THE MACROECONOMIC SURPRISE EFFECTS ON LQ45 STOCK RETURN VOLATILITY

Tommy Andika
Idqan Fahmi
Trias Andati
Business School, Bogor Agricultural University, Indonesia

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Abstract: Surprise macroeconomic news causes high volatility in stock market return to the stock market becomes riskier. This study aims to analyze the effects of surprise from the announcement of the United States (US) and domestic macroeconomic news on the LQ45 stock returns volatility. There are 25 stocks chosen because consistently in LQ45 during the 2013 - 2018 research period. The Generalized Autoregressive Conditional Heteroscedasticity (GARCH) model is used to analyze the volatility of returns for each stock. The analysis shows that negative surprise from the Bank Indonesia benchmark interest rate, positive surprise from Indonesia's trade balance, positive surprise from Consumer Price Index US, and positive surprise from ISM Manufacturing US have a significant effect in reducing volatility return and making most LQ45 Stocks return more stable and less risky. Other macroeconomic surprises show different directions of influence. Finally, this study also provides recommendations for the investor to choose stocks according to their respective risk profiles. The risk averse investor can invest in PT Astra International Tbk (ASII), PT Lippo Karawaci Tbk (LPKR) and PT AKR Corporindo Tbk (AKRA) which have low volatility during the release of surprise macroeconomic, while the risk taker investor can invest to PT Astra Agro Lestari Tbk (AALI), PT Vale Indonesia Tbk (INCO), and PT. Media Nusantara Citra Tbk (MNCN) which respond to many surprises of macroeconomic news.

Keywords: Macroeconomic surprise, volatility, GARCH, LQ45 stocks.

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Corresponding Author: Tommy Andika, Business School, Bogor Agricultural University, Indonesia, DOI: http://dx.doi.org/10.21776/ub.jam.2019.017. 02.06

Announcement of macroeconomic news is one of the topics that attract the attention of researchers in the world because it can change the volatility of asset returns in some financial markets. Several studies have shown that the release of macroeconomic news influences the volatility of asset returns including the stock market by Bernile et al. (2016), Singh et al. (2013), Vrugt (2009), the bond market by Quadghiri et al. (2016), Chatrath et al. (2012), Balduzzi et al. (2001), the foreign exchange market by Hutchison and Sushko (2013), Laakkonen and Lanne (2008), Andersen et al. (2003), and the commodity markets by Elder et al. (2012), Roache and Rossi (2010), Hess et al. (2008).

According to Relly and Brown (2012), market prices will adjust to the information obtained. These adjustments can over or under adjust from what they

should, cause of buying and selling decisions by the investor on information received to maximize their profits. One of the information received by the market is when the macroeconomic news announcement is not the same as the market expectation or called surprise.

Surprise from the announcement of macroeconomic news makes investor quickly adjust the previously expectation with the actual news that has been released, causing high volatility in asset returns. Volatility describes the level of risk in the financial market. High volatility represents a high risk, whereas low volatility represents a low risk. Therefore, it is important to analyze the surprise macroeconomic news announcement to know the level of risk of a financial asset and find out the potential return that can be taken after the release of the news.

Many researchers showed the surprise effect of macroeconomic news on changes in volatility in asset returns including Andersen et al. (2007) said that surprise macroeconomics was able to change the return and volatility of returns on the stock, the bond and the foreign exchange markets in the US, UK and Euro. Bernile et al. (2016) conducted a study with different surprise level and succeeded in proving that there was a significant rate of return on surprise and no surprise macroeconomic news on the S & P 500 stock market. While the research conducted by Cakan et al. (2015) showed a negative and positive macroeconomic surprise of the developed country had a different effect on the volatility of stock market returns in Asia Pacific countries.

