

INVESTOR REACTION TO ANOMALY & RECOVERY SERVICE OF TELKOM-1 SATELLITE YEAR 2017

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ABSTRACT

The purpose of this study is to analyze the Indonesian capital market reaction to TELKOM-1 service anomaly incidents on August 28, 2017 and the recovery of TELKOM-1 satellite service on September 10, 2017 indicated by abnormal return (AR) and trading volume activity (TVA). This research uses Event Study method to analyze market reaction and t-test different to analyze difference between AR and TVA before and after event period. The sample used in this research is TELKOM shares as the service provider and the shares of the five major banks of service users; Mandiri, BNI, BRI, BTN and BCA using survey method of stock price data in IDX and observation of data from t-10 up to t + 10. The results showed abnormal return and trading volume activity in two periods of event varied but not statistically significant, either for TELKOM shares or group of five major banks. Significant differences in abnormal return and trading volume activity occur when compared between TELKOM shares and 5 Bank shares.

Key Words: Abnormal return (AR), Trading Volume Activity (TVA)

JEL Classification: C19, G13, G14

1. INTRODUCTION

Market reaction over the information submitted by the company is shown by the presence of the company's stock price changes. This reaction can be measured by using the return value as the price changes or by using the abnormal return (abnormal return). Abnormal return is the return of the investor that does not match the hope. Abnormal return in the form of the difference between the expected return with the return obtained. Other related market reaction over the information submitted by the company is transformed in the form changes of daily transaction volume and frequency of transactions. Stock trading volume, hereinafter referred to as the Trading Volume of Activity (TVA). TVA used to measure whether the individual financiers know information issued by the company and using it in the purchase or sale of shares, so that will benefit above normal (abnormal return).

On Friday, August 25, 2017, Telkom-1 Satellite had its service anomaly approximately 16.51 PM. This triggered a shift in the direction of the antenna Telkom-1 satellite that made satellite transponder services disrupted. As a result, a number of services that require satellite connections cannot be running optimally. These disorders also affect a number of services for banking and broadcasting. Telkom-1 satellite has 63 customers, where eight customers are VSAT service provider with 12,030 sites. While the total ground segment affected by this case more than 15,000 sites. Illustration of service anomaly of TELKOM-1 Satellite as shown in Figure 1 below.

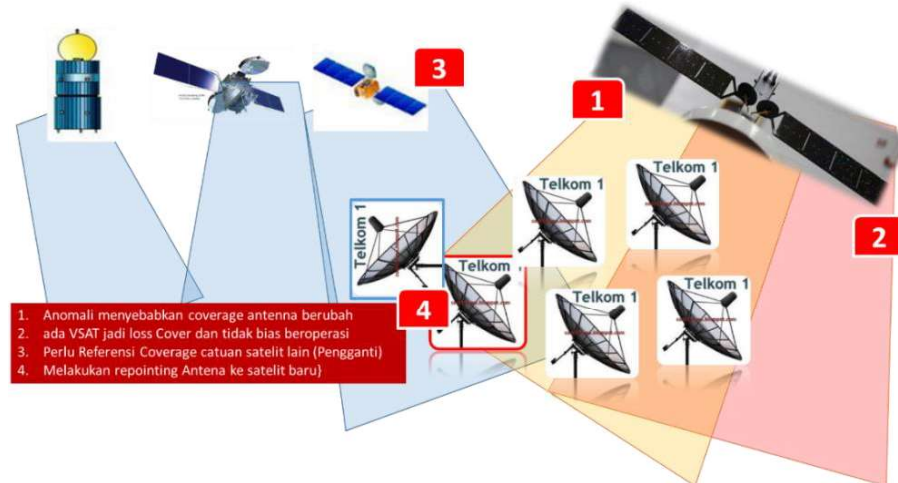


Figure 1. Illustration of TELKOM-1 Satellite Anomaly

In Figure 1 indicated that initial position of Satellite coverage was area-1, due to anomaly service it turned into area-2. It impact device antenna receiver (4), partially cannot receive information from TELKOM-1 Satellite and has to be changed the direction heading into another satellite coverage (3).

