"No Response" Instead Of Stock Recommendations: Evidence From Korea

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ABSTRACT

The objectives of this study are to confirm the theories and findings of empirical research related to stock recommendations in analysts' reports and to examine from various angles the significance of stock recommendation revisions in the Korean capital market. In a considerable number of analysts' reports, no stock recommendations are made; this area of the report remains blank. In this study, the blank is labeled "No Response". We analyze the factors related to the decision to omit stock recommendations and the informational content of analysts' reports in which no stock recommendations are made. There is no previous research on this phenomenon in Korea or other countries. Under the assumptions that the optimum portfolio of investors is affected by the trading of stocks, and that analysts' reports reflect market expectations, we investigate the informational content of reports in which no stock recommendations are made by observing the abnormal returns on the day of disclosure.

Keywords: Stock Recommendations; No response; Recommendation Revision

INTRODUCTION

The objectives of this study are to confirm theories and findings of previous empirical research on stock recommendations in analysts' reports, and to examine the significance of revisions to stock recommendations in the Korean capital market from various points of view. Analysts act as information intermediaries in the capital market, and their reports alleviate the information asymmetry between enterprises and information users (Asquith *et al*., 2005). These reports provide critical help to studies of the capital market because they provide useful insight into and understanding of the behavior of market participants that is difficult to observe directly. Since analysts offer earnings forecasts and stock recommendations for many enterprises in their reports, the accuracy of the forecasting activities they provide directly affects the reputation and determines the reward of those firms. Investors also make decisions about individual investments and evaluate the performance of analysts and firms in which they own stock based on the accuracy of the data provided in analysts' reports. From the viewpoint of investors, not that of the capital market, specific investment decision-making is based on analysts' reports. Potential investors either buy company stocks or adopt a wait-and-see attitude depending on what they learn from these reports. Stockholders exhibit specific behavioral patterns such as selling their stocks or reducing their holdings based on these reports. Thus, many decisions may be based on the forecasts of analysts, and behavioral patterns may also vary according to analysts' specific stock recommendations.

In this study, an overview is provided of earnings forecasts and stock recommendations of analysts as information intermediaries in the Korean capital market. Several studies have systematically examined the effects of report content on capital markets, the characteristics of earnings forecasts, and the accuracy of analysts' earnings forecasts. Factors influencing decision-making have also been well studied. In addition, many studies on stock recommendations have focused on the informational content of stock recommendations. However, no systematic analysis of the characteristics of stock recommendations and related decision-making factors has been conducted.

Five stock recommendations have been identified in previous studies: "Strong Buy", "Buy", "Hold", "Underweight", and "Sell". These are commonly used in analysts' reports. In a sizable percentage of these reports, however, no stock recommendation is made; this area of the report is left blank (4.55%). In this study, a blank stock

recommendation is defined as "No Response," and the decision-making process behind this lack of response and informational content of reports in which this phenomenon is observed are analyzed. The FnGuide database provides the data for all analysts' reports regardless of content (i.e., whether or not they contain earnings forecasts and stock recommendations). Therefore, the FnGuide provides us with all information relevant to a firm, including the disclosure dates of the reports containing no stock recommendations ("No Response"). The data from the Institutional Brokers Estimate System, which are commonly used in conventional stock recommendation studies, provide information only for cases in which the stock recommendations of individual analysts have been altered. To the best of our knowledge, no studies have been conducted on the lack of stock recommendations in analysts' reports in Korea or elsewhere. In this study, the factors influencing analysts to leave the stock recommendations area of a report blank are examined for the first time.

RELATED RESEARCH AND HYPOTHESES DEVELOPMENT

Previous Studies

Stock recommendations by analysts provide summary information about the intrinsic value of a company. In previous studies, informational content was verified by the abnormal returns obtained when an investment was made according to stock recommendations. Womack (1996) and Elton *et al.* (1986) reported that high abnormal returns could be obtained for six months after analysts gave the "Buy" recommendation or the recommendation grade was raised. Barber *et al.* (2001) used a consensus of stock investment grades from analysts and showed that high investment returns could be obtained by establishing a "Buy" portfolio including companies with the highest consensus and a "Sell" portfolio including companies with the lowest consensus. In Korean studies, Kim and Eum (2006) verified that the effects of stock recommendations and adjustment are already reflected in the target stock price, and that changes in stock recommendations result in a greater stock price reaction. Jeong and Lim (2005) showed that cumulative abnormal returns are dependent on the stock recommendations of analysts and their earnings forecasts, and that a high cumulative abnormal return is achieved when a "Buy" recommendation and high earnings forecasts are issued simultaneously. In summary, the results of Korean and international studies are similar in that the usefulness of stock recommendations corresponds significantly to the stock price at the time of disclosure. This suggests that analysts' reports can be used as a strategic index during investor decision-making about investment in a specific stock.

Other studies have investigated the role of consensus information in achieving excess returns based on the stock recommendations of analysts. Stock recommendation consensus can be expressed as a numerical value: the average value for stock recommendations during a certain period for a specific company. Jegadeesh *et al.* (2004) showed that a positive abnormal return could be obtained by establishing a portfolio using consensus values, but they concluded that the earnings rate was insufficient if future earnings rates and other reliable variables were extracted. Kho and Kim (2007) showed that no abnormal return could be achieved when the portfolio was established using a consensus of information on "Sell" and "Buy" recommendations in the Korean capital market. They also pointed out that a conflict of interest exists in the business relationship between analysts and companies with regard to the tendency always to recommend "Buy." In situations where the major recommendation is "Buy," the consensus stock recommendation may not have additional informational content. However, if the qualitative characteristics of stock recommendations are controlled so that genuine "Buy" and "Sell" recommendations can be distinguished, the consensus information may have additional value. Most previous studies have focused on the informational content of the recommendation grade, the grade change itself, or the consensus. This is the first study to investigate the factors related to the decision to provide "No Response", or to leave the stock recommendation blank in analysts' forecast reports. The following section presents the hypotheses of this study and provides a more detailed explanation.

Hypotheses

Stock recommendations by analysts contain various kinds of information needed in the capital market. The existence of stock recommendations in itself provides information on the capital market (Kim and Eum, 2006). In most cases (90.90%), analysts simultaneously disclose stock recommendations and changes in earnings forecasts relevant to the performance of a certain company. Most previous studies examined market reaction with reference to

the day the earnings forecast was issued or the day that stock recommendations were disclosed. Similarly, in this study, informational content is analyzed based on abnormal returns with reference to the day the analyst report is disclosed.

The general structures of the stock recommendations of corporate analysts may differ for each firm. However, previous studies conducted in and outside Korea have shown that recommendations may be generally classified into five grades, and that complexity in the terms of the various investment grades of different stock firms has no significant influence on the stock price response (Lee and Choi, 2003). Table 1 shows the five types of stock recommendations by individual stock firms classified in the FnGuide: "Strong Buy," "Buy," "Hold," Underweight," and "Sell." This same system is applied in this study for the purposes of the analysis.

