

# The Joint Influences of Resource and Time Bases in Management Earnings Guidance Disclosure<sup>1</sup>

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**Abstract:** This study provides evidence that investor's evaluation is jointly influenced by multiple reference points of resource (internal and external), and time (backward-and forward-looking) information associated with management earnings guidance (MEG) disclosure. Investors have greater belief when they consider a company external information (as a company's macroeconomics information) and MEG's time information (as forward-looking future-oriented information) in earnings announcement than a single reference point only, which in turn, influences their judgments in evaluating company's performance. This study also presents evidence that investors have greater anchor when a company's macroeconomics is considered in earnings announcements than do when they are given internal information only.

Overall, the experimental results suggest that company external (as a company's macroeconomics information) and MEG disclosure (as forward-looking future-oriented information) in earnings announcement, effectively help investors in evaluating company's performance. Moreover, this study shows that MEG disclosure, besides earnings announcement, and external information, have information contents, that investors use these multiple reference points of information to predict a company's performance in the future.

**Keywords:** Management Earnings Guidance, Macroeconomics Information, Backward and Forward-looking Information, Multiple Reference Point.

## 1. Introduction

Future information disclosure or forward-looking oriented information is a still voluntary management policy. Future information can be earnings forecast information that is made by analyst known as analyst earnings forecast or earnings forecast made by management known as management earnings forecast or management earnings guidance. Han and Tan (2007) explained that management earnings guidance is a management expectation towards future earnings. In Indonesia, information disclosure of earnings forecast is still varied, some companies disclose the information, and others do not.

Earnings forecast researches have been conducted and have obtained different results, for example is a study by Han and Wild (1987) stating that earnings forecast assumed to be less credible than other information, while other studies have documented that earnings forecast has information content (Patell, 1976; Penman, 1980; Waymire, 1984). The next development of research is related to the study of management earnings guidance (management's earnings forecast) that is considered to have a better future information quality than forecast analyst (Ajinkya and Gift, 1984; Patell, 1976; Baginski et

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al. 2004). Han and Tan (2007)<sup>2</sup>, and Fanning et al. (2018)<sup>3</sup> by using an experiment, tested the disclosure of management earnings guidance.

This study tries to extend the previous studies by applying on multiple reference points for management earnings guidance information disclosure. Different from studies by Schrand and Walther (2000), Krische (2005) and Wahyuni and Hartono (2012) which use only a single reference point in evaluating company's performance that is one dimension of time represented backward-looking of last period earnings information. Thus far, research documents effectiveness of multiple reference point which considers both internal factors (prior-period and current earnings) as well as external factors (industry average) in company performance evaluation (Wahyuni and Hartono, 2010).<sup>4</sup> Furthermore, when the management earnings guidance informations (as voluntary information that is an management's expectations of future earnings) were disclosed in earnings announcement, they will increase investors' belief to give judgment in the performance evaluation process (Wahyuni et al. 2018).

Based on multiple reference point theory from psychology (Fiegenbaum et al. 1996; Ordones et al. 2000), the main purpose of this study is to test whether investors use multiple reference points of information to predict company's performance in the future. These multiple pieces of information are 1) earnings as past information that presented on current time, 2) company's macroeconomics condition is considered as external information, and 3) revised information regarding management earnings guidance as forward-looking information. More specifically, this study has two purposes. First, is to test whether investors who are given earnings information and additional company macroeconomics external information will have more positive reactions than those if given company internal information only (earnings or macroeconomics). Second, is to test whether investors who are given revised information regarding earnings information and additional management earnings guidance information will have more positive reactions than those if given earnings information only.

Earnings information and management earnings guidance information are used in this study as internal information. Company's macroeconomics condition is considered as external information. Baginski et al. (2004) explain that internal and external dimensions are potentially important information to investors who engage in strategic analysis of financial statement information. Strategic financial analysis involves understanding both a company's internal and external environments. To study deeper about time dimension and to develop the previous study (see Schrand and Walther, 2000; Krische, 2005; Wahyuni and Hartono, 2012), this study uses earnings information as past and present information, and earnings forecast management earnings guidance as a forward-looking future-oriented information disclosure. These explanations of backward and forward looking information

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<sup>2</sup> Han and Tan (2007) investigate underlying mechanisms for effects of management guidance forms on investors' judgment. Their participants are assigned to one of three management guidance form conditions-point, MID, and range. Based on their scores on the knowledge test, they are divided into high-versus low-knowledge groups. They find that high-knowledge investors use both primary and secondary benchmarks, whereas low-knowledge investors attend only to primary benchmarks.

<sup>3</sup> Fanning et al. (2018) investigate whether nonprofessional investors' responses to a company's reported earnings differ when management earnings guidance is presented as a goal or an expectation. Their experimental results suggest that if earnings guidance is issued as a goal rather than as an expectation, investors respond less negatively when earnings fall short of investors' expectations, but not less positively when earnings exceed investors' expectations.

<sup>4</sup> Prior an experimental setting (Wahyuni and Hartono, 2010; Wahyuni et al. 2018) provides evidence that strategic disclosure of multiple benchmarks influences investor's judgments in evaluating company performance. Their study focus to examine the multiple benchmarks on the basis of internal disclosure (transitory prior-period gain or loss) and external information (positive or negative news industry average).

disclosure can increase investors' belief to give judgment in the performance evaluation process (Wahyuni et al. 2018).