Revenue from satellite business contributed 0.6% total income of Telkom Group. Telkom-1 was insured to Jasindo, the insurance company in Indonesia, which has a strong track record in the sector. The impact cost of this event roughly 0.2% of revenue of TELKOM group. TELKOM provides satellite communication services to users, including the following: Broadcaster, banks, TNI/POLRI, Government, Enterprise and TELKOM themselves. This event affected the shares of TELKOM as a provider TELKOM-1 Satellite (Percentage shares of TELKOM in BEI was 2.47% shares) and shares of Five major banks (Mandiri (1.13% shares IDX), BNI (0.37% shares IDX), BRI (3% shares IDX), BTN (0.21% shares) and BCA (0.3% shares IDX)). A total of five Banks have a proportion of shares around 5% of the total number of shares that are on the BEI. In General, the Bank uses the TELKOM-1 services for ATM connection with VSAT terminal support. This becomes important because it involves 15,000 sites scattered throughout Indonesia ATM and involve large national banks: Bank Mandiri, BRI, Bank BNI, Bank BTN and BCA.

Given the big amount of site customers and spread coverage then this incident caused big cost and impact on the company's image service providers and service users. The company's stock price will tend to decline. Users of Telkom-1 satellite dominated by banking and Government, including the Indonesian armed forces and police which has very broad covering major cities to remote locations throughout Indonesia. The five main banks as the users of TELKOM-1 satellite service are: Bank Mandiri, BRI, BNI, BTN and BCA.

The event examined consists of two parts the first part on on 28 August 2015 when TELKOM did a press conference and the second part on September 10, 2017 when TELKOM did a press conference of the associated recovery services of TELKOM-1.

The research period is 21 days Exchange (t-10 to t + 10) with the announcement of the first took place on 28 August 2017 and the second event occurred on 10 September 2017.

In the event of satellite Anomaly T0 on 28 August 2017 will be researched the abnormal return difference and the difference in Trading Volume of Activity for the stock of TELKOM Stock, 5 banks and TELKOM Shares with the stock comparison to 5 banks. Similarly with the event of satellite Recovery with T0 10 September 2017.

2. LITERATURE REVIEW

Abnormal return can occur due to certain events, such as national holidays, the beginning of the month, the beginning of political atmosphere resistant, which is unpredictable, events, stock split, offer Prime stock, and others. Abnormal return is generally influenced by economic events, the non-economic and political events. Macro-economic factors such as interest rates, inflation, monetary and fiscal policy affect the stock market overall, while the micro economic factors affect the performance of individual companies. The non-economic events such as earthquakes, floods, plane crash, terrorist attacks and natural disasters can also have a significant effect on the country's economy. Capital market integration is influenced by some events that occur, such as the crisis of the economic, political crisis and natural disaster crisis.

Such events sometimes lead to the increasing integration of the capital markets but can also lead to capital markets increasingly segmented (Nainggolan, 2010).

However, some recent research event study tend to observe the reaction of the stock market by using a variety of events that are not associated with economic activities. According to Yanti, Firga, (2012). Examine abnormal return around the days of the announcement of the Syariah Indonesia stock index (ISSI), to analyze the data is done with the study of events. The estimation period used is 15 days, 10 days before and 5 days after the launch of ISSI. The population in this research is the whole company are registered into the ISSI. While the sample is determined by the method of purposive sampling. The results of this research concluded the presence of abnormal return of shares during the period of observation 15 days before the launch of ISSI. As for the period of 10 days and 5 days before the launch and 15 days, 10 days, 5 days after the launch of ISSI test results one sample t-test showed that there is no abnormal return. On testing by using a paired sample t-test can be concluded there is a difference of abnormal return in the period of observation is 15 days. While observation for a period of 10 days and 5 days there was no difference in abnormal return (AR).

