INTERNATIONAL JOURNAL OF INDUSTRIAL MANAGEMENT (IJIM)
ISSN: 2289-9286 e-ISSN: 0127-564X
VOL. 7, ISSUE 1, 30 – 41
DOI: https://doi.org/10.15282/ijim.7.0.2020.5752

ORIGINAL ARTICLE

EARNINGS ANNOUNCEMENT, ABNORMAL RETURNS, AND MARKET EFFICIENCY IN INDONESIA EQUITY MARKET: AN ANALYSIS FROM INDUSTRIAL FACTOR PERSPECTIVE

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ABSTRACT – The paper examines the market efficiency of nine industry sectors of the IDX market. Using an event window of 30 days post-earnings announcement stock returns after the public announcement of the financial statements as of 31 December 2018, the study tests the significance of cumulative average abnormal returns surrounding the earnings announcement. The study concludes that there are significant variances in the market efficiency towards earnings announcement across nine industry sectors in IDX. The finding indicates that the industry-specific factors influence the level of abnormal returns surrounding the earnings announcement. However, the findings reject the market efficiency in agriculture (AGRI) and property, real estate, and building (PROP) industries. The results illustrate that the miscellaneous industry (MISC) reacts immediately to the earnings announcement, but its significance is only for a short period. The infrastructure, utilities, and transportation (INFRA) industry show delays in its response to the announcement but continuously significant for a relatively long period. Other industries of mining (MINING), basic industry and chemicals (BASIC), construction, real estate, and building (CONS), financial (FIN), as well as trading, services, and investments (TSI), report significant negative CAARs in all investigated windows. The One Way ANOVA testing concludes that the nine industries' cumulative average abnormal returns on IDX are significantly different from each other sectors.

ARTICLE HISTORY
Received: 13-6-2020
Accepted: 1-9-2020

KEYWORDS
Abnormal Returns,
Earnings Announcement,
Industry,
Market Efficiency

INTRODUCTION

Market efficiency is an essential concept for understanding the functions of capital markets. Over the last three decades, the subject has become the center of finance research, attracted many researchers' attention, and contributed to the development of corporate finance theory. Despite critics and anomalies raised by several researchers (e.g., Massey & Thaler, 2013; Malkiel, 2003), many researchers believed that the prices incorporate in the stock market reflect information available in the market (Chordia & Miao, 2020; Dimitrov & Jain, 2018; Fama, 1998).

Several studies tested the efficiency level of the Indonesian equity market from several perspectives. Several studies that analyzed daily closing prices (Shaik and Maheswaran, 2017; Aumeboonsuke, 2012) and monthly closing value (Hamid, Suleman, Shah, & Akkash, 2010) rejected market efficiency in the market. Andrianto and Mirza (2016) categorized the Indonesian stock market as in weak form of efficiency. Despite the different opinions, these studies are consistent with the conclusion that information during earnings announcements consists of new information, leading to abnormal returns.

The study investigated the Indonesian equity market's market efficiency surrounding earnings announcement events from the industrial perspectives. The objective is to assess the impact of financial information provided during earnings announcement and examine the existence of abnormal returns during earnings announcement across nine industry sectors in the IDX, which include agriculture; mining; basic industry and chemicals; miscellaneous industry; consumer goods industry; property, real estate, and building; infrastructure, utilities, and transportation; finance; and trade, services, and investment.

The significance of the industry factors on the firms' performance has been well established. Different industries have specific characteristics which subject to rules, regulations, and agency costs. These differences create information asymmetry and affect market efficiency. Beard and Dess (1981) documented that industry effects have a significant predictor of firms' profitability. Hawawini, Subramanian, and Verdin (2005) reported that firm-specific factors substantially affect the firms' performance. Ngobo (1999) concluded that industry effects should be more critical in the goods-producing and trading firms than in the service firms. Despite the differences on its level, the studies generally agreed that the industry factors correlate to the firms' performance. However, how industrial effects influence the stock performance especially in the earnings announcement, is not clearly explained in the current literature. Thus, this study intended to examine the stock return pattern across firms' industries surrounding earnings announcements in the Indonesian equity market.

The contributions of this study are twofold. **Firstly,** this study examined the significance of nine industry sectors' cumulative average abnormal returns in the IDX market. Significant abnormal returns are expected to be profound in a less-efficient firms' industry as the public announcements may bring new information to the market (Beaver, 1968). It

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helps investors to understand the issue of market efficiency in the Indonesian equity market. **Secondly,** the study investigated whether there is a significant variation in the cumulative average abnormal returns across these industries. A significant variation on those variables implies that the industrial effect significantly influences the degree of cumulative average abnormal returns during earnings announcement.