Beside internal information, external oriented voluntary information disclosure is one of information that needs to be considered in business decision making (Fiegenbaum et al. 1996; Ordonez et al. 2000). This study uses internal past information (earnings information) and external information (the company's macro economics information) which is considered as a company external condition is provided. After these initial information, revision of information in term of backward looking and forward looking oriented information which is considered as a past information (earnings information) and as a forward looking future information (management earnings forecast or management earnings guidance). Specifically, this study tests investors' behavior toward earnings announcement that considers company's external information, and revision of information as a forward-looking management earnings guidance information.

Earnings forecast disclosure has been an argument amongst regulators and academicians since the beginning of the 1970s. (Pownall and Waymire, 1989; Trueman, 1986; Penman, 1980). Before 1973, in a written document, SEC issued policy laws regarding earnings forecast as it is stated in the prospectus, proxy statements, and 10-K annual reports. SEC in February 1973 issued Securities Act No. 5362 which withdrew the policy law of earnings forecast. But, in November 1978, SEC issued Securities Act No. 5992 again supported the earnings forecast and provided a guideline for a company to disclose.

Study about management earnings guidance as replacement of earnings forecast is interesting. There are some matters that motivate this research as follows. First, this study combines internal accounting information with external information. Second, this study is one of the few studies that respond to the real phenomena in Indonesia about information disclosure of management earnings guidance as forward-looking oriented information. Third, this study tries to develop from the previous studies by using multiple reference points not only focusing on time but also including psychological aspect. Fourth, this study employs a research design experiment which is still rare in capital market studies.

This research provides theoretical and policy contributions. Theoretical contribution is the existence of a new perception or insight into the implementation of multiple reference point theory in management earnings guidance information disclosure testing. Through empirical testing, this research is expected to give support on multiple reference point theory. As initial research, the research result is expected to trigger next researches in behavioral aspect of accounting in Indonesia, both in the context of auditing, management accounting, and other fields involving judgment in evaluating company's performance for business decision making.

The second is policy contribution. This research result is expected to show the importance of forward-looking oriented accounting information which is management earnings guidance information. For the company's management side, this study is expected to be able to introduce and give understanding extensively about prospectus accounting information needed to be disclosed in the earnings announcement. For investors, they are expected to be able to recognize and to understand the prospectus accounting information that has to be considered in making a decision, especially in evaluating company's performance, which is forward-looking oriented information such as management earnings guidance information. For regulators, this research is expected to be an important input as a consideration in making Financial Reporting Disclosure Standard. Ikatan Akuntan Indonesia (IAI) or Indonesian Accountant Association (IAA) as the agency of Financial Accounting Standards and Financial Service Authorization also plays an important role in publishing accounting information and financial reporting disclosure.

Therefore, by recognizing and understanding various relevant accounting information for business decision making, as well as information disclosure by company's management along with its various effects, it will be very helpful in the process of making, presenting, and disclosing financial reports.

In this experiment, active and passive investors, securities analysts, and accounting students who know the field of investment, the stock market, and financial reporting analysis as the participants. They interpret a company's earnings announcement and forecast earnings for the next period. Five steps used in this experimental design and case material developed from study by Krische (2005), Wahyuni and Hartono (2010, 2012). These steps are a step of the company's business description explanation, a step of initial evaluation (treatments given are about sources of information dimensions), a step of evaluation revision (treatments given are about time of information dimensions), a step of demographic data collecting, and a debriefing step which is the refreshing step of subject done by giving explanation why the subject is given a treatment.

The paper is organized as follows. The next section presents the relevant literature and develops the hypotheses. Subsequent sections describe the experimental method and results, provides a discussion of the results, implications, and limitations of this research.

## 2. Theoretical Background and Hypotheses Development

### 2.1 Multiple Reference Point Theory

Multiple reference point theory is one of the psychology theories developed through strategic reference point (SRP) practice known as a strategic benchmark. In psychology research, a benchmark is called as a comparison level (Thibaut and Kelley, 1959), an adjustment level (Helson, 1964), or a reference point (Kahneman and Tversky, 1979; Tversky and Kahneman, 1974).

Fiegenbaum et al. (1996) explained that strategic reference point (SRP) is the company's choice in helping to reach strategic alignment. Strategic alignment is suitability between the expected external environment condition and the firm's internal ability. As noted a classic problem in strategic management is matching the expected conditions of the external environment with the necessary internal capabilities.<sup>5</sup> Therefore, to capture the range of possible reference points they develop SRP of three dimensions; they are: 1) company's internal condition, 2) company's external condition and 3) time dimension that is oriented to past, present, and future time.<sup>6</sup>

SRP is built and developed from other relevant prospect and theoretical perspective theories. Kahneman and Tversky (1979) demonstrated prospect theory that an individual uses a target or reference point in evaluating choice. Individual behavior depends on how they feel themselves as if they are above (better) or below (worse) a special target or reference point they choose. Fiegenbaum and Thomas (1988) used prospect theory to describe behavior in company level. They found that an organization behaves as risk-seeking when it is below target or reference point, but as risk-averse when it is above the reference point.

<sup>5</sup> Porter (1980, 1985) establishes an extended view of the industry in his Industrial Organization perspective on competition.

<sup>6</sup> Fiegenbaum et al. (1996) argue that a firm's choice of reference point can help the firm to achieve strategic alignment, to improve performance, and to have a sustainable competitive advantage. This research consider the Strategic Reference Point (SRP) as the resource and time bases perspective in management earnings guidance disclosure. Based on the SRP, this research believe that it will increase participants' trust to give judgment in the performance evaluation process.