Whereas Istanti (2013) in her research concluded that there was a relationship between dividend policies with stock prices on the Indonesia stock exchange LQ45 and there is the influence of the dividend policy against stock price LQ45 in Indonesia stock exchange.

Ramiah and Graham (2013) research on the impact of domestic and international terrorist attacks against Indonesia's stock market with the findings showed that the equity portfolios were affected by the September 11 attacks and the Bali bomb attacks.

Chandra, at.al. (2014) researching on event study related to political events in Indonesia. Such research aims to know the difference in average abnormal return (AAR) and the average trading volume of activity (ATVA) group LQ-45 before and after the presidential elections in Indonesia years 2004 and 2009. Data analysis technique used is to compare paired sample t-test. The research results showed that there was no difference in average abnormal return and average trading volume of activity significantly on the LQ-45 group before and after the presidential elections in Indonesia years 2004 and 2009.

Sajid Hassan (2014) researching on the influence of political events in Pakistan against the stock market, with the results show that political events in Pakistan to return the shares on the stock exchanges of Pakistan.

3. METHODOLOGY

3.1 RESEARCH QUESTIONS

We formulated the problem with research questions as follows:

1. Is there any significant difference of the abnormal return (AR) and trading volume activity (TVA) for TELKOM share while the announcement of TELKOM-1 satellite anomalies on 28 August 2017?
2. Is there any significant difference of the abnormal return (AR) and trading volume activity (TVA) for TELKOM share at the time of the announcement of the recovery of TELKOM-1 on September 10, 2017?
3. Is there any significant difference of the abnormal return (AR) and trading volume activity (TVA) for Banks share at the time of the announcement of TELKOM-1 anomaly on Friday 28 August 2017?
4. Is there any significant difference the abnormal return (AR) and trading volume activity (TVA) for Banks share at the time of the announcement TELKOM-1 recovery on September 10, 2017?
5. Is there any significant difference of the abnormal return (AR) and trading volume activity (TVA) between TELKOM shares compared to the stock of the bank on 28 August 2017?
6. Is there any significant difference of the abnormal return (AR) and trading volume activity (TVA) between TELKOM shares compared to the stock of the bank on September 10, 2017?

3.2 MODELING

In this paper, we uses Event Study method to analyze market reaction and t-test different test to analyze difference between AR and TVA before and after event period. The samples used in this research are TELKOM shares as the service provider and the share of the five major banks; Mandiri, BNI, BRI, BTN and BCA using survey method of stock price data in IDX and observation of data $t-10$ up to $t + 10$.

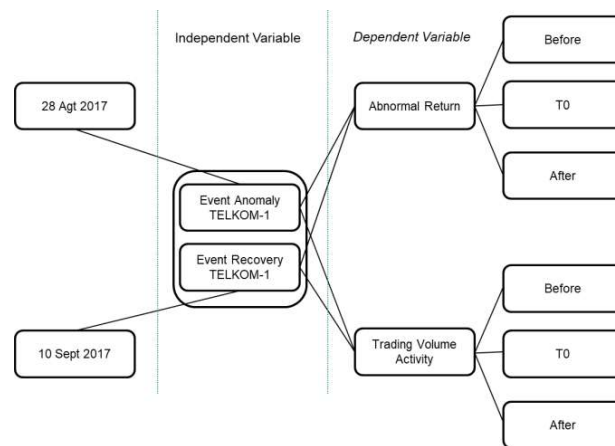


Figure 2. The Framework & Model

For event of satellite Anomaly with T0 on 28 August 2017 will be researched the abnormal return difference and the difference in Trading Volume of Activity for the stock of TELKOM, 5 banks and TELKOM Shares compared to 5 banks. Similarly with the event of satellite Recovery with T0 10 September 2017.

Independent variables used in this study is the Event announcement of TELKOM-1 Satellite anomaly on 28 August 2017 and recovery of TELKOM-1 satellite service on 10 September 2017. Table 1 the following submitted a list of variables, definitions and sources of reference.