Surprise research in Indonesia not only examined domestic macroeconomic news but also observed the surprise of developed country macroeconomic news such as the United States (US). Like the research conducted by Untoro (2006) which examined the surprise effect on the movement of the Rupiah exchange rates and Ervina (2015) which examined the surprise effect on Indonesia Government Securities (SUN). This study will also capture the surprise effects of the US and domestic macroeconomic news on LQ45 stocks. LQ45 stocks are chosen because they have good liquidity, large market capitalization, high trading frequency, and good growth prospects and financial conditions.

The US macroeconomic news observed is the Consumer Price Index (CPI), Producer Price Index (PPI), ISM manufacturing, and unemployment which refers to the study of Nikkinen et al. (2008), Cakan et al. (2015), and Balciar et al. (2017). While the domestic macroeconomic news observed are Bank Indonesia's benchmark interest rates, CPI, trade balance, and GDP. The selection of macroeconomic news is based on previous studies that have been done and based on the availability of market expectations/market consensus data from financial market analysts/economists at Bloomberg. The data used is daily closing data from June 2013 until June 2018. Each surprise macroeconomic variable will be divided into positive surprises and negative surprises. In general, the method used in this research follows the frame of mind by Cakan et al. (2015), Andritzky et al. (2007) and Ervina (2015) use the GARCH (1,1), model. The results of the analysis will show which macroeconomic news announcement surprise that significantly affects the LQ45 stocks return volatility, so the investor can find out which stocks are riskier so they can invest according to their risk profile respectively.

METHOD

This study used secondary data. First, data of daily stock trading for the last 5 (five) years during June 2013 to June 2018 and second, macroeconomic data from US (CPI, PPI, unemployment, ISM Manufacturing) and from domestic (Bank Indonesia benchmark interest rates, CPI, trade balance, GDP) obtained from Bloomberg terminal. To capture the effect of surprise using the approach taken by Andritzky et al. (2007) which is using a three day event window, which defines an announcement event from the day preceding to the day following the announcement.

The sample in this study is stocks classified as LQ45. The sampling technique used purposive sampling technique with the criterion of active stocks traded and consistently in the LQ45 group during the study period. There are 25 stocks selected as in table 1. Process and analysis of data generally using the Microsoft Excel and Eviews application.

Tabel 1 Research's ample

No	Corp Name (Tbk)	Code	No	Corp Name (Tbk)	Code
1	PT Astra Agro Lestari	AALI	14	PT Bumi Serpong Damai	BSDE
2	PT PP London Sumatra	LSIP	15	PT Lippo Karawaci	LPKR
3	PT Adaro Energy	ADRO	16	PT Jasa Marga	JSMR
4	PT Vale Indonesia	INCO	17	PT Perusahaan Gas Negara	PGAS
5	PT. Bukit Asam	PTBA	18	PT Telkom Indonesia	TLKM
6	PT Indocement Tunggal Prakarsa	INTP	19	PT Bank Central Asia	BBCA
7	PT Semen Indonesia	SMGR	20	PT Bank Negara Indonesia	BBNI
8	PT Astra International	ASII	21	PT Bank Rakyat Indonesia	BBRI
9	PT Gudang Garam	GGRM	22	PT Bank Mandiri	BMRI
10	PT Indofood CBP Sukses Makmur	ICBP	23	PT AKR Corporindo	AKRA
11	PT Indofood Sukses Makmur	INDF	24	PT. Media Nusantara Citra	MNCN
12	PT Kalbe Farma	KLBF	25	PT United Tractors	UNTR
13	PT Unilever Indonesia	UNVR			

Sources: Indonesia stocks exchangeCalculation of return uses the following equation:

$$R_t = ln\left(\frac{P_t}{P_{t-1}}\right)$$

Where R_t is the rate of return on day *t*, P_t is the stock price at *t*, and P_{t-1} is the stock price at *t-1*.