## 2.2 Information on Management Earnings Guidance and The Company's Macro Economics

The working assumption in the voluntary disclosure literature is that managers have private information, which is strategically communicated to investors and analysts via voluntary disclosure like management earnings guidance information (Bonsall et al. 2013).<sup>7</sup> The information of management earnings guidance is a management expectation towards future earnings (Han and Tan, 2007) that is often explained by linking forecasted performance both for internal activities and the actions of parties external to the firm (Baginski et al. 2004). These attributions potentially aid investors in the interpretation of management forecasts by confirming known relationships between attributions and profitability or by identifying additional causes that investors should consider when estimating future earnings.

This study tests investors' behavior toward earnings announcement that is conducted by comparing the effects of resource (internal and external) and time (backward and forward-looking) dimensions. This study considers company's external information (company's macroeconomics) and revision of information as a forward-looking information (management earnings guidance disclosure) because they need to be considered in business decision making. Du and McEnroe (2009) suggests that management earnings guidance is an important tool used to communicate a firm's forecasted earnings to market participants and to warn them about potential earnings surprises.<sup>8</sup> On the other hand, Hutton et al. (2012) document that analyst forecast are more accurate than management earnings forecasts when a firm's prospects are tied to macroeconomic factor realizations. Therefore, this study tries to develop the previous studies by impounding macroeconomic information into the management earnings guidance disclosure (see, e.g., Bonsall et al. 2013).

## 2.3 Hypotheses Development

### Resource Dimensions of Internal and External Information Hypothesis

Companies generally disclose the information about internal factors as well as external factors (Han and Tan, 2007; Wahyuni and Hartono, 2010; Wahyuni et al. 2018). Consistent with research findings in psychology on the basis of strategic-reference-points (SRP) theory (Fiegenbaum et al. 1996). SRP theory is developed consisting of three important dimensions: the internal dimension (input-output), external dimension (government, competitors, regulators, and costumers), and the dimension of time (past, present, and future). Support for the SRP theory is also given by Javalgi et al. (2006) by integrating the SRP process and model in international marketing decisions context.

Based on the multiple reference theory that states additional information will add more consideration for managers to make better decision making, additional external information is also beneficial for managers. As results, external information as an addition to the internal information will enhance managers' decision making. In this study, internal

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<sup>7</sup> Similarly, prior research suggest that firms often use voluntary earnings guidance as a strategic mechanism to positively affect investor's perceptions (Maletta and Zhang, 2014). Mercer (2004) considers the benefits of providing voluntary earnings guidance. Libby and Tan (1999) suggest that investors perceive a firm to be less credible when it issues biased earnings guidance versus when it issues accurate earnings guidance.

<sup>8</sup> Du and McEnroe (2009) focus on two main aspects of investor's expectations: (a) predictions of future EPS and (b) subjective confidence about their own predictions. Their findings indicate that multiple information sources improve investor's confidence, and investors are most confident when they receive multiple earnings forecasts with no variability.

information given to the investors is considered as initial information. These internal information are earnings information or earnings with management earnings guidance information. Macroeconomics external information is considered as revised information.

Therefore, in the earnings announcement, when external information as an addition to internal information is given, investors will evaluate the company's performance better than do without additional external information. Thus, the hypothesis can be stated as the follows.

**H1: In the earnings announcement, investors evaluate a company's performance better when external information is given than do when they are only given internal information.**

### **Time dimensions of backward and forward-looking information hypothesis**

This research tries to test the effectiveness of management earnings guidance information disclosure based on multiple reference-point theory. The underlying assumption is the presence of bounded rationality (Bazerman, 1994), which is the condition of an individual who has limitations of information, time, memory capacity, and others, so the individual does not have forward-looking oriented prospectus information, unless if the information is expressed in current announcement.

King et al. (1990) defined management earnings forecast as voluntary managerial disclosure that is an earnings prediction towards expected reporting. Widely, Baginski et al. (2004) stated that management often explains its earnings forecast through an attribution related to estimation performance both for company's internal activities (e.g. product and service issues, organizational issues) and company's external activities (e.g. economy conditions, or government regulations). Attribution is more possible for large private companies rather than state-owned companies (regulated). The attribution potentially helps the investor in interpreting management forecast, even more, possible for the negative forecast (bad news forecast). For example, a recession as impact of the "Covid-19" case is developing on the world and it will affect economic activity. According to economic observers, the impact of the recession on people is that it is difficult to find jobs, followed by a fall in people's purchasing power due to reduced income, so the finance estimation will also be negative territory. The information of recession effects attribution potentially helps the investor in interpreting the management earnings guidance.

Based on multiple reference point theory (Fiegenbaum et al. 1996; Ordones et al. 2000), a disclosure oriented to the past (backward-looking oriented disclosure) has not been enough to help the investor in evaluating company's performance. This theory predicts that in a complex environment, an individual is affected by three main dimensions in making a business decision, which is internal, external, and time (past, present, and future) dimensions. Therefore, it is considered necessary to reveal forward-looking oriented information such as management earnings guidance information disclosure.

Empirical studies about earnings forecast disclosure have been conducted and obtained different results. Some stated that voluntary disclosure on management earnings forecast is considered less credible than other information (Han and Wild, 1987), while other studies documented that voluntary disclosure on management earnings forecast has information content (Patell, 1976; Penman, 1980; Waymire, 1984), so that management earnings guidance information is considered to have better future information quality than analyst forecast (Ajinkya and Gift, 1984; Patell, 1976; Baginski et al. 2004).