Table 1. Operation Variables

| Variabel | Simbol | Definisi | Ukuran | Sumber |
|--------------------------------|--------|---|---|---|
| <i>Abnormal Return</i> | AR | It is the difference between the return actually happens with expectation return | $AR_{it} = R_{it} - E(R_{it})$ | Laksana and Taman (2014). Chandra, Anastasia (2014) |
| <i>Trading Volume Activity</i> | TVA | The Volume of trading Activity in comparison the number of shares i formulated traded at time t with the total number of shares | $TVA = \frac{\sum \text{saham } i \text{ yg diperdagangkan waktu } t}{\sum \text{saham } i \text{ yg beredar saat } t}$ | Laksana and Taman (2014). Chandra, Anastasia (2014) |

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 when i t.

Data analysis in this research will be done separately for each event announcement, first happened on 28 August 2017 and the second one occurred on 10 September. Prior to further testing will be conducted test of normality in order not to violate the basic assumptions of the statistical tools.

Statistical testing against abnormal return uses to see the significance of abnormal return in the period of event (event window). The statistically significant is not synonymous with zero (positive to negative for good news and bad news). Testing-t (t-test) is used for this purpose, one sample t-test to test at the moment T0, while to compare the abnormal return before and after the announcement of the anomaly and recovery of TELKOM-1 satellite service using paired samples t-test. To compare TVA before and after the announcement of the anomaly and recovery of TELKOM-1 satellite service also uses a paired sample t-test. To compare the abnormal return and TVA in anomaly event and recovery event between stocks TELKOM and bank shares performed using paired samples t-test.

In General, to test the zero hypothesis which States that the average abnormal return is equal to zero, the t test is used, whereas as standard use standardization of Abnormal Return (SAR). In this study, t tests were used to test the null hypothesis that explains that the average abnormal return equal to zero is as follows:

$$T_{calculation} = \frac{\beta}{Error Stanadrd Estimation}$$

or,

$$SAR_{it} = \frac{AAR_{it}}{Error Standard Estimation}$$

3.3 DATA

The data being used in this research is secondary data research. The information in the form of secondary data stock prices of TELKOM and major banks stocks (Mandiri, BRI, BNI, BCA and BTN) registered in BEI period August-September 2017. Such data will be used as the basis for calculating the variables that the researcher is already specified.

This study uses the data from Indonesia stock exchange with good liquidity and represents the whole of the stock that is on a list of shares in Indonesia stock exchange. In order to represent the entire activity then selected stocks TELKOM shares and banks that became the main TELKOM-1 satellite service such as: Bank Mandiri, BRI, BNI, BCA and BTN.

Table 2. Code of TELKOM Shares and 5 Banks

| No | Code | Company Name |
|----|------|-----------------------------|
| 1 | TLKM | PT Telekomunikasi Indonesia |
| 2 | BMRI | PT Bank Mandiri |
| 3 | BBTN | PT Bank Tabungan Negara |
| 4 | BBRI | PT Bank Rakyat Indonesia |
| 5 | BBNI | PT Bank Negara Indonesia |
| 6 | BBCA | PT Bank Central Asia |

(Source: www.idx.co.id)

The samples are members of a population selected to involve in research, both for observed, given the treatment, nor asked for opinions that are being explored (Indrawati, 2015).

In this study, the method that is carried out for sampling is the purposive sampling, namely sampling based on certain criteria. The specified criteria are as follows:

1. the company which provided the sample is firm TELKOM and banking companies that are included in the main users of TELKOM-1 satellite service IE: Bank Mandiri, BRI, BNI, BCA and BTN in the period of August and September 2017 in successive – takes part in both events anomaly and recovery of TELKOM-1 satellite service. This is to keep the consistency of the results over these events.

2. The time period of occurrence (event period) of TELKOM and companies whose shares are included in the entrance of the main users of banking services of TELKOM-1 Satellite: Bank Mandiri, BRI, BNI, BCA and BTN in the period of August and September 2017 is not do a stock split, dividend announcements, mergers, right issues. So the sample selected this really shows that the later return the stock completely clean from cofounding effect brought about by the company.