Table 1. Classification of Stock Recommendations

Types of Stock Recommendations	Grade	Classified Recommendation
Positive Buy / Continue Positive Buy / Concentrate Buy / Strong Buy	5	Strong Buy
Short-Term Buy / Buy / Prospective Buy / Maintain Buy / Continued Buy / Split Buy / Overweight / Over Earnings Rate / New Buy / Newcomer / Long-Term Buy Long And Short-Term Buy / Low Price Buy / Conditional Buy / Mid-Term Buy / Mid-And Long-Term Buy Mid- And Long-Term Bottom Buy / Prospective Investment / Accumulate / Add / Buy Continue Buy / Long-Term Buy / Outperform / Overperformer Overweight / Short-Term Buy / Trading Buy / Tr Buy / Recommended List	4	Buy
Wait-And-See / Short-Term Hold / Short-Term Neutral / Hold Buying / Hold / Market Wait-And-See Market Average / Maintain / Long-Term Wait-And-See / Long-Term Hold / Neutral / Hold Continue Hold / Marketperform / Marketperformer / Neutral	3	Hold
Underweight / Below Market / Below Average / Marketunderperform Marketunderperformer / Reduce / Underperform Underperformer / Underweight	2	Underweight
Strong Sell / Sell / Short-Term Sell / Sell	1	Sell

However, unlike in previous studies, the conditions under which a report is filed in which the stock recommendation remains blank are also considered in this study, and "No Response" is included as one of the classifications.

Analysts provide various kinds of forecast information using their information-gathering and forecasting abilities, which are superior to those of general investors. Information users make investment decisions based on the forecast information provided by analysts (Givoly and Lakonishok, 1979; Jeong and Lim, 2005). Analysts analyze public information that is available to everyone in the market using their professional forecasting capabilities. Analysts acquire information from managers through company visits and interviews. Due to information asymmetry between managers and external information users, financial analysts' reports constitute a very important source of private information. Analysts know the importance of these reports, and strive to provide good recommendations. Therefore, in the absence of an alternative motive for leaving the stock recommendation blank, we can speculate that choosing the "No Response" option indicates that the analyst has insufficient information. Analysts must take into account the effect of their recommendations on their reputation because their performance is evaluated based on the accuracy of their analysts' reports. If analysts are not confident of their own forecasts due to lack of information about a company, they may leave the stock recommendation blank. For analysts to make accurate forecasts, both public data and private information about the insider are necessary. More accurate analysts' reports alleviate the information asymmetry between general investors and companies. However, access to private information differs among individual analysts and the agencies to which they belong. According to the structure of capital markets, market expectations are formed through stock recommendations. Therefore, an analyst working for an affiliated broker (a Chaebol) may be able to gather more private information on the broker's affiliated companies. These analysts are in a superior informational position. They may use the "No Response" recommendation less often due to their abundance of public and private information about companies.

Analysts' forecasts depend on both the quantity of public and private information and the ability to interpret that information. Mikhail *et al*. (1997), Clement (1999), and Jacob *et al*. (1999) reported that concerns about experience, ability, and task complexity and environmental factors related to analyst agencies affect the accuracy of the earnings forecast. The specific results of these studies showed an association between continuous service years (analysts with many years of working experience) and high accuracy in earnings forecasts. Stickel (1992) reported that analysts who were awarded for their work made more accurate earnings forecasts than those of other analysts who had not been rewarded. In addition, changes in earnings forecasts had a greater effect on stock prices. Leone and Wu (2002) also reported that analysts with superior earnings forecasting abilities were more likely to be selected for their superior skills, and that their strong abilities were maintained even after their selection. This suggests that the earnings forecasts calculated by the best analysts may be used more often by investors. Thus, analysts with long service careers or those who are rewarded for their superior work produce higher-quality reports because of their superior personal ability to interpret the given information. Therefore, due to their superior ability, these analysts are expected to leave the stock recommendation blank less often. Based on these observations, the following hypotheses are put forward.

Hypothesis 1-1: An analyst who is in a Chaebol (an affiliated brokerage) will leave the stock recommendation blank ("No Response") less frequently than one who is not in a Chaebol.

Hypothesis 1-2: An analyst with superior forecasting ability will leave the stock recommendation blank ("No Response") less frequently than one without superior forecasting ability.

According to Grossman (1981) and Milgrom (1981), if sellers have access to better information about product quality than their consumers and the cost of verifiably disclosing this information is zero, sellers will always disclose. This occurs because rational consumers will associate non-disclosure with the lowest quality. These studies showed that managers may not be willing to provide certain types of information in certain circumstances. However, in these studies, the statistical analysis was limited to specific events where the managers consistently gave no response. On the other hand, in cases where analysts omit certain information from their analysts' reports, as in this study, the date of the "No Response" event can be determined and all other information except the stock recommendation can be verified. Thus, the reaction of investors to the "No Response" recommendation can be directly observed. Market reaction to "No Response" can also be monitored. In this study, the reaction of investors to "No Response," which has hitherto been proven only theoretically, is actually verified. Hence, another hypothesis is established:

Hypothesis 1-3: Change in the stock recommendation from a grade to "No Response" has informational content.

RESEARCH DESIGN

Variable Settings

Ratio of "No Response" to Other Recommendations

In order to measure how often a specific analyst leaves the stock recommendation blank (i.e., "No Response") with regard to a given company, the variable $Null_{cons}$ is defined. The data for the variable $Null_{cons}$ are established for all analysts, companies, and years. Thus, the variable reflects the number of "No Response" instances for each analyst with regard to each analyzed company in each year divided by the number of analysts' reports. The ratio of "No Response" to other stock recommendations in the disclosed analysts' reports is higher for analysts with large values for $Null_{cons}$. The value of this variable is 0.1 if the "No Response" option is chosen in one out of ten reports. The variable $Null_{cons}$ is defined as follows.

$Null_{cons}$ **:** (The number of reports in which "No Response" is chosen by an analyst for a given company in a given year) / (The total number of reports for a given company in the same year)

Cumulative Abnormal Return

In this study, the cumulative abnormal return (*CAR*) is defined as follows, and the following market-adjusted model is used in which the market return is benchmarked.

$$AR_{it} = R_{it} - R_{mt} \quad (1)$$

R_{it} : the stock return of company *i* on day *t*
R_{mt} : the stock return of the market portfolio on day *t*

The abnormal return of individual sample companies (AR_{it}) computed in the equation above is accumulated to calculate *CAR*, as shown in the following equation:

$$CAR(t_1, t_2) = \sum AR_t \quad (2)$$

This calculation of *CAR* is used as a dependent variable in the model to test Hypothesis 1-3 in order to verify the informational content of the change in recommendation to "No Response." Assuming an efficient stock market, the stock price reflects all disclosed information of the past and present. In this study, it is assumed that the information used to create the stock recommendations disclosed by analysts is immediately reflected in the stock price. Hence, a relatively narrow time window (−1, 0 and +1 day) is set for the analysis to verify the variables for informational content and changes in the stock return.