The availability of adequate information with management earnings guidance information disclosure in earnings announcement is believed to provide investors with additional information and wider consideration, so it will increase investors' trust to give judgment in the performance evaluation process.<sup>9</sup> Therefore, in the earnings announcement, when management earnings guidance information is given, investors will evaluate the company's performance better than that without additional information in the form of management earnings guidance. Thus, the hypothesis can be stated as the follows.

**H2: In the earnings announcement, investors evaluate a company's performance better when management earnings guidance information is disclosed rather than that without management earnings guidance information disclosure.**

### 3. Research Method

#### 3.1 Experiment Design

This research uses an experiment to test causality relation with some manipulated variables to answer research problems. Experimental method in this study is chosen because it can control tested variables and extraneous variable affecting the causality relation. The experiment in this study uses a combination between subject and within-subject design with a 2 x 2 mixed factorial design as seen in Table 1. The 2 x 2 experiment method in this research includes (1) source of information dimensions (internal and internal information plus external information) and (2) time of information dimensions (earnings information and earnings information plus management earnings guidance information).

**Table 1. Experiment design 2 x 2.**

Resource Dimensions	Time Dimention		Number of Participants
	Backward-looking information (Earnings Information)	Forward-looking information (Earnings + Management Earnings Guidance Informations)	
<b>Internal Dimension (Initial Information)</b>	<b>Cell 1:</b> Reactions from Earnings Information	<b>Cell 3:</b> Reactions from Earnings Information + Management Earnings Guidance (MEG) Information	<b>18</b>
<b>External Dimension (Macro Economic Informations)</b>	<b>Cell 2:</b> Reactions from Earnings Information + External information	<b>Cell 4:</b> Reactions from Earnings Information + Management Earnings Guidance (MEG) Information + External Information	<b>17</b>
	<b>Total</b>		<b>35</b>

<sup>9</sup> Similarly, prior studies have established the importance of investor' confidence as a variable of interest in that there is an association between investor's convidence and investment decisions (Barber and Odean, 2001). Budescu and Rantilla (2000) find that participants are more confident when they receive information from four experts than from two experts and also when the multiple information sources are redundant.

A between-subject design compares the effect of resource dimensions between internal information with external information to subjects in different groups. Within-subject design compares the effect of time dimensions of earnings information only (backward looking information) and earnings information plus management earnings guidance information (forward looking information) on subjects in the same groups. Harsha and Knapp (1990) explained that in between-subject design, each subject gets a case description. While in a within-subject design, each subject gets more than one case descriptions. Moreover, it is explained that the use of between-subject experiment is based on the reason that the method can test the effect of interaction from independent variable towards dependent variable and avoid the occurrence of demand effect that subjects know the direction from the condition given.

### **3.2 Measurement of Variables**

In this experiment, the dependent variable is investors' evaluation of the company's performance measured by investors' earnings forecast. King et al. (1990) defined management earnings forecast as a voluntary managerial disclosure which is a prediction of past earnings towards expected reporting. Investors are asked to interpret earnings announcement, then make an earnings forecast for the next year. The use of the earnings forecast as the measurement of investor's evaluation towards company's performance is because future earnings and future earnings growth are important components in determining company's value (Feltham & Ohlson, 1995; Ohlson 1995).

Independent variables in this study are factors from 2 x 2 mixed design treatment. Between and within subjects are used. Between subject measures resource of information dimension (two levels: internal information (cell1) and internal information + external information (cell 2)). In this study, external attribution is proxied by the macroeconomy condition of the companies. Within-subject is used for manipulating whether the investor has access to management earnings guidance information. Within-subject measures time of information dimension (two levels: earnings information + MEG (cell 3) and earnings + macroeconomy + MEG information (cell 4).

### **3.3 Experiment Participants**

Participant criteria in this research are to have knowledge in the field of investment, the stock market, and financial reporting analysis. Based on those criteria, then, participants in this research include (1) active and passive investors, securities analysts, and (2) accounting students who know the field of investment, the stock market, and financial reporting analysis. The experiment is done by using paper-based experiment.



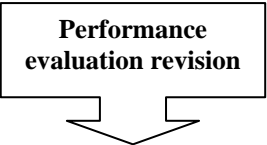


### **3.4 Material and Procedure**

This experiment uses materials from Krische's study (2005) and Wahyuni and Hartono (2010) with a little adjustment in context story to make it more realistic to the setting in Indonesia. The case setting is a manufacturing company producing snacks which the name is PT Makmur Jaya.

Each participant is given a written instruction and material case developed from the study of Krische (2005). All participants use a calculator. There are five steps in this experiment as explained in figure 1. These steps are a step of the company's business description explanation, a step of initial evaluation (treatments given are about sources of



information dimensions), a step of evaluation revision (treatments given are about time of information dimensions), a step of demographic data collecting, and a debriefing step which is the refreshing step of subject done by giving explanation why the subject is given a treatment. The purpose of debriefing is to add understanding and knowledge of the subject about the testing on management earnings guidance information disclosure.

Experiment Step	Materials	Manipulation	
		Internal Information	External Information
A. 	<b>Company's business description</b>	Description business of PT Makmur Jaya.	Description business of PT Makmur Jaya.
B. 	<b>Sources of information dimensions</b>	<b>Initial performance evaluation is based on internal:</b> Earnings Information (Cell 1)	<b>Initial performance evaluation is based on internal and external:</b> Earnings Information + Macroeconomics Information (Cell 2)
C. 	<b>Sources and Time of information dimensions</b>	<b>Revised performance evaluation is based on internal, and time:</b> Earnings Information + Management Earnings Guidance (MEG) Information (Cell 3)	<b>Revised performance evaluation is based on internal, external, and time:</b> Earnings Information + Macroeconomics Information + Management Earnings Guidance (MEG) Information (Cell 4)
D. 			
E. 			