The methods used in this research study, in which event is the event study is a study that examines the market reaction against an event (event) for which information is published as of the announcement. This research uses the method of market-adjusted model to find the value of your expected return is next used to calculate abnormal return. The first step to do is determine the research period. The research period is 21 days Exchange (t-10 to t + 10) with the announcement of the first happening on the 28th August 2017 and the second event occurred on 10 September 2017. Event identification used is presented in Figure 3.2 Figure 3.3 and as follows:

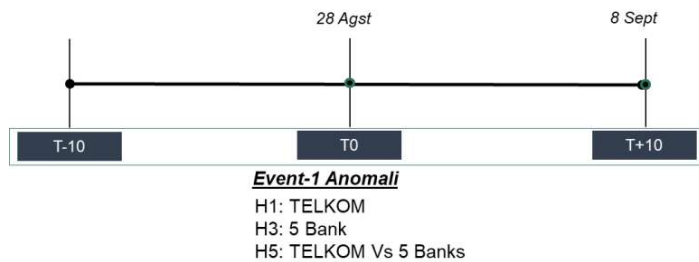


Figure 3. Identification Event Anomaly of TELKOM-1



Figure 4. Identification Event Recovery Services of TELKOM-1

4. RESULTS AND DISCUSSION

To avoid confounding effects, then the necessary data of companies that do a corporate action that is selected in this research the companies that there is no dividends release during the period of the Event. Telkom and the 5 banks are not included in the company's share dividend in the range of the event.

As for the number of shares of TELKOM and 5th of the bank is as shown in the table below.

Table 3. Number of TELKOM Shares and 5 banks in BEI

| NO | Company | Code | Stocks | Remark | |
|----|---------|------|-----------------|-----------------|----------------|
| 1 | TELKOM | TLKM | 100,799,996,399 | 100,799,996,399 | Telkom Stocks |
| 2 | Mandiri | BMRI | 46,199,999,998 | 204,266,584,138 | 5 Banks Stocks |
| 3 | BTN | BBTN | 8,623,285,575 | | |
| 4 | BRI | BBRI | 122,112,351,900 | | |
| 5 | BNI | BBNI | 15,121,201,105 | | |
| 6 | BCA | BBCA | 12,209,745,560 | | |

The percentage shares of TELKOM as a provider TELKOM-1 Satellite in bursa was 2.47% shares and the shares of Five major banks (the standalone (1.13% shares IDX), BNI (0.37% shares IDX), BRI (3% shares IDX), BTN (0.21% shares BEI and BCA (0.3% shares of IDX). A total of five Banks have a proportion of shares around 5% of the total number of shares that are on the BEI.

Table 3. Resume Statistics Test Results

| | Variable | Mean | Std. Deviation | Std. Error Mean | t | df | Sig. (2-tailed) |
|----|----------|-----------|----------------|-----------------|--------|----|-----------------|
| H1 | AR | 0.001961 | 0.009919 | 0.00313674 | 0.625 | 9 | 0.547 |
| | TVA | -0.000030 | 0.000151 | 0.00004773 | -0.629 | 9 | 0.545 |
| H2 | AR | -0.001113 | 0.012119 | 0.00383241 | -0.290 | 9 | 0.778 |
| | TVA | -0.000140 | 0.000310 | 0.00009790 | -1.430 | 9 | 0.186 |
| H3 | AR | -0.001113 | 0.012119 | 0.00383241 | -0.290 | 9 | 0.778 |
| | TVA | -0.000054 | 0.000279 | 0.00008818 | -0.612 | 9 | 0.555 |
| H4 | AR | -0.004254 | 0.012739 | 0.00402837 | -1.056 | 9 | 0.318 |
| | TVA | -0.000131 | 0.000435 | 0.00013763 | -0.952 | 9 | 0.366 |
| H5 | AR | 0.000889 | 0.011655 | 0.00254344 | 0.350 | 20 | 0.730 |
| | TVA | -0.000306 | 0.000176 | 0.00003846 | -7.948 | 20 | 0.000 |
| H6 | AR | -0.003146 | 0.009329 | 0.00203575 | -1.545 | 20 | 0.138 |
| | TVA | -0.000293 | 0.000280 | 0.00006119 | -4.786 | 20 | 0.000 |

To test whether the variables are independent or not the Event significantly influential Events/partial bound against the dependent variable/Abnormal Return and Trading Volume of Activity, then testing that was done was the one sample t-test and followed with paired t test for the significance of before and after the event .