Surprise calculations refer to the study of Paiardini (2014) and Balduzzi et al. (2001), is the difference between the release of actual data and market expectations or market consensus (median Bloomberg survey) as follows:

$$S_k = A_k - F_k$$

Where: S_k is a surprise macroeconomic news *k*, A_k is the actual data news *k*, and F_k is market expectations of news *k*. Meanwhile, specifically for the announcement of Bank Indonesia benchmark interest rates, this study refers to the research of Bernile et al. (2016), which sets a threshold at ± 12.5 bps.

If Sk > 0 indicates a positive surprise, it means that the actual data released is bigger than market expectations or market consensus data from financial market analysts or economists. Otherwise, if Sk < 0, indicates a negative surprise means the actual data released is smaller than the market expectations/market consensus data from financial market analysts or economists. Dummy variables are added in each US and domestic macroeconomic news to capture the surprise effects of actual data announcements with market expectations/consensus for three days of windows events, Cakan et al. (2015). The dummy variable (PS_k) is positive surprise = 1 if $S_k > 0$ and 0 otherwise. The dummy variable (NS_k) is negative surprise = 1 if $S_k < 0$ and 0 otherwise. The equation is as follows:

$$R_t = c + u_t$$

$$u_t \sim N(0, h_t)$$

$$h_t = \omega_0 + \omega_1 \varepsilon^2_{t-1} + \omega_2 h_{t-1} + \sum_{k=1}^{K} (\eta_k PS_{k,t} + \mu_k NS_{k,t}) + \varepsilon_t$$

Where : R_t is stock return at time *t*, h_t is conditional variance which shows volatility, ω_1, and ω_2 are ARCH and GARCH coefficients, η_k and μ_k are coefficients of positive and negative surprise from macroeconomic news *k*, $PS_{k,t}$ and $NS_{k,t}$ is positive and negative surprise of macroeconomic news *k* at time *t*, and *t+1* for US macroeconomic news.

Before calculating volatility, stock returns (R_t) must be stationary. Next, eliminate the problem of autocorrelation with the Box-Jenkin model. According to Widarjono (2017), the Box-Jenkin Method

consists of several models, and there are the Autoregressive (AR) model, Moving Average (MA), Autoregressive-Moving Average (ARMA), and Autoregressive Integrated Moving Average (ARIMA). While the goodness of fit estimation parameters can be seen based on the biggest adjusted R^2, or the smallest Akaike Information Criterion (AIC) and Schwartz Criterion (SC) (Nachrowi and Usman 2006), furthermore volatility can be calculated by the GARCH (1,1) model.

RESULT

This section will show the influence of the positive and negative surprise announcement on US and domestic's macroeconomic news on the LQ45 stocks return volatility. Details of US and domestic's macroeconomic news surprise will be analyzed during June 2013 - June 2018 is shown in table 2.

Table 2 Details of positive and negative surprise from macroeconomic news variable

No	Macroeconomic news	No. Obs	(+) Surprise	(-) Surprise
1	Bank Indonesia benchmark rate	61	9	5
2	Indonesia's CPI	61	24	36
3	Indonesia's *Trade balance*	61	37	25
4	Indonesia's GDP	20	7	13
5	CPI U.S.	61	12	21
6	PPI U.S.	61	28	22
7	*Unemployment*	61	18	25
8	ISM *Manufacturing* PMI	61	34	26

Sources : Bloomberg

Stationarity test used the unit root test Augmented Dickey Fuller (ADF) with the Eviews application to ensure the return data of each stock is stationary. Table 3 shows that all stock return data are stationary at a 10% significance level.