**Fig. 1. Experiment Manipulation and Material**

Participants are randomly assigned to one of two sources of information dimension, manipulated between subjects to be either a earnings (internal information) or earnings + macroeconomics (internal information + external information). First, participants receive and read a description of the company's business. Second, a step of initial evaluation, manipulated between subject to be either a earnings condition or earnings + macroeconomics condition. Participants in the earnings condition only given internal information (two-year summary statements of income), while participant in the earnings + macroeconomics condition given internal information + external information (two-year summary statements of income + macroeconomics information). Participants are instructed to read two-year summary statements of income's PT Makmur Jaya, after that they are asked to interpret earnings announcement, then make an earnings forecast for the next year. This study test whether participants who are given additional pieces of

information about macroeconomics will have more positive reactions than that if given internal information only.

In the within-subjects setting, this study further manipulates whether participants considered disclosure of management earnings guidance as forward-looking oriented information in evaluating the company performance (time of information dimension). In step of evaluation revision, treatments given are earnings information plus management earnings guidance information and earnings information plus macroeconomics information plus management earnings guidance information. In this step, participant are again asked to forecast earnings for the next year. After the main experiment, they are asked to answer the manipulation check questions.

### 3.5 Data Analysis and Hypotheses Testing

Data analysis technique used in this experiment is an analysis of variance (ANOVA). The reason to use this analysis is to test means ratio of data groups. Before testing the hypotheses, testing of the ANOVA's assumptions is carried out. Then, the testing of characteristic difference that is attached to the subject is done to investigate whether the condition of each group is equivalent or not. The following is the hypothesis testing shown in table 2 below.

**Table 2. Hypotheses Testing**

No	Hypotheses	Testing Ways
1	<b>H1:</b> Resource dimensions (internal information vs external information).	(Cell 1) Vs (Cell 2): Comparing the effects of (Earnings information) with (Earnings + Macro Economics information). (Cell 3) Vs (Cell 4): Comparing the effects of (Earnings + Management Earnings Guidance information) with (Earnings + Management Earnings Guidance information + Macro Economics information).
2	<b>H2:</b> Time dimensions (backward information vs forward information).	(Cell 1) Vs (Cell 3): Comparing the effects of (Earnings information) with (Earnings + Management Earnings Guidance information). (Cell 2) vs (Cell 4): Comparing the effects of (Earnings + Macro Economics information) with (Earnings + Management Earnings Guidance information + Macro Economics information).

## 4. Results

### 4.1 Manipulation Check and Subject Demograph

After the main task of the experiment is done, manipulation check to evaluate attention and seriousness as well as the participant's understanding on the experiment case material is performed. In this experiment, the manipulation check is done after the treatments.<sup>10</sup>

The experiment subjects are 40 investors consisting of 17 males and 23 females. On average, subjects are 27 years old and are students and lecturers who evenly have more

<sup>10</sup> The participants were asked to estimate future earnings and interpret the magnitude of the estimation that they made, whether it is higher or lower than the current earnings. The magnitude of the estimation is said to be higher when there is an increase of Rp10,000.00 or its multiples, and it is said to be lower if there is a decrease of Rp10,000.00 or multiples thereof. If a participant did not answer as instructed, then the subject was declared as being unqualified.

than five years of experience. From 40 subjects, 5 of them cannot be analyzed because of incomplete data.<sup>11</sup> Subjects are grouped randomly into two groups as the followings.

**Table 3. Descriptive Statistics of Subject Category**

Group		Total
<b>Internal-backward Information</b> (Earnings)	<b>Internal-backward-forward Information</b> (Earnings + Management Earnings Guidance)	18
<b>Internal-External Information:</b> (Earnings + Macroeconomics)	<b>Internal-External-Time Information</b> (Earnings + Management Earnings Guidance + Macroeconomics)	17
<b>Total</b>		<b>35</b>

## 4.2 Preliminary Analysis

This study applies 2 x 2 *mixed design* model with analysis of variance (ANOVA). Between subjects is to test the effect of external information (internal information and internal + external information) on investor forecasts. Within-subjects is to test the effect of management earnings guidance information (earnings information and earnings + management earnings guidance information) on investor forecasts. Result from ANOVA analysis is Internal-Between Groups is significant ( $F=25,642$ ;  $Sig.=0,000$ ) and External-Between Groups is also significant ( $F=52,809$ ;  $Sig.=0,000$ ).

The sample of this study is considered as a small sample, so, to analyze, the non-parametric test is used by ordering the initial forecasts and investor revisions (Kachelmeier and Messier, 1990). Moreover, equality of variance testing or known as the homogeneity of variance is done as one of ANOVA assumptions, that a dependent variable has to have the same variance in each independent variable. Homogeneity of variance testing by using Levene's test of equality of variance shows that there is no differences between experiment group (Internal:  $F=0,499$ ;  $Sig.=0,485$ ; External:  $F=1,004$ ;  $Sig.=0,324$ ). The result from ANOVA testing can be seen in table 4 below as follows.