Chaebol Affiliation Dummy

Chaebol groups in this study include the thirty largest business groups identified by the Korea Fair Trade Commission. The forecasting activities of analysts are affected not only by personal factors such as the number of years of service and forecasting experience in specific industries and companies, but also by the characteristics of the firms to which the analysts belong, the stakeholder relationship between the affiliated stock firms and the target companies of the analysis, and the characteristics of the ownership structure and governance structure of the analyzed companies (Mikhail *et al*., 1997; Clement, 1999; Jacob *et al*., 1999). Analysts are generally affiliated with firms that publish financial reports. They are evaluated by the very firms that they analyze. Hence, they have access to private information about the firms they analyze. Companies affiliated with business groups (known as Chaebols in Korea) may all be evaluated by the same analyst, who is familiar with the insiders of the group. For example, an analyst working for Samsung Securities Co., Ltd. may provide very effective analyses due to access to private information during the analysis of the parent company, Samsung Electronics. Therefore, in this study, a proxy is utilized for the information environment of the analyst in the form of the variable $ChaeAff_{dum}$, as follows:

***$ChaeAff_{dum}$*:** 1 if an analyst affiliated with a stock firm belonging to a Chaebol group reports on the stock recommendation for a company in the same Chaebol group; 0, otherwise.

Ability

In this study, the number of years of service and analyst ranking are used as measures of forecasting ability. Mikhail *et al*. (1997), Clement (1999), and Jacob *et al*. (1999) showed that the earnings forecasts of analysts with many years of experience (continuous service years) were highly accurate due to their skill at performing forecasting activities repeatedly. Thus, the variable $Anal_{age}$ is defined in this study as follows:

***$Anal_{age}$*:** continuous service years as an analyst

Analyst reputation is measured based on the ranking of analysts in each industry as published in the *Maekyung Economy* magazine, the *Maeil Business Newspaper*, the *Hankyung Business Weekly*, and the *Korea Economic Daily* newspaper. These weekly magazines publish rankings data twice a year. Rankings for the first half of the year are published in July based on the achievements of analysts between January and June, and those for the second half of the year are published in January based on their achievements between July and December. The top five analysts in each industry are generally recognized in business circles and the media as powerful "star" analysts

among all analysts, institutional investors, and private investors in the same industry. Accordingly, the top five analysts in each industry, based on their achievements throughout a given year during the study period, are operationally defined as high-reputation analysts in this study.

Stickel (1992) and Leone and Wu (2002) reported that analysts with superior earnings forecasting ability were more likely to be selected as top analysts. In those studies, the superior earnings forecasting ability of top analysts was maintained even after their selection. Therefore, in this study, analysts selected as top analysts in the year immediately preceding a given year are assumed to be in a superior position to analyze data for that year. Because selection as a top analyst is an *ex post* process following the submission of analysts' reports, these analysts may have better access to the information of target companies thereafter. The variable *Best* is therefore used to measure access convenience, defined as follows:

***Best*:** 1 if a company is analyzed by a high-reputation analyst, and 0 otherwise.

"No Response" Alteration Dummy

The specific definition of the independent variable $Null_{dum}$ to test Hypothesis 1-3 is as follows. As mentioned in the Introduction, stock recommendations are classified into five types: "S/Buy", "Buy", "Hold", "U/Weight", and "Sell". To test the informational content of a change to "No Response," cases are classified based on these five recommendations. The following five variables are defined individually for changes from each of these recommendations to "No Response." The independent variable $Null_{dum}$ is set to verify the change to "No Response."

***Null*$_{dum1}$:** 1, if the immediately previous recommendation was S/Buy and the current recommendation is "No Response"; 0, otherwise.

***Null*$_{dum2}$:** 1, if the immediately previous recommendation was Buy and the current recommendation is "No Response"; 0, otherwise.

***Null*$_{dum3}$:** 1, if the immediately previous recommendation was Hold and the current recommendation is "No Response"; 0, otherwise.

***Null*$_{dum4}$:** 1, if the immediately previous recommendation was U/Weight and the current recommendation is "No Response"; 0, otherwise.

***Null*$_{dum5}$:** 1, if the immediately previous recommendation was Sell and the current recommendation is "No Response"; 0, otherwise.

Regression Analysis Model

The following multiple regression equation is utilized to test Hypotheses 1-1 and 1-2. The model is designed to test the hypothesis that analysts in better information environments and those with superior ability change the stock recommendation to "No Response" less frequently than other analysts.

$$Null_{cons} = a_0 + a_1\ ChaeAff_{dum} + a_2\ MV + a_3\ LEV + a_4\ ROE + a_5\ NGE + a_6\ BETA + a_7\ Coverage + a_8\ D\_EPS\_FORE + a_9\ D\_PRICE\_FORE + a_{10}\ KOSPI + e \quad (3)$$

$$Null_{cons} = a_0 + a_1\ Anal_{age} + a_2\ MV + a_3\ LEV + a_4\ ROE + a_5\ NGE + a_6\ BETA + a_7\ Coverage + a_8\ D\_EPS\_FORE + a_9\ D\_PRICE\_FORE + a_{10}\ KOSPI + e \quad (4)$$

$$Null_{cons} = a_0 + a_1\ Best + a_2\ MV + a_3\ LEV + a_4\ ROE + a_5\ NGE + a_6\ BETA + a_7\ Coverage + a_8\ D\_EPS\_FORE + a_9\ D\_PRICE\_FORE + a_{10}\ KOSPI + e \quad (5)$$

The dependent variable is $Null_{cons}$, as described earlier, which captures the ratio of "No Response" recommendations to other stock recommendations. The information environment is measured using the variable

$ChaeAff_{dum}$, and ability is tested using the variables $Anal_{aqe}$ and *Best*. If the coefficient of a_1 in regression equations (3)–(5) is significant and negative, analysts in poorer information environments and those with inferior forecasting ability are more likely to give the "No Response" recommendation.

Factors that are expected to affect the "No Response" ratio include the total market value (*MV*), debt ratio (*LEV*), return on equity (*ROE*), reports of loss (*NGE*), *BETA*, coverage (*Coverage*), EPS (earnings per share) revision rate (*EPS*), and stock price revision rate (*PRICE*). *MV*, *LEV*, *NGE*, and *BETA* were chosen to control for the information environment of the target company of the analyst. If a company's total market price is low and the debt ratio is high, and if the company has reported a loss, the information environment of the company may be better than otherwise. If the value of *BETA* is greater, market volatility may be higher, and thus the information about that business may be less certain.