Table 3 unit root test results for the LQ45 index and LQ45 stocks return

No	Stock Return	ADF Test Statistic	Critical Value (10%)	No	Stock Return	ADF Test Statistic	Critical Value (10%)
1	LQ45	(22.858)	(2.568)	14	UNVR	(39.469)	(2.568)
2	AALI	(31.309)	(2.568)	15	BSDE	(34.043)	(2.568)
3	LSIP	(33.533)	(2.568)	16	LPKR	(30.502)	(2.568)
4	ADRO	(34.842)	(2.568)	17	JSMR	(27.381)	(2.568)
5	INCO	(30.977)	(2.568)	18	PGAS	(34.237)	(2.568)
6	PTBA	(34.294)	(2.568)	19	TLKM	(22.038)	(2.568)
7	INTP	(34.762)	(2.568)	20	BBCA	(34.774)	(2.568)
8	SMGR	(33.732)	(2.568)	21	BBNI	(25.235)	(2.568)
9	ASII	(23.101)	(2.568)	22	BBRI	(32.082)	(2.568)
10	GGRM	(33.561)	(2.568)	23	BMRI	(26.632)	(2.568)
11	ICBP	(23.700)	(2.568)	24	AKRA	(33.819)	(2.568)
12	INDF	(23.517)	(2.568)	25	MNCN	(20.550)	(2.568)
13	KLBF	(23.325)	(2.568)	26	UNTR	(36.670)	(2.568)

Sources: Authors estimates

Note: Data can be declared stationary if the ADF value is smaller than the Critical Value.

After stocks return data have been proven stationary, then the diagnostic test is performed on the residuals to analyze the autocorrelation problem. Autocorrelation diagnostic was analyzed using Correlogram Q-Statistic analysis, if there are spikes in the lag Autocorrelation Function (ACF) and Partial Autocorrelation Function (PACF) with significant p-value, so the model has autocorrelation problem in residual. The autocorrelation problem can be removed by the Box-Jenkin method. Table 4 shows the Box-Jenkin model chosen for each LQ45 stock return.

Table 4 Box-Jenkin model for the LQ45 index and LQ45 stocks return

No	Saham	Model Terbaik	No	Saham	Model Terbaik
1	LQ45	AR(1)MA(3)	14	UNVR	AR(1)MA(3)
2	AALI	AR(1)MA(1)	15	BSDE	MA(3)
3	LSIP	-	16	LPKR	AR(1)
4	ADRO	AR(2)	17	JSMR	AR(2)MA(3)
5	INCO	MA(1)MA(4)	18	PGAS	-
6	PTBA	MA(7)	19	TLKM	AR(3)AR(4)MA(2)
7	INTP	AR(4)MA(2)	20	BBCA	AR(4)MA(3)
8	SMGR	AR(3)MA(3)	21	BBNI	MA(1)
9	ASII	AR(2)MA(3)	22	BBRI	AR(1)AR(4)MA(2)
10	GGRM	AR(5)MA(3)	23	BMRI	AR(1)MA(2)MA(4)
11	ICBP	AR(3)MA(2)MA(13)	24	AKRA	AR(2)AR(4)MA(3)MA(5)
12	INDF	AR(3)	25	MNCN	AR(3)MA(3)
13	KLBF	AR(3)MA(2)MA(7)	26	UNTR	MA(2)

Note: LSIP and PGAS stocks return there is no residual autocorrelation problem

The best Box-Jenkin model is chosen from the repeated estimate from several alternative models and is selected based on the largest adjusted R^2, and the smallest Akaike Information Criterion (AIC) or Schwartz Criterion (SC) and the current model is clean of autocorrelation problem. The GARCH (1,1) model is used to capture volatility information caused by the positive and negative surprise from the announcement of US and domestic macroeconomic news released. Table 5 presents the macroeconomic surprise effect on LQ45 stock return volatility.