Based on statistical processing data in sub chapter 4.3, it can be stated that the independent variable Event has positive but not significant effect on dependent variable Abnormal Return and Trading Volume Activity. By statistical testing for the six hypotheses can be researched as in Table 3.

Differences in abnormal return both before and after the occurrence of no significant difference. It can be explained that TELKOM-1 Satellite anomaly service information is received by the society and responded well according to the announcement and clarification given by TELKOM and the government so that the society, especially market participants can anticipate the event well. So that the stock price changes but still follow the stock price trend change that occurred during the observation period. In the observation and test results also illustrated that there is no significant difference of Abnormal Return (AR) and Trading Volume Activity (TVA) on both events both in TELKOM and Bank shares.

Meanwhile, based on the result of statistical test of TELKOM share comparison and 5th share of Bank, it can be concluded as follows:

1. In the case of abnormal return difference between TELKOM shares and 5 banks shares there is no significant difference. It can be explained that TELKOM-1 Satellite anomaly service information received by the public is responded well according to the clarification announcement submitted by TELKOM and the government so that society, especially market players can anticipate the event well.
2. In the case of differences in trading volume activity (TVA) between TELKOM shares and shares of 5 banks there is a significant difference. This means that the market reaction to TELKOM shares is more significant compared to the shares of 5 banks. It should be a special note for TELKOM, because although there is no abnormal return difference before and after event, but in terms of stock trading volume there is a significant difference between TELKOM's share trading volume as a service provider compared to TELKOM-1 service user, these are the five banks. This is because the market reacts to TELKOM shares that are more directly related to TELKOM-1 anomalies, with the occurrence of larger stock transaction volumes, compared to the service users, in this case the five banks.

The results of this study align and support previous research conducted by: Danupranata and Afianingsih (2002), Research Tjandra, Ronowati. (2006), Yusuf et.al (2009), Yanti, Firda, (2012), Sentia and Putra (2013) and Chandra, at.al. (2014) which generally states that an Event will cause a difference between the average abnormal return before and during and after the announcement. While the abnormal return of shares in the couples before the period after it turns out there is no significant difference. The results of this test indicate that there is the same level of market expectations of the abnormal share returns. This means that in the period before the after event market ability to get abnormal return is the same. The same level of expectation shows that no public investor (new investor) has more information to get an abnormal return. This implies that the overall market does not react to the event.

The results of this study are not in line and support research conducted by Istanti (2013), Ramiah and Graham (2013), Sajid and Hassan (2014), Femianita and Asandimitra (2014) and Sedyoko (2017) respectively in his research concluded that there is a relationship between the event and the stock price on the Stock Exchange there is an effect of the event on the related stock price in the Stock Exchange.

With the results of research and discussion above then there are implications to some related parties as follows below.

4.1. IMPLICATIONS FOR TELKOM

This satellite anomaly event has a significant cost impact for TELKOM. TELKOM incurred a considerable cost of approximately 0.22% of TELKOM's revenue in group with the three major components of expenses arising from the incident of TELKOM-1 satellite anomalies are sequentially the cost of leasing foreign transponders (64% of cost), the cost of repointing antenna (18.5%) and Penalty Customer (9.5%).

Taking into account the results of the study which showed no significant difference in abnormal return and trading activity volumes before and after the event, but behind there are other costs borne by material ie lost customers, corporate image and customer and public trust on the planning and quality TELKOM services forward in this satellite service. The fulfillment of the SLA (Service Level Agreement) warranty becomes an illustration of TELKOM's commitment to fulfill service guarantee with a reliable system.