**Table 4. ANOVA Findings for Dependent Variable is Earnings Estimation**

Panel A. ANOVA table					
	Squares Total	Df	Mean Square	F	Sig.
Between groups	2,691E+11	3	89690629474	32.816	0.000
Within groups	1,804E+11	66	2733131561		
Total	4,495E+11	69			
Panel B. Treatment means					
	Treatment Group	Mean	Deviation Std.	N	
Internal Estimation	Earnings (Cell 1)	374,444.4	53,050.72	18	
	Earnings+MEG (Cell 3)	461,764.7	48,700.01	17	
	Total	416,857.1	66,962.30	35	
External Estimation	Earnings+External (Cell 2)	406,944.4	55,363.47	18	
	Earnings+MEG+External (Cell 4)	538,529.4	51,531.69	17	
	Total	470,857.1	85,056.09	35	

<sup>11</sup> Time for the data's collection for a personnel based approach experiment is longer than for a laboratory experiment. The data collection for this experiment took  $\pm 5$  months (March – July 2019). From 44 subjects, 5 of them could not be analyzed because of incomplete data and 4 people were declared as failing the manipulation check (20,5%); 35 subject (79,5%) were declared as being qualified.

<b>Panel C. Contrast mean</b>				
<b>Contrast</b>		<b>Hypothesis</b>	<b>t</b>	<b>Sig.</b>
a. Earnings vs. Earnings + External Information (Cell 1 vs. Cell 2)		H1	1.798	0.081
b. Earnings + MG vs. Earnings + MG + External Inf. (cell 3 vs. cell 4)		H1	4.464	0.000
c. Earnings vs. Earnings + Man. Guidance (Cell 1 vs. Cell 3)		H2	5.077	0.000
d. Earnings +Ext Infor. vs. Earnings + MG + Ext Inf. (Cell 2 vs. Cell 4)		H2	6.075	0.000

Participants are randomly assigned to one of two resource dimensions- internal and external conditions. First, investors receive and read a description of the company's business. Second, a step of initial evaluation, manipulated between subjects to be either a earnings condition or earnings + macroeconomics condition. Participants are instructed to read two-year summary statements of income's PT Makmur Jaya and asked to interpret earnings announcement, then make an earnings forecast for the next year. Third, a step of evaluation revision. Manipulated within-subject whether participants revised their earnings forecast when the management earnings guidance as forward-looking oriented information is disclosed in earnings announcement. Fourth, a step of demographic data collecting, and a debriefing step.

In table 4 panel A, it is explained that *the F* test value is 32.816 (Sig.=0.000). This result reflects the presence of response differences or subjective probability of between groups related to the company's performance evaluation. This difference shows that time and source dimensions affect investor behavior. This finding is consistent with H1 and H2.

### 4.3 Hypotheses Testings

Table 5 presents mean (average), earnings forecast for 2x2 mixed design. Descriptive statistics of dependent and independent variables are explained in table 5 as the followings.

**Table 5. Investor's Earnings Estimation (Standard Deviation)**

<b>Resource Dimension</b>	<b>Time Dimension</b>		<b>Total</b>
	<b>Backward-looking Information</b> (Earnings Information)	<b>Forward-looking Information</b> (Earnings + Management Earnings Guidance Information)	
<b>Internal Dimension</b> (Initial Information)	<b>(Cell 1)</b> 374,444.44 (53,050.72)	<b>(Cell 3)</b> 461,764.76 (48,700.01)	<b>N=18</b>
<b>External Dimension</b> (Macro Economics information)	<b>(Cell 2)</b> 406,944.44 (55,363.47)	<b>(Cell 4)</b> 538,529.41 (51,531.69)	<b>N=17</b>
	<b>Total</b>		<b>N=35</b>

These research results indicate that time dimension (management earnings guidance information disclosure) can affect investor in evaluating the company's performance. It is explained by the presence of an investor's earnings estimation that is higher when management earnings guidance information is disclosed in earnings announcement rather that investor's earnings estimation when there is no management earnings guidance information disclosure. This research also indicates that source dimension (macroeconomics information disclosure) can influence investor's judgments in evaluating of company performance as seen in figure 2.

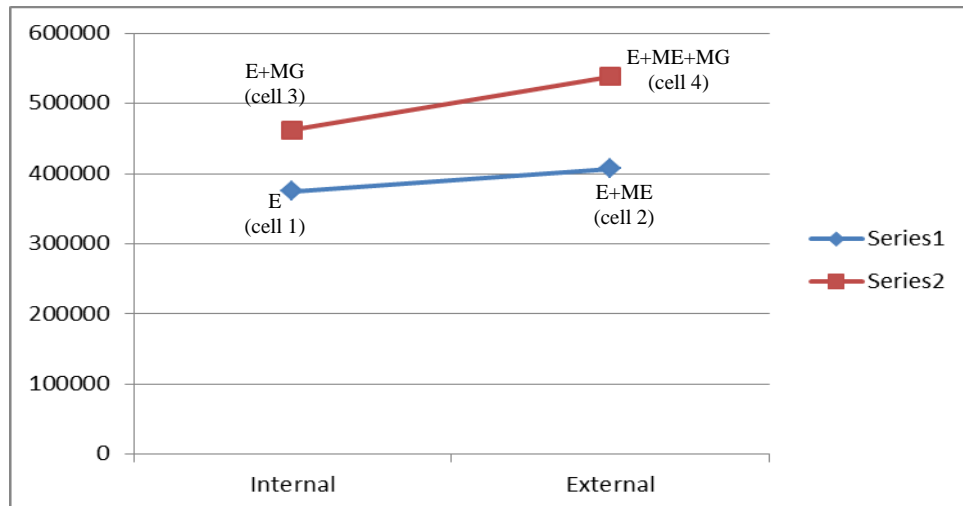


Fig. 2. Average of Earnings Estimation for Resource and Time Dimensions.