Table 5 summary of GARCH (1,1) estimation results, macroeconomic surprise relationship with the LQ45 stock return volatility

No	Stocks	C	ARCH	GARCH	Surprise Indonesia benchmark rate		Indonesia's CPI Surprise		Surprise Indonesia trade balance	
					(+)	(-)	(+)	(-)	(+)	(-)
1	LQ45	0.041*	0.150*	0.791*	0.001	(0.050)*	0.037	0.006	(0.056)*	(0.004)
2	AALI	0.009	0.039*	0.953*	(0.093)*	(0.057)*	(0.122)*	(0.125)*	(0.018)	(0.033)
3	LSIP	0.177*	0.114*	0.830*	0.243	(0.315)*	0.045	0.046	(0.119)	(0.273)*
4	ADRO	0.066*	0.076*	0.879*	(0.281)*	0.151	0.262*	(0.031)	(0.276)*	0.025
5	INCO	(0.009)	0.053*	0.907*	0.312*	(0.041)	0.149	0.006	0.236*	0.112
6	PTBA	0.322*	0.138*	0.726*	(0.293)	(0.373)	(0.097)	(0.377)*	(0.281)*	(0.144)
7	INTP	0.091*	0.056*	0.871*	0.056	(0.110)*	(0.001)	0.012	(0.139)*	(0.001)
8	SMGR	0.037*	0.063*	0.893*	0.064	(0.085)*	0.074	0.093	(0.066)*	0.095
9	ASII	0.121*	0.095*	0.827*	0.173	(0.112)	0.037	(0.004)	(0.172)*	0.074
10	GGRM	0.093*	0.087*	0.795*	(0.036)	(0.191)*	0.032	0.031	(0.083)*	0.007
11	ICBP	0.106*	0.159*	0.712*	0.250	(0.131)*	0.044	(0.035)	(0.051)*	0.104*
12	INDF	0.117*	0.121*	0.826*	0.021	(0.124)	0.262*	0.020	(0.072)	0.102
13	KLBF	0.155*	0.107*	0.838*	0.101	(0.134)*	0.199*	0.069	(0.023)	(0.125)*
14	UNVR	0.103*	0.208*	0.613*	0.522*	(0.011)	0.073*	(0.039)	0.000	0.055
15	BSDE	0.255*	0.150*	0.651*	0.294	(0.142)	(0.047)	0.286*	(0.023)	(0.025)
16	LPKR	0.260*	0.078*	0.806*	0.266	(0.116)	(0.114)	0.243	(0.080)	(0.088)
17	JSMR	0.351*	0.231*	0.387*	0.054	(0.379)*	0.373*	0.212*	0.111	(0.058)
18	PGAS	0.273*	0.215*	0.740*	(0.159)	(0.298)	0.014	(0.227)	0.023	0.381*
19	TLKM	0.086*	0.136*	0.699*	0.235	(0.096)*	0.054	0.015	(0.109)*	(0.033)
20	BBCA	0.073*	0.110*	0.768*	(0.056)	0.081	0.168*	0.204*	(0.024)	0.037
21	BBRI	0.188*	0.168*	0.668*	(0.017)	0.093	0.050	(0.040)*	(0.167)*	(0.013)
22	BBNI	0.027*	0.093*	0.850*	0.116	(0.058)*	0.187*	0.278*	0.022	0.045
23	BMRI	0.054*	0.106*	0.840*	(0.023)	(0.076)*	0.059	(0.012)	0.000	0.089*
24	MNCN	0.108*	0.079*	0.853*	0.210	(0.387)*	0.432*	0.293*	(0.037)	(0.179)*
25	AKRA	0.024*	(0.016)*	1.003*	(0.013)	0.015	0.017	0.021	(0.042)	(0.051)
26	UNTR	0.004	(0.008)*	1.001*	0.025	0.034	0.083*	0.195*	(0.002)	(0.073)