LITERATURE REVIEW

The study used the event of the earnings announcements to test the efficient market hypothesis (Fama, Fisher, Jensen, and Roll, 1969). Fama and Fisher (1970) divided market efficiency into three levels: weak form, semi-strong form, and strong form. A market is said to be in a weak form of efficiency when prices fully reflect historical information. Under this form, the stock returns are serially uncorrelated and have a constant mean, which implies that it is impossible to find general patterns and take advantage of price movements (Poshakwale, 1996). Studies made to test the weak form of market efficiency typically focus on how well past returns can predict future returns (Fama, 1991). The studies generally concluded that investors cannot predict future prices by using models based on historical prices as future stock price changes will move randomly.

Under the semi-strong form of market efficiency, the current price reflects the information that contained the past prices and all other current public information available in the market. A market is said to be semi-form efficient when prices fully, accurately, and quickly available for public information. Consequently, prices will adjust to their new point of equilibrium instantly (Fama & Fisher, 1970), and abnormal return may happen during a specific event, which provides new information. Under the strong form of market efficiency, the current price reflects all information, public and private, and investors will not earn abnormally high returns using private information. The weak form says that future stock prices cannot be predicted based on past stock price information. New information will instantly adjust the current price and not predict future prices in the semi-strong form. The strong form argues that not even private information can predict future prices, as the current prices reflect all information available in the market. In other words, it implies that all forms of market efficiency generally agree that future stock prices are difficult, if not impossible, to predict (Malkiel, Mullainathan, & Stangle, 2005).

The issues of market efficiency have been widely tested but yet remain a controversial topic in finance. Several researchers believed that the prices incorporated in the stock market reflected all information available in the market (e.g., Fama et al., 1969). It can be seen by the fact that the market would quickly react to the new information available, and rapid changes in information cause volatilities in stock prices. Jensen (1978) asserted that there is concrete empirical evidence and it was found to be consistent with the data in various markets. Millionis (2006) commented that Fama's review papers are an invaluable contribution to finance, but there is still some ambiguity concerning the substance of market efficiency and the statistical methodology of its empirical testing.

Despite those controversies, various studies examined the market efficiency issue in several types of financial events such as merger and acquisition (Khan & Vieto, 2012), stock split (Bacon & Spradlin, 2019), and dividend announcement (Shanthaamani & Usha, 2019; Akbar & Baig, 2010). The market efficiency theory has been tested in the context of the Indonesian equity market (Andrianto & Mirza, 2016), which suggested the market is operating in a less efficient market. Other researchers were interested in studying this issue from the earnings announcement view (Chung & Hrazdil, 2011; Bhushan, 1994). These studies consistently reported the relation between the unexpected changes in the financial information and the market's abnormal return. However, empirical studies on this issue from different perspectives are still considering that market anomalies may happen in the financial market due to different reasons and parameters.

Testing market efficiency from the view of abnormal return during earnings announcement is an attractive issue. It offers an excellent platform to explain whether the market reacts instantaneously and rationally to the financial information provided during the event (Mahmoudi, Shirkavand, & Salari, 2011). This financial information relevant to the stock price valuation attracted debates and controversy in which researchers are divided. Lev and Gu (2016) argued that investors pay more attention to future income than historical income reflected in the financial statements. They further argued that publicly available accounting information does not provide any abnormal returns as this information is already incorporated in the current market prices and the accounting value concern are more to the historical value than the current and future value.

On the other side, other researchers suggested the importance of earnings announcements on the stock pricing. Lipe (1998) suggested that financial statements, as reported in the earnings announcements, systematically influence the investors' predictive earning judgment. Ball and Brown (1968) stated that earnings announcement may provide new earning surprises, leading to stock price adjustment. Ball (1978) summarized twenty studies and concluded that systematic abnormal returns exist during earnings announcement. This conclusion is supported by current empirical studies that consistently report abnormal returns during earnings announcement (Feng & Hu, 2014; Forner, Sanabria, & Marhuenda, 2009; Gangguli, 2011).

In continuation of those studies, this study investigated the relationship of industry effects on abnormal returns' existence during earnings announcement explicitly. Academic researchers have used industry groupings on their investigation to limit, benchmarks, and identify their research object. Firms in a similar industry classification are considered homogeneous (Bhojraj, Lee, & Oler 2003) and have similarities in nature and the fundamental demand (Dalziel, 2007).