Several previous studies utilized analyst coverage as a proxy for the information environment of a company (McNichols and O'Brien, 1997; Lang *et al*., 2006). In this study, we posit that the "No Response" option will be chosen less frequently by analysts of companies with greater coverage. *ROE* is the index that indicates the size of the return in comparison with the input equity capital. In this study, *ROE* is used to control for the return of a target company.

In addition to stock recommendations, analysts' reports contain earnings forecasts and stock price forecasts. These control variables are set using the ratio of change with reference to the forecasted values immediately previous to a given forecast in order to control for changes in the earnings and stock price forecasts.

The multiple regression equation used to test Hypothesis 1-3 is as follows. As described above, the independent variable, $Null_{dum}$, verifies a change to the "No Response" option from one of the five previously described stock recommendations. The study model and the individual control variables are therefore defined as follows:

$$CAR_{(-1,1)} = a_0 + a_1\, Null_{dum} + a_2\, MV + a_3\, LEV + a_4\, ROE + a_5\, NGE + a_6\, BETA + a_7\, Coverage + a_8\, D\_EPS\_FORE + a_9\, D\_PRICE\_FORE + a_{10}\, KOSPI + e \quad (6)$$

The major financial characteristics are the total market value (*MV*), debt ratio (*LEV*), return on equity (*ROE*), reports of loss (*NGE*), *BETA*, coverage (*Coverage*), EPS (earnings per share) revision rate (*EPS*), and stock price revision rate (*PRICE*). These variables have been employed in previous studies. The debt ratio is included among the variables in order to control for cases in which the influence of disclosures from companies with high debt ratios on the stock market return is insignificant or relatively weak (Aboody *et al*., 1999). The total market value is included to control for the effect of a company's information environment on the stock market return (Collins and Kothari, 1989). Conflicting results in previous research precluded advanced determination of the sign of the effect of the debt ratio and total assets on the market reaction. Reports of loss are included in order to confirm the results of a previous study, which stated that positive and negative accounts differ in quality (Hayn, 1995). *BETA*, which is derived from the monthly stock market return, is used to measure risk. A higher value for *BETA* suggests a negative regression coefficient due to greater uncertainty about a firm's future expected rate of return and the corresponding market reaction (Kim *et al*., 2013). Because analyst coverage is used as a proxy for the information environment, higher coverage (indicating a better information environment) results in a stronger short-term market reaction in an efficient market. *ROE*, the index representing the earnings rate with reference to equity capital, is used to control for the rate of return of the target companies. As in the model for Hypotheses 1-1 and 1-2, the control variables are set using the ratio of change with reference to the forecasted values immediately previous to a given forecast in order to control for changes in earnings and stock price forecasts.

Sample Description

The observations are selected from firms listed on the KOSPI and KOSDAQ markets as of December 31, 2011 that satisfy the following criteria: (1) companies (except financial companies) listed on the KOSPI and KOSDAQ markets with accounts closing in December; (2) companies with financial statements, stock prices, and analyst forecasts available in the Fn-DataguidePro and KIS-VALUE databases.

Data for twelve years (2000 to 2011) are used that satisfy the above conditions. To minimize the effect of outliers, the top and bottom 1% of values for all independent and dependent variables are winsorized. In total, 46,115 firm-year-analyst observations are used for testing Hypotheses 1-1 and 1-2. An additional 381,235 firm-year-analyst reporting event date observations are also used for testing Hypothesis 1-3.

RESULTS

Descriptive Statistics

The descriptive statistics for each group are shown in Panels A and B of Table 2. This table presents mean, median, standard deviation, minimum, and maximum values. The observation period is from 2000 to 2011. All key variables are described herein.

In Panel A, the dependent variable is $Null_{cons}$, which is measured based on analyses listed in the Fn-DataGuidePro. $Null_{cons}$ has a mean (median) value of 0.1357 (0.0000) and maximum and minimum values of 1 and 0, respectively. The mean (median) of the Chaebol-affiliated dummy ($ChaeAff_{dum}$) variable is 0.0124 (0.0000). The mean (median) value of the best analyst dummy (*Best*) is 0.1835 (0.0000), while the mean (median) number of continuous years of service ($Anal_{age}$) is 3.8960 (3.0000). The mean value (median) for market value (*MV*) is 26.9550 (26.7043), which is KRW 509 trillion (KRW 396 trillion). The mean and median values for the variable *LEV* are 2.2808 and 1.3717, respectively, suggesting that the average total liability of our sample represents 228% of total firm equity. The *ROE* variable has a mean value of 0.1071 and a median value of 0.1200. The mean value for *NGE* is 0.0997, indicating that the proportion of firms reporting loss is 10% on average. The mean value for the *BETA* variable is 0.9809. The *Coverage* variable has a mean value of 17.1046, indicating that on average, 17 analysts perform financial analyses for the firms in this study. The mean values for the *D_EPS_FORE* and *D_PRICE_FORE* variables are −0.0070 and 0.0059, respectively. The mean of the *KOSPI* dummy variable is 0.6708, that is, 67.08% of observations are from firms with shares traded on the KOSPI; otherwise, they are traded on the KOSDAQ.

In Panel B, the dependent variable is $CAR_{(-1,1)}$, measured based on analyst reports from the Fn-DataGuidePro database. The mean (median) three-day cumulative abnormal return ($CAR_{(-1,1)}$) is 0.19% (0.01%). $Null_{dum}$ has a mean (median) value of 0.0418 (0.0000) and maximum and minimum values of 1 and 0, respectively. This means that the proportion of "No Response" reports is 4.18% of the full sample. The mean value (median) for market value (*MV*) is 27.5071 (27.0000), which is KRW 883 trillion (KRW 532 trillion). The mean and median values for the leverage (*LEV*) variable are 2.1042 and 1.2500, respectively. The return on equity (*ROE*) variable has a mean value of 0.1119 and a median value of 0.1223. The proportion of firms reporting loss (*NGE*) is 9.27% on average. The mean value for the *BETA* variable is 0.9703. The average number of analysts' reports (*Coverage*) is 19.9891. The mean values for the *D_EPS_FORE* and *D_PRICE_FORE* variables are −0.0062 and 0.0065, respectively. The mean of the *KOSPI* dummy variable is 0.7621; that is, 76.21% of observations are from firms with shares traded on the KOSPI; otherwise, they are traded on the KOSDAQ.

Table 2. Descriptive Statistics

Panel A. Descriptive statistics for testing hypotheses 1-1 and 1-2.