Evaluation and monitoring of system age is absolutely done by considering not only practice-based industry but also considering age based on the manufacturer's initial design. This is as one of the anticipated risks with the start of planning the preparation of satellites and replacement systems. TELKOM will launch a new satellite, TELKOM-4 in Q2 2018. While in December 2017 Telkom conducts mergers & acquisitions of satellite companies domiciled in Malaysia, in addition to increasing coverage as well in expanding into the international market.

In addition, the preparation of backup systems and continuing to modernize the network by not relying on satellites but switching to fiber-optic network systems and radio waves, especially for enabling areas, is a major consideration for future network development solutions. So the complexity that occurs during interruptions and anomalies can be reduced far below the conditions encountered at the time of satellite service anomalies.

4.2. IMPLICATIONS FOR THE BANK

For banks, these anomalous events have implications that communications systems are built, especially for direct customer access (generally via ATM), so as not to rely on a single communications service provider. In general the bank has a replacement support system that will take over the system when the main system is disrupted. In some location solutions using modem devices instead of VSATs are a better solution in terms of quality and availability, although there is a cost for setting up this model. Another location is done by repointing the antenna to be directed toward the new satellite position. Costs that also arise not least for this activity.

Setup backup system, especially with other service providers with other transmission mode if possible be a viable option and solution. Besides, along with technological developments, communicant system with modem by modernizing the network switch to fiber optic network and radio wave system, become the main consideration for solution development of next communication solution. Improving SLA contracts with service providers is crucial especially with regard to the articles dealing with backup systems and quality assurance and service reliability.

4.3. IMPLICATIONS FOR INVESTORS

For investors this incident indicates that what is done by TELKOM in doing recovery and publication of the incident and the process done become a picture of TELKOM response to this wide impact event.

Response made positive and good response by the market so that there is no fluctuation of differences between AR and TVA significant between before and after event. The key word in this incident is the response and communication from TELKOM.

5. CONCLUSIONS AND RECOMMENDATIONS

After conducting research and discussion of Investor Reaction to Anomaly Announcement and Recovery of Satellite Service TELKOM-1 (Case Study In Indonesia Stock Exchange for TELKOM Shares and shares of 5 banks), then hereinafter we conclude some things as follows:

1. Based on statistical processing, it can be concluded that the independent variable Event positive effect on the dependent variable Abnormal Return and Trading Volume Activity but not significant.
 - a. Differences in abnormal return both before and after the occurrence of no significant difference.
 - b. It can be explained that TELKOM Satellite anomaly service information is received by the society and responded well according to the announcement and clarification given by TELKOM and the government so that the society, especially market participants can anticipate the event well.
 - c. There were no significant differences in abnormal return (AR) and Trading Volume Activity (TVA) on both events both in TELKOM and Bank shares.
2. Based on the comparative statistical data processing of TELKOM's share test and the Bank's 5th Shares:
 - a. Differences in abnormal returns between TELKOM shares and 5 banks' shares are not significantly different.
 - b. It can be explained that TELKOM Satellite anomaly service information received by the public is responded well according to the clarification announcement submitted by TELKOM and the government so that society, especially market players can anticipate the event well.
 - c. There is a significant differences In TVA differences between TELKOM shares and 5 banks' shares. It can be explained that the market reaction to TELKOM shares is more significant compared to the 5 bank stocks on trading volume activity parameters in both events
3. TELKOM should consider the risk factors due to these satellite anomaly events with substantial cost impact by preparing more feasibly the feasibility of satellite operations and the preparation of backup systems that support the operation of satellite services, including the preparation of replacement satellites according to the required capacity.
4. Banks should set up backup systems, especially with other service providers with different transmission modes so that the level of service availability can be well maintained.

5. Investors are advised to continue to buy TELKOM shares as stocks with large market capital to get a gain with long-term investment.

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