Various studies used this industry classification model in predicting several financial issues. Bhojraj, Lee, and Oler (2003) suggested that industry grouping is a good platform in explaining the stock returns comovements and various key

financial ratios. Watson and Everett (1999) used it as the model to predict bankruptcy in US firms. McGahan and Porter (1997) indicated that the industry-specific factor affects 19 percent of the aggregate variance in firms' profitability. Despite different perspectives, these studies agreed that industry classification is offering proper context for financial and economic analyses.

This study investigated the pattern of earnings announcement for each in the industry sector in the Indonesia equity market, including agriculture, mining; basic industry and chemicals; miscellaneous industry; consumer goods industry; property, real estate, and building; infrastructure, utilities, and transportation; finance, and trade, services, and investment. The study investigated the significance of the cumulative average abnormal returns (CAARs) in those industries and formulates the following hypothesis.

H_1: The cumulative average abnormal returns (CAARs) in the nine industry sectors of the IDX market are significantly different from zero.

The study further investigated whether there is a significant difference in the cumulative average abnormal returns across these industries. A significant difference in these variables implies that different industry effects significantly influence the cumulative average abnormal returns degree during earnings announcements. Therefore, it examines the CAAR variances among these industries by formulating the following hypothesis.

H_2: There is a significant variation in the cumulative average abnormal returns across nine industry sectors in the IDX market.

METHODOLOGY

Event Study

The study applied the event study methodology to test the semi strong-form efficiency of each industry. An event study is a statistical method of an empirical investigation of the relationship between security returns and a particular economic event (Dyckman, Philbrick, & Stephan, 1984). McWilliams and Siegel (1997) added that this method measures an unanticipated event's effectiveness on stock prices and helps researchers assess specific policy changes' financial impact. An event study focuses on testing whether the cross-sectional distribution of a certain period of returns abnormal or systematically different from predicted expected returns. It compares the distributions of actual returns on specific event dates with predicted returns on other free periods.

Kothari and Warner (2007) proposed this measurement as the primary way of testing market efficiency, particularly in the semi-strong form. The efficient market hypothesis suggests that new data will be integrated directly into the prices for safety. Based on its focus, researchers divided event study into two, namely short and long horizon. The short-horizon test focuses on the short-term effect of an event on the firms' return (Gur-Gershgoren, 2008) and measures the impact of new information on the stock prices distributed around the event period. The long-horizon focuses on the long-term impact, which provides evidence on a particular market (Kothari & Warner, 2007).

Yen and Lee (2008) suggested this measurement as they believe that this measurement gives direct evidence on information efficiency. McWilliams and Siegel (1997) added that it is a powerful tool that can help researchers assess the financial impact of corporate policy changes. MacKinlay (1997) suggested its usage to determine the effect of an economic event on firm value. The value of event studies arises from the fact that abnormal performance may happen at the time of an event (Armitage, 1995).

Measuring Abnormal Returns

The study used a market model to measure abnormal returns. The step started by calculating the daily returns of the firms' stock prices. The daily return (*Ri,t)* for each stock in the sample was calculated using the following formula (Minenna, 2003).

$$R_{i,t} = \ln \frac{P_{i,t}}{P_{i,t-1}} \quad (1)$$

Where:

$R_{i,t}$ = The daily return;

$P_{i,t}$ = closing price at day *t*;

$P_{i,t-1}$ = closing price at day *t – 1*.

The next step was the calculation of the firms' abnormal returns. The capital asset pricing model (CAPM) introduces the expected return, which is the risk-free rate plus beta times the expected value of the difference between the market return and the risk-free return. Expected returns represent the systematic risk of a particular firm. However, due to unsystematic risk factors, the stock's abnormal return may exist at any point. Abnormal returns or unsystematic returns are the deviations of return from this expected return (Jacobsen, 1988). Equations below show the measurement of earnings abnormal return using the market model (Benninga, 2014).

$$AR_{i,t} = R_{i,t} - (\alpha_i + \beta_i R_{mt}) \quad (2)$$

Where,
$AR_{i,t}$ = abnormal return;
$R_{i,t}$ = Daily stock returns;
R_{mt} = Daily market index returns;
α_i = Intercept of firm and market returns in estimation window;
β_i = Slope of firm and market returns in estimation window.