Variables	N	Mean	StdDev	Minimum	Median	Maximum
$Null_{cons}$	46,115	0.1357	0.3231	0.0000	0.0000	1.0000
$ChaeAff_{dum}$	46,115	0.0012	0.0114	0.0000	0.0000	0.1111
Best	46,115	0.1835	0.3871	0.0000	0.0000	1.0000
$Anal_{age}$	46,115	3.8960	2.4727	1.0000	3.0000	11.0000
MV	46,115	26.9550	1.8884	23.3391	26.7043	31.4794
LEV	46,115	2.2808	2.5550	0.1644	1.3727	15.7479
ROE	46,115	0.1071	0.1439	−0.6880	0.1200	0.4203
NGE	46,115	0.0997	0.2996	0.0000	0.0000	1.0000
BETA	46,115	0.9809	0.3604	0.1966	0.9746	1.8427
Coverage	46,115	17.1046	10.8842	1.0000	16.0000	51.0000
D_EPS_FORE	46,115	−0.0070	0.0859	−0.3951	0.0000	0.3147
D_PRI_FORE	46,115	0.0059	0.0374	−0.1022	0.0000	0.1557
KOSPI	46,115	0.6708	0.4699	0.0000	1.0000	1.0000

Panel B. Descriptive statistics for testing hypothesis 1-3.

Variables	N	Mean	StdDev	Minimum	Median	Maximum
$CaR_{(-1,1)}$	381,235	0.0019	0.0541	−0.2351	0.0001	0.2579
$Null_{dum}$	381,235	0.0418	0.2001	0.0000	0.0000	1.0000
MV	381,235	27.5071	1.8490	23.7960	27.0000	31.8272
LEV	381,235	2.1042	2.3022	0.1899	1.2500	13.9474
ROE	381,235	0.1119	0.1319	−0.5620	0.1223	0.4059
NGE	381,235	0.0927	0.2900	0.0000	0.0000	1.0000
BETA	381,235	0.9703	0.3482	0.2023	0.9600	1.7901
Coverage	381,235	19.9891	10.4209	1.0000	20.0000	46.0000
D_EPS_FORE	381,235	−0.0062	0.1193	−0.6166	0.0000	0.5270
D_PRI_FORE	381,235	0.0065	0.0702	−0.2500	0.0000	0.3636
KOSPI	381,235	0.7621	0.4258	0.0000	1.0000	1.0000

Before hypothesis testing, the Pearson correlation coefficients of the key variables in the multiple regression equations are determined. These are reported in Table 3. In the table, Panel A lists correlations from the firm-year-analyst dataset in terms of $Null_{cons}$, and Panel B represents that from the firm-year-event date dataset analyzed in terms of $CAR_{(-1,1)}$.

In Panel A, the correlation coefficient between $Null_{cons}$ and $ChaeAff_{dum}$ is significant and negative (−0.0384) at a confidence level of 1%. A positive relationship is evident between $Null_{cons}$ and analyst ability (*Best* and $Anal_{age}$). These results show that as values for $ChaeAff_{dum}$, *Best*, and $Anal_{age}$ increase in analysts' reports, the ratio of "No Response" to other responses decreases. However, because these results are based on simple correlation analyses, and considering that other variables affecting these variables are not controlled, these results cannot be generalized. Looking at the correlations between independent variables, all correlation coefficients are <0.3, which means that the chances of a multicollinearity problem are relatively low. In addition, the correlation coefficients between *MV* and *COVERAGE* are 0.7006 and 0.6929 in panels A and B, respectively. These values are high and positive. If *MV* and *COVERAGE* are analyzed together in one model, multicollinearity may result. Thus, the VIF (variance inflation factor) value of each model is determined. The highest VIF values in the models (in tests of Hypotheses 1-1 and 1-2) are <5.0 (3.58 and 3.53, respectively); thus, no serious multicollinearity problems are identified among the independent variables in the model.

Table 3. Pearson Correlation Coefficients Matrix

Panel A. Descriptive statistics for testing hypotheses 1-1 and 1-2.

	$ChaeAff_{dum}$	*Best*	$Anal_{age}$	*MV*	*LEV*	*ROE*	*NGE*	*BETA*	*COVERAGE*	*D_EPS_FORE*	*D_PRICE_FORE*	*KOSPI*
$Null_{cons}$	−0.0384 <.0001	−0.0793 <.0001	−0.0773 <.0001	−0.2443 <.0001	0.0405 <.0001	−0.0143 0.0022	0.0169 0.0003	0.0202 <.0001	−0.2399 <.0001	0.0046 0.322	−0.0574 <.0001	−0.2095 <.0001
$ChaeAff_{dum}$	1	0.0183 <.0001	0.0194 <.0001	0.0626 <.0001	−0.0202 <.0001	0.0060 0.2015	−0.0131 0.0048	0.0014 0.7572	0.0498 <.0001	0.0027 0.5699	0.0078 0.0928	0.0550 <.0001
Best		1	0.2567 <.0001	0.0567 <.0001	−0.0102 0.0283	0.0015 0.7437	−0.0052 0.269	−0.0561 <.0001	0.0246 <.0001	0.0056 0.2265	0.0365 <.0001	0.0779 <.0001
$Anal_{age}$			1	0.2226 <.0001	−0.0130 0.0051	0.0123 0.0082	−0.0130 0.0053	−0.0102 0.028	0.0749 <.0001	−0.0019 0.6827	0.0571 <.0001	0.0741 <.0001
MV				1	−0.1748 <.0001	0.1762 <.0001	−0.1285 <.0001	0.0032 0.4927	0.7006 <.0001	0.0723 <.0001	0.1162 <.0001	0.5291 <.0001
LEV					1	0.0473 <.0001	−0.0468 <.0001	−0.0046 0.3202	−0.1047 <.0001	−0.0275 <.0001	−0.0426 <.0001	−0.2478 <.0001
ROE						1	−0.6803 <.0001	−0.0562 <.0001	0.2099 <.0001	0.1723 <.0001	0.1102 <.0001	0.0006 0.8924
NGE							1	0.1264 <.0001	−0.1267 <.0001	−0.1749 <.0001	−0.0812 <.0001	−0.1003 <.0001
BETA								1	0.1009 <.0001	−0.0417 <.0001	−0.0144 0.002	−0.2729 <.0001
COVERAGE									1	0.0582 <.0001	0.0854 <.0001	0.2758 <.0001
D_EPS_FORE										1	0.1927 <.0001	0.0608 <.0001
D_PRICE_FORE											1	0.0481 <.0001

(Table 3 continued)

Panel B. Descriptive statistics for testing hypothesis 1-3.

