect of thresholds of fairness on executives' compensation	0.2329	0.2116	0.0278

Table 7: Prognosis-relevance of the latent exogeneous variables

Latent exogenous variable	Q^2 (included)	Q^2 (excluded)	q^2
Effect of shares' market price on earnings management	-0.0120	-0.0048	-0.0071
Effect of thresholds of fairness on earnings management	-0.0120	0.0039	-0.0157
Effect of executives' compensation on earnings management	-0.0120	0.3713	-0.3787
Effect of shares' market price on executives' compensation	0.0234	0.0235	-1.02e-4
Effect of thresholds of fairness on executives' compensation	0.0234	0.2116	-0.1927