After calculating the AR, we continued to calculate the average abnormal returns in the observed days. The average abnormal return *(AAR_t)* of daily cross-sectional data for a specific event day, *t*, was calculated based on the following formula (Manzoor, 2015).

$$AAR_t = \frac{1}{N}\sum_{t=1}^{m} AR_{it} \quad (3)$$

Where:
AAR_t = average abnormal return;
$AR_{i,t}$ = abnormal return;

Finally, the cumulative average abnormal returns of the market ($CAAR_m$) surrounding the earnings announcement were calculated based on the following formula (Manzoor, 2015).

$$CAAR_m = \sum_{t=1}^{n} AAR_t \quad (4)$$

Where:
$CAAR_m$ = cumulative average abnormal return;
AAR_t = average abnormal return;
N = periods.

Hypothesis Testing

This study used a 95% confidence level with a 5% tolerable error. If the absolute *significance value is less than* 0.05, the distribution is considered abnormal, the difference between variables is considered significant, and the hypothesis is accepted (Dahiru, 2008). Accordingly, if the absolute *significance value* is 0.05 or more, the distribution is considered normal, the difference between variables is considered insignificant, and the hypothesis is rejected.

After calculating the CAAR, a t-statistic was computed and compared to decide whether to reject or not reject the hypothesis. The type of testing depends on the nature of the investigated data. This study used the T-Test and One Way ANOVA test as the hypotheses testing based on their nature.

T-Test

We used the following t-test formula used by Muradoglu and Whittington (2001) to examine the significance of industries' cumulative average abnormal returns. The formula compares the CAARs to their standard deviation and rejects the hypothesis if the value is less than 0.05.

$$t_{CAAR} = \frac{CAAR_m}{\sigma(\mathrm{CAR_{it}})/\sqrt{N}} \quad (5)$$

Where:
t_{CAAR} = t-value of CAAR;
$CAAR_m$ = cumulative average residual of abnormal returns;
$\sigma(\mathrm{CAR_{it}})$ = standard deviation of CAAR the estimation window;
N is the number of days being observed.

One Way ANOVA Test.

We continued the examination by performing the analysis of variances of the CAARs across those industries by using One Way ANOVA tests. This test examined the statistically significant differences of the CAAR means among those industries. The test started with the normality and homogeneity test to investigate whether the data distribution is normal and homogenous as required by the testing. It used SPSS software as a tool for calculation.

Sample and Data Sources

We used a short-horizon window for the public announcement of the financial statements of 31 December 2018 and compared the daily returns during the periods from the event day (day 0)-30 to +30 post announcement.

The study sample included all firms listed on the Indonesia Stock Exchange (IDX) in the second quarter of 2019 and published the annual financial statements as of 31 December 2018. According to the Indonesia Stock Exchange (2019), there were 632 firms listed in IDX. However, we eliminated 11 firms, consisting of three firms not issuing their earnings announcement as per 31 December 2019, 5 delisted firms, two merged firms, and one suspended firm, as their financial statements or the stock price movements were not available on the IDX website. Accordingly, the sample was reduced from 632 to 621 firms or 98.26% of the total population.

Formally, the last day for the earnings announcement for the year ended 31 December 2018 was on 31 March 2019. The submission should be made online through the IDX website, by which the information is opened for public information. However, as the firms can submit the announcement before or after that mandatory date, the study used the website submission dates as published on the IDX website as the announcement dates.

FINDINGS AND DISCUSSION

Data Description

As published on the IDX website, Table 1 describes the frequency of the samples by the industry sector. The table shows that the firms in the industry of trade, services, and investments; finance; as well as property, real estate, and building; are among the top three in IDX, represented 28.3%, 15.9%, and 12.9% of the number of firms in the market. The agricultural sector supports 33% of the country's workforce absorption (FAO, 2018). However, its presence in the capital market is the least, with only 3.4% of the total firms, followed by the mining industry of 3.2%.

This study's primary data were secondary information compiled from www.idx.co.id. The web page is the market's official website, which provides information on the Indonesian public listed firms. The website is also the means of reporting in which members of the Indonesian Stock Exchange submit their annual reports.

Tabel 1: Sample Description by IDX Industry Sector

Industry Sector	Frequency	Percent	Cumulative Percent
1. Agriculture	21	3.4	3.4
2. Mining	20	3.2	6.6
3. Basic Industry and Chemicals	65	10.5	17.1
4. Miscellaneous Industry	39	6.3	23.3
5. Consumer Goods Industry	69	11.1	34.5
6. Property, Real Estate, and Building	80	12.9	47.3
7. Infrastructure, Utilities, and Transportation	52	8.4	55.7
8. Finance	99	15.9	71.7
9. Trade, Services & Investments	176	28.3	100.0
Total	621	100.0	