	$Null_{dum}$	*MV*	*LEV*	*ROE*	*NGE*	*BETA*	*COVERAGE*	*D_EPS_FORE*	*D_PRICE_FORE*	*KOSPI*
$CaR_{(-1,1)}$	−0.0014 0.3874	0.0367 <.0001	−0.0076 <.0001	0.0212 <.0001	−0.0106 <.0001	0.0108 <.0001	0.0288 <.0001	0.0266 <.0001	0.0492 <.0001	0.0152 <.0001
$Null_{dum}$	1	−0.1215 <.0001	0.0144 <.0001	−0.0104 <.0001	0.0064 <.0001	0.0034 0.0366	−0.1211 <.0001	−0.0017 0.2815	−0.0169 <.0001	−0.0882 <.0001
MV		1	−0.1849 <.0001	0.2143 <.0001	−0.1512 <.0001	0.0101 <.0001	0.6929 <.0001	0.0457 <.0001	0.0541 <.0001	0.4993 <.0001
LEV			1	0.0228 <.0001	−0.0138 <.0001	−0.0139 <.0001	−0.1090 <.0001	−0.0151 <.0001	−0.0228 <.0001	−0.2623 <.0001
ROE				1	−0.6866 <.0001	−0.0628 <.0001	0.2462 <.0001	0.0860 <.0001	0.0566 <.0001	0.0329 <.0001
NGE					1	0.1318 <.0001	−0.1457 <.0001	−0.0715 <.0001	−0.0380 <.0001	−0.1368 <.0001
BETA						1	0.0942 <.0001	−0.0194 <.0001	−0.0029 0.071	−0.2411 <.0001
COVERAGE							1	0.0373 <.0001	0.0361 <.0001	0.2176 <.0001
D_EPS_FORE								1	0.1768 <.0001	0.0360 <.0001
D_PRICE_FORE									1	0.0231 <.0001

Empirical Results

Table 4 displays the results of testing of Hypothesis 1-1 representing differences in the proportion of "No Response" reports between Chaebol-affiliated analysts and non-Chaebol-affiliated analysts. The results of the multivariate testing of Hypothesis 1-1 are based on the estimation in Equation (3). The dependent variable in the model is $Null_{dum}$, and the key independent variable is $ChaeAff_{dum.}$ The results are as follows (Table 4).

Table 4. Results of Multiple Regression Analyses for Testing of Hypothesis 1-1

$Null_{cons} = a_0 + a_1\ ChaeAff_{dum} + a_2\ MV + a_3\ LEV + a_4\ ROE + a_5\ NGE + a_6\ BETA + a_7\ Coverage + a_8\ D\_EPS\_FORE + a_9\ D\_PRI\_FORE + a_{10}\ KOSPI + e$

Variables	Dependent Variable: $Null_{cons}$					
	(1)		(2)		(3)	
	Coefficient	T-statistics	Coefficient	T-statistics	Coefficient	T-statistics
Intercept	0.0930	9.11***	0.5714	13.98***	0.5779	14.13***
$ChaeAff_{dum}$	−0.5810	−8.90***	−0.5565	−8.46***	−0.5550	−8.45***
MV			−0.0174	−11.98***	−0.0183	−12.31***
LEV			−0.0023	−3.50	−0.0025	−3.79***
ROE					0.0661	4.53***
NGE					0.0013	0.20
BETA					0.0015	0.31
Coverage	−0.0063	−40.79***	0.0002	−21.27***	−0.0045	−21.76***
D_EPS_FORE	0.1156	8.29***	0.0139	8.74***	0.1062	7.46***
D_PRI_FORE	−0.5421	−22.03***	0.0248	−20.88***	−0.5310	−21.24***
KOSPI	−0.0969	−25.61***	0.0045	−16.91***	−0.0001	−5.71***
$Year_{dummy}$	Included		Included		Included	
Ind_{dummy}	Included		Included		Included	
Adjusted R^2	0.1135		0.1164		0.1171	
Observations	46,115		46,115		46,115	

Notes: ***, **, and * represent significance at the 1, 5, and 10 percent levels, respectively, based on a two-tailed test.

The signs of the coefficients of the included variables are notable. In the first column of Table 4, characteristics of analyst reports such as *Coverage*, *D_EPS_FORE*, and *D_PRICE_FORE* are represented. Controlling for these characteristics, the t-statistic of $ChaeAff_{dum}$ is −8.90 (p = 0.01). The second column includes the results with the financial characteristics of firms such as market value (*MV*) and debt ratio (*LEV*) added to the first column. Controlling for firms' financial characteristics, the t-statistic of $ChaeAff_{dum}$ is −8.46, which is significant at the 1% level. The last column displays all related control variables included in the model, such as *ROE*, *NGE*, and *BETA*. In this case, the t-statistic of $ChaeAff_{dum}$ is −8.45, which is also significant at the 1% level. In all three analyses, the coefficients have significant negative values (β_1 = −0.5810, −0.5565, and −0.5550, respectively). These negative coefficients suggest that the proportion of "No Response" recommendations is lower for Chaebol-affiliated analysts. Analysts in Chaebol brokerages are likely to have access to superior information sources compared to the data sources of other non-Chaebol brokerages, since Chaebols collect and retain huge amounts of data from various industries. Therefore, Chaebol-affiliated analysts have confidence in their own forecast values. These results suggest that analysts with lack of information tend to leave the stock recommendation area blank in their reports ("No Response"). Thus, Hypothesis 1-1 is supported.

Panel A of Table 5 displays the results of testing of Hypothesis 1-2, representing differences in the proportion of "No Response" reports between best analysts and non-best analysts. Data in Panel B reveal that the proportion of "No Response" differs according to the number of years of service, reporting the results of the multivariate testing of Hypothesis 1-2 based on the estimation in Equations (4) and (5). The dependent variable in the model is $Null_{dum}$, and the key independent variables are *Best* and $Anal_{age}$. The results are as follows (Table 5).

Table 5. Results of Multiple Regression Analyses for Testing of Hypothesis 1-2

Panel A.

$Null_{cons} = a_0 + a_1\ Best + a_2\ MV + a_3\ LEV + a_4\ ROE + a_5\ NGE + a_6\ BETA + a_7\ Coverage + a_8\ D\_EPS\_FORE + a_9\ D\_PRI\_FORE + a_{10}\ KOSPI + e$

Variables	Dependent Variable: $Null_{cons}$					
	(1)		(2)		(3)	
	Coefficient	T-statistics	Coefficient	T-statistics	Coefficient	T-statistics
Intercept	0.0781	7.12***	0.5303	12.95***	0.5376	13.12***
Best	−0.0595	−18.84***	−0.0579	−18.38***	−0.0578	−18.33
MV			−0.0165	−11.35***	−0.0173	−11.65***
LEV			−0.0023	−3.46***	−0.0025	−3.78***
ROE					0.0689	4.72***
NGE					0.0017	0.25
BETA					−0.0008	−0.18
Coverage	−0.0065	−41.77***	−0.0047	−22.46***	−0.0048	−22.93***
D_EPS_FORE	0.1122	8.05***	0.1179	8.47***	0.1017	7.15***
D_PRI_FORE	−0.5223	−21.21***	−0.4997	−20.13***	−0.5138	−20.53***
KOSPI	−0.0921	−24.30***	−0.0719	−16.13***	−0.0698	−14.32***
$Year_{dummy}$	Included		Included		Included	
Ind_{dummy}	Included		Included		Included	
Adjusted R^2	0.1168		0.1194		0.1202	
Observations	46,115		46,115		46,115	

Panel B.