### *Hypothesis of Resource Dimension (H1)*

The first hypothesis (H1) examines whether investors will evaluate company's performance better when added external information (macroeconomics) is expressed in earnings announcement, rather than without external information disclosure. The first hypothesis (H1) tests resource dimensions for comparing effects of internal information versus external information in the earnings announcement. Earnings estimation by an investor for comparing effects of earnings information with earnings + macroeconomics information can be seen in table 6.

Table 6. Earnings Estimation for Resource and Time Dimension

Resource Dimension	Time Dimension		Revision Scale
	Backward Inform. (Earnings)	Forward Inform. (Earnings + MG)	
<b>Internal Dimension</b> (Initial Information)	374,444.44 (Cell 1)	461,764.76 (Cell 3)	<b>87,320.32</b>
<b>External Dimension</b> (Macro Economics information)	406,944.44 (Cell 2)	538,529.41 (Cell 4)	<b>131,584.97</b>
<b>Revision Scale</b>	<b>32,500.00</b>	<b>76,764.65</b>	

These research results indicate that macroeconomics and management earnings guidance information disclosure can affect investor in evaluating the company's performance. There are explained by the presence of an investor's earnings estimation that is higher when macroeconomics and management earnings guidance information are disclosed in earnings announcement rather that investor's earnings estimation when there is no macroeconomic information disclosure. This result consistent with H1.

**Table 7. Hypothesis 1 Testing for Resource Dimension**

Comparing Effect	Mean (standard deviation)	Revision	Levene's Test		T-test	
			F	Sig.	t	Sig.
<b>Internal Information:</b> (Earnings) vs. (Earnings + ME) (1 vs. 2)	374,444.44 < 406,944.44 (53,050.72) (55,363.47)	32,500.00	0.026	0.872	1.798	0.081*
<b>External Information:</b> (Earnings + MG) vs. (Earnings + MG + ME). (3 vs. 4)	461,764.76 < 538,529.41 (48,700.01) (51,531.69)	76,764.65	0.060	0.809	4.464	0.000*

\*Significant at 0.001

Table 7 explains earnings estimation information increases for internal and external information. For internal information, investor's earnings estimation is from 374,444.44 to 406,944.44 with revision increasing scale of 32,500.00 that is statistically not significant with  $p=0.081$ . For external information added with macroeconomics information, the estimation increases are from 461,764.76 to 538,529.41 with revision increasing scale of 76,764.65 that is statistically significant with  $p=0.000$ . More specifically, this study indicates that macroeconomics information disclosure can cause an investor to be more favorable reflected in his/her behavior which is estimating the future earnings higher than the current earnings. The result supports H1.

### *Hypothesis of Time Dimensions (H2)*

The second hypothesis (H2) examines whether investors will evaluate the company's performance better when management earnings guidance information is expressed in the earnings announcement, rather than that without management earnings guidance information disclosure. The second hypothesis tests time dimensions for comparing effects of backward information vs forward information in earnings announcement.

This research result indicates that management earnings guidance information disclosure can affect investor in evaluating the company's performance. It is explained by the presence of an investor's earnings estimation that is higher when management earnings guidance information is disclosed in earnings announcement rather than investor's earnings estimation when there is no management earnings guidance information disclosure. This result consistent with H2.

**Table 8. Hypothesis 2 Testing for Time Dimension**

Comparing Effect	Mean (standard deviation)	Revision	Levene's Test		t-test	
			F	Sig.	t	Sig.
<b>Backward Information:</b> (Earnings) vs. (Earnings + MG) (1 vs. 3)	374,444.44 < 461,764.76 (53,050.72) (48,700.01)	87,320.32	0.499	0.485	5.077	0.000*
<b>Forward Information:</b> (Earnings + ME) vs. (Earnings + MG + ME) (2 vs. 4)	406,944.44 < 538,529.41 (55,363.47) (51,531.69)	131,584.97	0.003	0.960	6.075	0.000*

\*Significant at 0.001

Table 8 explains earnings estimation information increases for backward and forward information. For backward information, investor's earnings estimation is from 374,444.44 to 461,764.76 with revision increasing scale of 87,320.32 that is statistically significant with  $p=0.000$ . Similarly, for forward information added with macroeconomics information, the estimation increases are from 406,944.44 to 538,529.41 with revision increasing scale of 131,584.97 that is statistically significant with  $p=0.000$ .

More specifically, this study indicates that management earnings guidance and macro economics information disclosure can cause an investor to be more favorable reflected in his/her behavior which is estimating the future earnings higher than the current earnings. The result supports H2.

#### 4.4 Additional Analysis

Estimation revision in this study is more caused by the availability of relevant information on management earnings guidance and macroeconomics information. It is shown on the presence of investor behavior tendency to revise his/her evaluation in earnings announcement disclosing management earnings guidance and macroeconomics information. The average of investor's earnings estimation revision is higher for management earnings guidance information and macroeconomics information. Moreover, the research results show the adjustment scale of investor's evaluation for management earnings guidance is higher than the scale of earnings estimation for macroeconomics information. The differential of investors' estimation revision can also be caused by anchoring effect (Wahyuni and Hartono, 2012).<sup>12</sup>

Investors have several reference points on their mind known as initial value (anchor) when they will evaluate a company's performance, for example the prior-period earnings, previous share price, or previous ROA. This study tests investors' behavior toward earnings announcement that is conducted by comparing the effects of resource (internal and external) information, and then examines of estimation revision as backward and forward-looking information. Investors will have anchor is more favorable with external information (macroeconomics) convey in earnings announcements, so they will more belief to give judgment in the performance evaluation process, than do when they are only given earnings announcement as internal information. This study indicates that the different starting point also will bring about different evaluation.