Post-Earnings Announcement Abnormal Returns by Industry Sectors

We investigated abnormal returns after the earnings announcements by using window (0, +30) in nine industry sectors of the IDX market to capture industries' responses to the earnings announcement. Table 2 displays the average abnormal returns (AARs) on day 0 to 30, which indicate market responses towards earnings announcement in nine industry sectors in the IDX market. The table displays that there is an apparent negative response to each industry's earnings announcement. Figure 1 displays the CAARs for all industries in window (0, +5), (0, +10), (0, +15), and (0, +30). All data is negative, which indicates that the earnings announcement in all industry sectors contained negative information for the market. The graph shows that the industries of trading, services, and mining (TSI) and mining (MINING) are the most negatively affected, while agriculture (AGRI) and property, real, estate, and building (PROP) are among the least.

Tabel 2: IDX Average Abnormal Returns (AARs) by Industry Sector

Day	AGRI	MINING	BASIC	MISC	CONS	PROP	INFRA	FIN	TSI
0	-0.57%	-0.53%	-1.17%	0.28%	-0.72%	-0.27%	-0.27%	0.56%	-0.26%
1	0.18%	-0.93%	0.07%	0.05%	-0.66%	-0.53%	0.32%	-0.16%	-0.45%
2	-0.13%	0.19%	-1.24%	-4.40%	-0.50%	-0.17%	-0.55%	-0.16%	0.13%
3	-0.38%	-1.08%	-1.04%	-0.03%	-0.48%	-0.39%	-0.73%	0.40%	-0.31%
4	-0.47%	-7.51%	0.16%	-0.68%	-0.58%	0.46%	-0.46%	-0.33%	0.02%
5	-0.03%	-0.67%	0.10%	0.62%	0.01%	0.27%	0.18%	-0.22%	0.09%
6	1.02%	-1.16%	-0.36%	-0.42%	-0.23%	-0.28%	-0.02%	0.65%	0.10%
7	0.42%	-0.51%	0.41%	0.14%	-0.24%	-0.03%	-0.63%	-0.34%	0.18%

Day	AGRI	MINING	BASIC	MISC	CONS	PROP	INFRA	FIN	TSI
8	0.18%	0.69%	-0.76%	-0.03%	-0.22%	0.09%	-0.18%	-0.34%	-0.01%
9	-0.41%	0.46%	0.08%	-1.38%	-0.65%	-0.74%	0.70%	-0.21%	-0.13%
10	-1.10%	-0.39%	-0.48%	-0.23%	-0.50%	-0.55%	-0.22%	-0.05%	-0.44%
11	-0.18%	-1.84%	-0.15%	0.11%	-0.39%	0.87%	-0.32%	0.15%	0.19%
12	0.69%	0.53%	-1.02%	0.87%	-0.68%	-0.15%	1.00%	0.08%	-0.50%
13	-0.12%	-0.60%	0.19%	0.16%	-0.74%	-0.24%	-0.48%	-0.06%	0.18%
14	0.21%	-0.52%	0.64%	-1.90%	-0.58%	-0.24%	0.10%	-0.25%	0.00%
15	-0.34%	-0.12%	-0.48%	1.53%	0.50%	-0.01%	-0.52%	0.05%	-0.64%
16	0.15%	0.32%	-0.94%	0.15%	-0.19%	0.10%	0.11%	-0.31%	-0.07%
17	-0.60%	0.02%	-0.36%	0.60%	0.51%	0.04%	0.25%	-0.48%	-0.24%
18	0.48%	-0.51%	0.12%	-0.18%	-0.11%	-0.03%	-0.41%	-0.56%	0.56%
19	-0.58%	-0.51%	-0.38%	0.02%	0.09%	0.39%	-0.31%	-0.51%	-0.02%
20	-0.24%	0.13%	-0.27%	0.18%	-0.58%	-0.63%	-0.39%	0.05%	0.17%
21	-0.56%	-0.20%	0.19%	-0.03%	-0.01%	-0.24%	0.48%	0.28%	-0.24%
22	-0.21%	-0.89%	0.29%	0.29%	-0.34%	-0.78%	0.20%	-0.48%	-0.64%
23	0.14%	-0.58%	0.11%	1.35%	-0.66%	-0.09%	-0.73%	0.28%	0.25%
24	-0.09%	-2.35%	0.45%	-0.38%	0.41%	0.02%	0.00%	0.48%	-0.31%
25	0.50%	0.62%	-0.60%	-0.66%	0.15%	0.18%	-0.13%	-0.38%	0.19%
26	0.04%	0.38%	0.51%	0.97%	-0.93%	-0.43%	-0.47%	0.44%	0.05%
27	-0.81%	-0.32%	0.02%	-0.35%	-0.56%	0.10%	-0.17%	-0.34%	0.06%
28	-0.04%	1.99%	-0.43%	0.36%	-0.50%	-0.36%	-1.46%	0.65%	0.67%
29	0.37%	-0.01%	-0.18%	-0.68%	-0.06%	-0.01%	0.14%	-0.23%	-0.08%
30	0.70%	0.10%	-1.13%	0.12%	-0.48%	-0.02%	-0.05%	-0.22%	0.46%