$Null_{cons} = a_0 + a_1\ Anal_{age} + a_2\ MV + a_3\ LEV + a_4\ ROE + a_5\ NGE + a_6\ BETA + a_7\ Coverage + a_8\ D\_EPS\_FORE + a_9\ D\_PRI\_FORE + a_{10}\ KOSPI + e$

Variables	Dependent Variable: $Null_{cons}$					
	(1)		(2)		(3)	
	Coefficient	T−statistics	Coefficient	T−statistics	Coefficient	T−statistics
Intercept	0.1728	14.28***	0.6244	15.12***	0.6308	15.26***
$Anal_{age}$	−0.0137	−20.53***	−0.0135	−20.28***	−0.0133	−20.10***
MV			−0.0165	−11.38***	−0.0173	−11.68***
LEV			−0.0022	−3.40***	−0.0024	−3.71***
ROE					0.0624	4.29***
NGE					0.0003	0.05
BETA					0.0005	0.10
Coverage	−0.0063	−40.90***	−0.0045	−21.64***	−0.0046	−22.09***
D_EPS_FORE	0.1108	7.94***	0.1166	8.37***	0.1014	7.13***
D_PRI_FORE	−0.5063	−20.55***	−0.4837	−19.48***	−0.4968	−19.84***
KOSPI	−0.0916	−24.23***	−0.0713	−16.01***	−0.0691	−14.21*
$Year_{dummy}$	Included		Included		Included*	
Ind_{dummy}	Included		Included		Included*	
Adjusted R^2	0.1202		0.1229		0.1235	
Observations	46,115		46,115		46,115	

Notes: ***, **, and * represent significance at the 1, 5, and 10 percent levels, respectively, based on a two-tailed test.

The signs of the coefficients of the included variables are notable. In the first column of panel A, characteristics of analyst reports such as *Coverage*, *D_EPS_FORE*, and *D_PRICE_FORE* are represented. Controlling for these characteristics, the t-statistics of *Best* and $Anal_{age}$ are −18.84 (p = 0.01) and −20.53 (p = 0.01), respectively. The second column includes the results with financial characteristics of firms such as market value (*MV*) and debt ratio (*LEV*) added to the first column. Controlling for these financial characteristics, the t-statistics of the two key independent variables are −18.38 and −20.28, which are significant at the 1% level. The last column displays all related control variables included in the model, such as *ROE*, *NGE*, and *BETA*. In this case, the t-statistics of *Best* and $Anal_{age}$ are −18.33 and −20.10, which are also significant at the 1% level. In all three analyses, the coefficients have significant negative values. These negative coefficients suggest that the proportion of "No Response" is lower for top analysts. These results suggest that less capable analysts tend to leave the stock recommendation area blank in their reports ("No Response"). Thus, Hypothesis 1-2 is supported.

Table 6 displays the results of testing of Hypothesis 1-3 representing changes in recommendation from one of the five common stock recommendations to "No Response." It reports the results of the multivariate testing of Hypothesis 1-3 based on the estimation in Equation (6). The dependent variable in the model is $CAR_{(-1,1)}$, and the key independent variable is $Null_{dum}$. The results are as follows (Table 6).

Table 6. Results of Multiple Regression Analyses for Testing of Hypothesis 1-3

$CaR_{(-1,1)} = a_0 + a_1\ Null_{dum} + a_2\ MV + a_3\ LEV + a_4\ ROE + a_5\ NGE + a_6\ BETA + a_7\ Coverage + a_8\ D\_EPS\_FORE + a_9\ D\_PRI\_FORE + a_{10}\ KOSPI + e$

Variables	Dependent Variable: $CaR_{(-1,1)}$									
	(1) S/Buy		(2) Buy		(3) Hold		(4) U/Weight		(5) Sell	
	Co-efficient	T-statistics	Co-efficient	T-statistics	Co-efficient	T-statistics	C-oefficient	T-statistics	Co-efficient	T-statistics
Intercept	−0.163	−2.16**	−0.058	−3.76***	0.036	2.55**	0.136	2.29**	0.040	1.20
$Null_{dum1}$	0.007	1.41								
$Null_{dum2}$			−0.000	−1.92*						
$Null_{dum3}$					0.002	2.35**				
$Null_{dum4}$							0.008	1.71*		
$Null_{dum5}$									−0.002	−0.38
MV	0.006	2.08**	0.002	3.54***	−0.001	−1.68*	−0.005	−2.13**	−0.002	−1.48
LEV	0.000	0.14	0.000	0.52	0.000	−1.02	0.000	1.29	−0.002	−5.55***
ROE	0.009	0.55	0.000	0.60	−0.001	−0.81	−0.000	−0.17	0.001	0.67
NGE	0.000	0.01	−0.001	−0.66	−0.001	−0.97	0.002	1.15	−0.003	−1.05
BETA	−0.004	−1.33	0.000	0.48	−0.001	−1.17	0.003	0.84	−0.007	−1.25
Coverage	−0.000	−0.59	0.000	0.65	−0.000	−2.47**	0.000	0.52	0.001	2.53***
D_EPS_FORE	−0.000	−1.33	0.000	1.47	0.000	1.08	0.000	2.05**	0.000	2.99***
D_PRI_FORE	0.038	0.88	0.025	11.42***	0.006	2.34**	0.005	1.08	−0.064	−14.99***
KOSPI	−0.008	−2.19**	−0.002	−2.57**	−0.002	−3.04***	0.004	1.62	−0.007	−1.75
$Year_{dummy}$	Included		Included		Included		Included		Included	
Ind_{dummy}	Included		Included		Included		Included		Included	
Adjusted R^2	0.0529		0.0059		0.0064		0.0866		0.6257	
Observations	663		207,797		53,220		1,214		60	

Notes: ***, **, and * represent significance at the 1, 5, and 10 percent levels, respectively, based on a two-tailed test

The signs of the coefficients of the included variables are notable. In the second column of Table 6, the t-statistic of $Null_{dum2}$ is −1.92 (p = 0.10), which is significant at the 10% level. It indicates that stock returns from firms with "No Response" in the stock recommendations area of the financial report are significantly lower than those from firms with "Buy" recommendations. The second column displays all related control variables included in the model. The t-statistic of the $Null_{dum3}$ variable is 2.35, which is significant at the 5% level. It indicates that stock returns from firms with "No Response" in the stock recommendations area are significantly higher than those from firms with "Hold" recommendations. Thus, a change in the stock recommendation grade to "No Response" provides specific incremental informational content. This supports Hypothesis 1-3.