As pilot research, this study explains the importance of management earnings guidance information especially in the condition in Indonesia, even though the existence of management earnings guidance information is voluntary information and is still provided by company's management (internal side). Generally, the availability of management earnings guidance and macroeconomics information are more an attribution disclosure related to estimating performance both for company's internal activities (e.g. product and service issues, organizational issues) and company's external activities (e.g. the economic conditions or government regulations). The attribution potentially helps the investor in interpreting management forecast even it is more possible for the negative forecast (bad news forecast), like the phenomenon of how the "Covid-19" case is developing and how this pandemic will affect economic activity. This finding is consistent with the disclosure by Baginski et al. (2004) that managers often explain their earnings forecasts by linking forecasted performance to their internal actions and the actions of parties external to the firm.

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<sup>12</sup> Tversky and Kahneman (1974), Wahyuni and Hartono (2012) explain that anchoring-adjustment is individual's tendency to make estimation starting from initial value (anchor), that is then adjusted (adjustment) with the new information.

Different from the condition abroad, information on earnings forecast is made by the analyst as a company's independent side. The involvement of earnings forecast information can be presented more straightforward in describing the scale of future earnings, as the research finding done by Libby et al. (2006) and Han and Tan (2007) about suitable management earnings guidance form for the condition in America.

## 5. Summary and Conclusions

The research results indicate that the joint influences of resource and time bases in MEG disclosure occurs when investors are evaluating company's future performance. Furthermore, the findings indicate that MEG and macroeconomics information disclosure can cause an investor to be more favorable reflected in his/her behavior which is estimating the future earnings higher than the current earnings. Overall, this study supports the H1 and H2.

The result indicates that macroeconomics and management earnings guidance information disclosure can affect investor in evaluating the company's performance. More specifically, management earnings guidance information can cause an investor to behave more favorable rather than for macroeconomics information disclosure, investor's behavior tends to be less favorable. The scale of earnings estimation for management earnings guidance is higher than the scale of earnings estimation for macroeconomics. Consistent with Patell (1976), Penman (1980) and Waymire (1984) suggest that management earnings guidance has information content, and consistent with research in cognitive psychology (Fiegenbaum et al. 1996; Ordonez et al. 2000) that in a complex environment, an individual is affected by three main dimensions in making a business decision which is internal, external, and time (past, present, and future) dimensions.

Specifically, the results indicate that management earnings guidance disclosure (as forward-looking future-oriented information) in earnings announcement, and company external (as a company's macroeconomics information) effectively help investors in evaluating company's performance. An assumption of cognitive mechanisms for psychological factors is believed that individual judgment have the nature of bounded rationality (individual condition of owning limited information, time, memory capacity and so on), so investors will have not relevant information of the future, except that relevant information is disclosed in earnings announcement.

There are some reasons why investors' estimation revision have different for management earnings guidance and macroeconomics information. First, investors have more favorable anchor with external information (macroeconomics) convey in earnings announcements, so they more belief to give judgment in the revision of performance evaluation process, rather than do when they are only given earnings announcement as internal information. Second, different for investors' knowledge in describing an attribution of management earnings guidance information, which it will bring about different evaluation. Hirst et al. (1999), Libby et al. (2006), Han and Tan (2007) and Fanning et al. (2018) demonstrated that the effects of guidance forms are contingent on investor' knowledge, only high-knowledge investors are more confident in their earnings estimation, rather than that low-knowledge investors. Third, the material case in this experimental setting not be identified and measured about good news versus bad news of management earnings guidance and macroeconomics information,<sup>13</sup> so they are possible that

<sup>13</sup> Schrand and Walther (2000), Krische (2005), and Wahyuni and Hartono (2012) examine strategic benchmarks in earnings announcement with compare between gain versus loss of property, plant, and equipment (PPE). Investor evaluate a company's performance more favorably when gain information



uncontrolled differences between investors' perception in which give to respon imperfect and less sophisticated.

Besides the presence of small sample which is 35 subjects, this study has some limitations which are: it has not considered the attribution of management earnings guidance information more widely, both attributions related to company's internal and external activities. To develop the next study, it is necessary to consider those attributions especially the ones related to bad news forecast. Some possibilities to develop future research are to consider the form of management earnings guidance information as the research conducted by Han and Tan (2007) and Fanning et al. (2018). Furthermore, there are still some more dimensions of multiple reference points can be tested by future studies (Baginski et al. 2004), as an example (Internal: product/service issues/actions/real activity of strategy, organizational issues; External: general economic/environmental issues, governmental, recession/ inflation; Future information: analys forecast, financial forecast and so on). From the methodology aspect, especially an experiment setting, the presence of internal and external validity capacity increase needs to be done especially about the effect of history, maturity, testing, instrumentation and selection (Cooper and Schindler, 2003).

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about PPE is provided in the earnings announcement, rather than that loss information of PPE. Moreover, Wahyuni et al. (2018) examine investor'judgment with compare between positive earnings versus negative earnings, and find that the experimental results consistent with prior researchs.

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