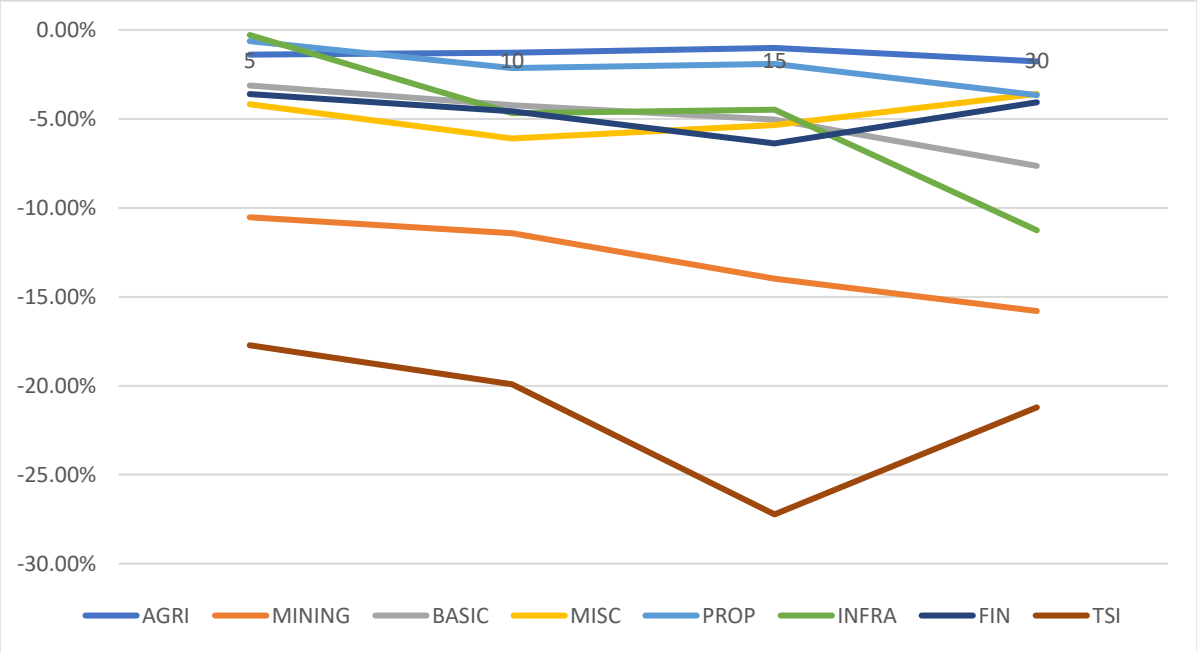

Figure 1: CAARs by IDX Industry Sector

Table 3 presents the CAARs, t-value, and the significance of the CAARs for each category of industry. Data calculation reject Hypothesis H_1 in industries of agricultures (AGRI) and property (PROP), as the CAARs of those industries are not significant in all investigated windows. The data indicate that at the confidence level of 95%, there is no significant variation in the stock returns post-earnings announcement of those industries, with the minimum CAAR of -1.10% and -0.78%, maximum CAAR of 1.02% and 0.87%, respectively.

We rejected the hypothesis H1 in the miscellaneous industry (MISC) and the infrastructure, utilities, and transportation (INFRA) as the CAARs are insignificant in one or more windows. The calculation shows that the stock returns in those industries negatively respond to the earnings announcement. However, the significance is not in a similar pattern. Miscellaneous industry (MISC) reacts immediately to the earnings announcement, but its significance is only until day 15. A different reaction is shown in infrastructure, utilities, and transportation (INFRA). The CAAR significance calculation discloses a delay in its response to the earnings announcement indicated by an insignificant CAAR in the window (0, +5), but then continuously significant up to the window of 30 days (0, +30).