CONCLUSION

Analysts' reports act as information intermediaries in the capital market, and thus alleviate information asymmetry between enterprises and information users (Asquith *et al.*, 2005). Stock recommendations by analysts provide summaries of information about the intrinsic value of a company. In previous studies, informational content was verified depending on whether an abnormal return could be obtained if an investment was made according to stock recommendations. Analysts' reports provide critical information for research on the capital market and useful insight into the behavior of market participants, which is difficult to observe directly. Since analysts offer earnings forecasts and stock recommendations for multiple enterprises in their reports, the accuracy of their forecast data directly influences their reputation and reward. Investors also make decisions on individual investments and evaluate the performance of analysts and firms based on the accuracy of the data that analysts provide. Thus, evaluation of various aspects of analysts' reports may be helpful to a variety of players in the business world.

One objective of this study is to provide an overview of earnings forecasts and stock recommendations done by analysts who act as information intermediaries in the Korean capital market. There are five commonly used stock recommendations: "Strong Buy", "Buy", "Hold", "Underweight", and "Sell". Most previous studies have analyzed these five types of recommendations. In a sizable percentage of analysts' reports, however, the stock recommendation area of the report is left blank (4.55%). In this study, a blank in the place of one of these five stock recommendations is defined as "No Response," and the decision-making factors involved in and informational content of this lack of response are analyzed. The Fn-Guide database provides the data for all analysts' reports regardless of content (i.e., whether or not they contain earnings forecasts and stock recommendations). Analysts in Chaebol brokerages are likely to use superior information sources compared to data sources of analysts in non-Chaebol brokerages, since Chaebols collect and retain huge amounts of data from various industries. In this study, analysts who lack information reported "No Response" more often than those with sufficient information. Analysts with inferior abilities reported "No Response" more often than those with superior abilities. Stock returns from firms with "No Response" recommendations work significantly lower than those of firms with "Buy" recommendations, and significantly higher than those of firms with "Hold" recommendations. Thus, we can conclude that an analyst report in which "No Response" is provided instead of a stock recommendation is missing a response due to lack of information. Thus, the results of this study demonstrate that "No Response" should be included as one of the recommendation categories along with "Strong Buy", "Buy", "Hold", "Underweight", and "Sell", because leaving this portion of the report blank is an indicator of lack of meaningful informational content. Future studies will discuss this finding further.

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REFERENCES

Aboody, D., M. E. Barth, & R. Kasznik. (1999). Revaluation of fixed assets and future firm performance: evidence from the UK. *Journal of Accounting and Economics 26*, 149-178.

Asquith, P., P. A. Pathak, & JR. Ritter. (2005). Short interest, institutional ownership, and stock returns. *Journal of Financial Economics 78*, 243-276.

Barber, Brad, Reuven Lehavy, Maureen McNichols, & Brett Trueman. (2001). Can Investors Profit from the Prophets? Security Analyst Recommendations and Stock Returns. *The Journal of Finance 56*, 531-563.

Clement, M. B. (1999). Analysts Forecast Accuracy: Do Ability, Resources, and Portfolio Complexity Matter? *Journal of Accounting and Economics 27*, 285-303.

Collins. D. W., & SP. Kothari. (1989). An analysis of intertemporal and cross-sectional determinants of earnings response coefficients. *Journal of Accounting and Economics 11*, 143-181.

Elton. E. J., M. J. Gruber, & S. Grossman. (1986). Discrete Expectational Data and Portfolio Performance. *The Journal of Finance. 41*, 699-713.

Givoly, D., & J. Lakonishok. (1979). The information content of financial analysts' forecasts of earnings: Some evidence on semi-strong inefficiency. *Journal of Accounting and Economics 1*, 165-185.

Grossman, S. (1981). The informational role of warranties and private disclosure about product quality. *Journal of Law and Economics 24*, 461-489.

Hayn. C. (1995). The information content of losses. *Journal of Accounting and Economics 20*, 125-153.

Jacob, J., T. Z. Lys, & M. A. Neale. (1999). Expertise in forecasting performance of security analysts. *Journal of Accounting and Economics 28*, 51-82.

Jegadeesh, Narasimhan., Joonghyuk Kim, Susan D. Krische, & Charles M. Lee. (2004). Analyzing the Analysts: When Do Recommendations Add Value? *Journal of Finance 59*, 1083-1124.

Jeong, S. W., & T. K. Lim. (2005). The effect of earnings persistence on analysts' forecast error and accuracy. *Korean Accounting Review 30*, 209-235.

Kho, B. C., & J. W. Kim. (2007). Earnings forecast accuracy and recommendation profitability of the analysts in Korea. *Journal of Korean Securities Association 36*, 1009-1047.

Kim, D. S., & S. S. Eum. (2006). The impact of analysts' revisions in their stock recommendation and target prices on stock prices. *Journal of Korean Securities Association 35*, 75-108.

Kim, J. D., H. T. An, & S. M. Bae. (2013). Analysis of firm-specific characteristics that affect the stock market response to the disclosure of asset revaluation. *Korea International Accounting Review 48*, 1-28.

Lang, M., J. S. Raedy, & W. Wilson. (2006). Earnings management and cross listing: Are reconciled earnings comparable to U.S. earnings? *Journal of Accounting and Economics 42*, 255-283.

Lee, W. H., & S. M. Choi. (2003). The effect of changes in analysts' investment recommendation ranking on stock returns and trading volumes. *Journal of Korean Securities Association 32*, 1-44.

Leone, A. J., & J. S. Wu. (2007). What Does it Take to Become a Superstar? Evidence from Institutional Investor Rankings of Financial Analysts. Working paper. Simon school of business.

McNichols, M., & P. C. O'Brien. (1997). Self-selection and analyst coverage. *Journal of Accounting Research 35*, 167-199.

Mikhail, M. B., B. R. Walther, & R. H. Willis. (1997). Do security Analysts Improve Their Performance with Experience? *Journal of Accounting Research 35*, 131-157.

Milgrom, P. (1981). Good news and bad news: representation theorems and applications. *The Bell Journal of Economics 12*, 380-391.

Stickel, S. (1992). Reputation and Performance Among Security Analysts. *The Journal of Finance. 47*(5), 1811-1836.

Womack K. L. (1996). Do Brokerage Analysts' Recommendations have Investment Value? *Journal of Finance 54*, 137-157.