Other industries of mining (MINING); basic industry and chemical (BASIC); construction, real estate, and building (CONS); financial (FIN), as well as trading, services, and investments (TSI), report significant negative CAARs in all windows. It implies that the public announcement made during earnings announcement provides negative information to the market by which the industries' stock market returns significantly decreases after the release of the announcements. The industry immediately responds to that information and continuously impacts up to 30 days after the announcements. Therefore, the study concluded that the earnings announcement provides new information in the industry sectors as indicated by the existence of significant abnormal returns in all investigated windows.

Tabel 3: The CAARs Significance in Several Event Windows

Industry	CAAR	t-value	Sig	Min	Max
AGRI					
CAAR (0, +5)	-1.40%	(0.94)	Not Sig	-0.57%	0.18%
CAAR (0, +10)	-1.28%	(0.61)	Not Sig	-1.10%	1.02%
CAAR (0, +15)	-1.01%	(0.39)	Not Sig	-1.10%	1.02%
CAAR (0, +30)	-1.77%	(0.49)	Not Sig	-1.10%	1.02%
MINING					
CAAR (0, +5)	-10.53%	(5.11)	Sig(-)	-7.51%	0.19%
CAAR (0, +10)	-11.43%	(3.92)	Sig(-)	-7.51%	0.69%
CAAR (0, +15)	-13.99%	(3.92)	Sig(-)	-7.51%	0.69%
CAAR (0, +30)	-15.80%	(3.13)	Sig(-)	-7.51%	1.99%
BASIC					
CAAR (0, +5)	-3.12%	(2.72)	Sig(-)	-1.24%	0.16%
CAAR (0, +10)	-4.23%	(2.61)	Sig(-)	-1.24%	0.41%
CAAR (0, +15)	-5.05%	(2.54)	Sig(-)	-1.24%	0.64%
CAAR (0, +30)	-7.64%	(2.72)	Sig(-)	-1.24%	0.64%
MISC					
CAAR (0, +5)	-4.18%	(3.56)	Sig(-)	-4.40%	0.62%
CAAR (0, +10)	-6.10%	(3.68)	Sig(-)	-4.40%	0.62%
CAAR (0, +15)	-5.34%	(2.63)	Sig(-)	-4.40%	1.53%
CAAR (0, +30)	-3.59%	(1.25)	Not Sig	-4.40%	1.53%
CONS					
CAAR (0, +5)	-2.94%	(3.39)	Sig(-)	-0.72%	0.01%
CAAR (0, +10)	-4.78%	(3.90)	Sig(-)	-0.72%	0.01%
CAAR (0, +15)	-6.66%	(4.44)	Sig(-)	-0.74%	0.50%
CAAR (0, +30)	0.39%	(4.68)	Sig(-)	-0.93%	0.51%
PROP					
CAAR (0, +5)	-0.63%	(0.69)	Not Sig	-0.53%	0.46%
CAAR (0, +10)	-2.15%	(1.66)	Not Sig	-0.74%	0.46%
CAAR (0, +15)	-1.92%	(1.21)	Not Sig	-0.74%	0.87%
CAAR (0, +30)	-3.67%	(1.63)	Not Sig	-0.78%	0.87%
INFRA					
CAAR (0, +5)	-0.29%	(0.28)	Not Sig	-0.73%	0.32%
CAAR (0, +10)	-4.68%	(3.25)	Sig(-)	-0.73%	0.70%
CAAR (0, +15)	-4.48%	(2.54)	Sig(-)	-0.73%	1.00%

Industry	CAAR	t-value	Sig	Min	Max
CAAR (0, +30)	-11.26%	(4.52)	Sig(-)	-1.46%	1.00%
FIN					
CAAR (0, +5)	-3.61%	(4.81)	Sig(-)	-0.33%	0.56%
CAAR (0, +10)	-4.57%	(4.32)	Sig(-)	-0.34%	0.65%
CAAR (0, +15)	-6.38%	(4.92)	Sig(-)	-0.34%	0.65%
CAAR (0, +30)	-4.07%	(2.22)	Sig(-)	-0.56%	0.65%
TSI					
CAAR (0, +5)	-17.72%	(22.06)	Sig(-)	-0.45%	0.13%
CAAR (0, +10)	-19.92%	(17.54)	Sig(-)	-0.45%	0.18%
CAAR (0, +15)	-27.23%	(19.57)	Sig(-)	-0.64%	0.19%
CAAR (0, +30)	-21.21%	(10.78)	Sig(-)	-0.64%	0.67%

Sig: Significant, Min: minimum; Max: maximum

The study continued to measure whether there is a significant variation in the cumulative average abnormal returns across nine industry sectors in the IDX market by using the One Way ANOVA Test. Table 4 presents the distribution of data of the CAARs in those industries in all event windows. Consistent with the previous *t*-Test results, the data shows that the trading, service, and investment (TSI); mining (MINING); and the basic industry and chemical (BASIC) are the most efficient market to the earnings announcement while agriculture and property are the least efficient industries.

Tabel 4: Data Distribution of CAARs in IDX Industry Sectors

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
					Lower Bound	Upper Bound		
AGRI	4	-.013650	.0031409	.0015705	-.018648	-.008653	-.0177	-.0101
MINING	4	-.129380	.0240512	.0120256	-.167650	-.091109	-.1580	-.1053
BASIC	4	-.050111	.0192390	.0096195	-.080724	-.019497	-.0764	-.0312
MISC	4	-.048040	.0113178	.0056589	-.066049	-.030031	-.0610	-.0359
CONS	4	-.034976	.0300352	.0150176	-.082769	.012817	-.0666	.0039
PROP	4	-.020926	.0124337	.0062169	-.040711	-.001141	-.0367	-.0063
INFRA	4	-.051766	.0453452	.0226726	-.123920	.020388	-.1126	-.0029
FIN	4	-.046584	.0121406	.0060703	-.065902	-.027265	-.0638	-.0361
TSI	4	-.215203	.0406896	.0203448	-.279949	-.150457	-.2723	-.1772
Total	36	-.067848	.0655866	.0109311	-.090040	-.045657	-.2723	.0039

The study performed a normality test and a homogeneity test to ensure that the CAAR data distribution is normal and homogeneous. Shapiro-Wilk normality test shown in Table 5 shows that all industries' CAAR data are insignificant, indicated by the value of more than 0.05, which indicates a normal distribution of the data. As shown in Table 6, the homogeneity of variances test also shows the insignificance value of more than 0.05, confirming the homogeneity among the sectors. Therefore, the study concludes that the data distribution of the CAARs is relatively normal, homogenous, and the One Way ANOVA Test is considered fit to be used.

Table 5: Normality Test for the CAAR Data Distribution

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Industry	Statistic	Df	Sig.	Statistic	Df	Sig.
CAAR	AGRI	.211	4	.	.983	4	.919
	MINING	.234	4	.	.943	4	.675
	BASIC	.243	4	.	.946	4	.694
	MISC	.211	4	.	.959	4	.774
	CONS	.176	4	.	.981	4	.905
	PROP	.231	4	.	.972	4	.853
	INFRA	.294	4	.	.930	4	.597
	FIN	.278	4	.	.895	4	.407
	TSI	.281	4	.	.917	4	.518

a. Lilliefors Significance Correction

Table 6: Homogeneity of Variances Test for the CAAR Data Distribution

		Levene Statistic	df1	df2	Sig.
CAAR	Based on Mean	1.777	8	27	.126
	Based on Median	1.210	8	27	.330
	Based on Median and with adjusted df	1.210	8	10.055	.381
	Based on trimmed mean	1.668	8	27	.152

Finally, the study continued to perform the analysis of variances of the CAAR across these nine industries. As presented in Table 7, the result shows a significant value of less than 0.05, indicates that the nine industries' cumulative average abnormal returns on IDX are significantly different. Therefore, we did not reject hypothesis H_2 and concluded that the degree of abnormal returns among the nine industries in IDX is significantly different.

Table 7: One Way ANOVA Test for the Significance of the CAAR

CAAR

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.133	8	.017	24.843	.000
Within Groups	.018	27	.001		
Total	.151	35			

CONCLUSION

This study concluded that there were significant variances in the information efficiency towards earnings announcement across nine industry sectors in IDX. The study rejected the market efficiency in agriculture (AGRI) and property, real estate, and building (PROP) industries as their cumulative average abnormal returns are not significant in all windows. The miscellaneous industry (MISC) showed that the industry reacts immediately to the earnings announcement but its significance is only for a short period. A different reaction was shown in the infrastructure, utilities, and transportation (INFRA) industry, which delays its response but continuously significant for a relatively long period. Other industries of mining (MINING), basic industry and chemicals (BASIC), construction, real estate, and building (CONS), financial (FIN), as well as trading, services, and investments (TSI), report significant negative CAARs in all investigated windows. It also concluded that earnings announcement provides negative information to the market by which most industries' stock returns are significantly and negatively reduces after the release. The findings indicated that the industry-specific factors influence abnormal returns surrounding the earnings announcements in the IDX market. The One Way ANOVA test also concluded that the cumulative average abnormal returns of the nine industries on IDX are significantly different.

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