	Surprise GDP's Indonesia		Surprise CPI US		Surprise PPI US		Surprise ISM Manufacturing US		Surprise unemployment US	
	(+)	(-)	(+)	(-)	(+)	(-)	(+)	(-)	(+)	(-)
1	(0.002)	0.022	(0.036)*	0.001	0.004	0.017	(0.065)*	(0.005)	0.014	(0.004)
2	0.202*	0.023	0.041	0.045*	0.044*	0.045	0.095*	0.148*	(0.068)*	(0.075)*
3	(0.122)	0.050	(0.196)*	(0.224)*	0.058	0.216*	0.075	(0.004)	(0.308)*	(0.211)*
4	(0.134)	0.100	(0.069)	0.160*	(0.072)	(0.074)	0.225*	0.108	0.092	(0.058)
5	(0.138)	0.096	0.148*	0.097	0.181*	(0.143)*	0.356*	0.204*	(0.002)	(0.235)*
6	(0.074)	(0.037)	0.224	(0.195)*	0.277	1.080*	0.535*	0.100	0.097	0.058
7	(0.109)	0.059	(0.102)*	(0.011)	(0.013)	0.033	(0.134)*	0.056	0.026	0.112*
8	(0.137)*	0.020	(0.158)*	(0.081)*	0.025	0.054	(0.052)	(0.008)	0.007	0.033
9	(0.044)	0.054	(0.113)*	0.051	(0.006)	0.049	(0.164)*	0.049	0.047	0.008
10	(0.082)	0.255*	(0.133)*	0.025	0.194*	0.067	(0.054)	(0.078)	0.008	(0.075)*
11	(0.110)*	(0.067)	(0.169)*	(0.159)*	0.053*	0.074*	(0.047)	0.100*	(0.048)	0.018
12	(0.011)	0.026	(0.090)	(0.018)	(0.088)	(0.075)	(0.224)*	(0.134)	(0.000)	(0.032)
13	(0.090)*	0.085	(0.182)*	(0.072)	(0.111)*	(0.133)*	(0.334)*	(0.165)*	(0.044)	(0.105)*
14	0.098	(0.036)	(0.119)*	0.010	(0.009)	(0.042)	(0.113)*	(0.035)	(0.010)	0.124*
15	(0.025)	(0.059)	(0.143)*	0.485*	(0.028)	(0.049)	(0.305)*	(0.262)*	0.484*	0.299*
16	(0.395)*	(0.028)	(0.186)	0.193	(0.206)	0.073	(0.055)	(0.145)*	0.067	0.019
17	(0.264)*	(0.097)	(0.093)	(0.135)*	(0.214)*	(0.057)	(0.216)*	(0.274)*	0.061	(0.063)
18	(0.154)	(0.294)*	(0.476)*	(0.116)	0.141	0.242	(0.214)	(0.174)	0.361*	0.078
19	0.029	(0.011)	(0.088)*	0.104*	0.036	0.095*	(0.087)*	(0.022)	0.061*	0.057
20	0.022	(0.011)	(0.079)*	0.079*	(0.014)	0.011	(0.244)*	(0.201)*	0.013	0.034
21	0.041	(0.043)	(0.193)*	(0.092)	0.157*	0.186*	(0.169)*	(0.062)	0.183*	0.171*
22	0.210*	0.062*	(0.055)	(0.002)	0.067	(0.013)	(0.193)*	(0.265)*	0.024	0.010
23	0.306*	(0.037)	(0.109)*	(0.019)	(0.048)	(0.041)	(0.144)*	(0.126)*	0.175*	0.064
24	0.327*	0.226*	(0.125)*	(0.173)*	(0.027)	0.112*	(0.519)*	(0.341)*	0.193*	0.152*
25	(0.088)	0.003	(0.062)*	(0.023)	0.041	0.023	(0.068)	(0.001)	0.007	(0.077)*
26	(0.086)	0.044	0.025	0.051*	0.014	0.001	(0.161)*	(0.070)	0.031	(0.071)*

Sources : Authors' estimates

Note : * indicates significance on 10% level. ( ) indicates a decrease in volatility.

The table reports coefficients for panel GARCH (1,1) models of the daily percentage change in LQ45 stocks return. For all indicators, independent variables are 0/1 dummies for announcement days. To capture the shock effect used a three-day- event window, which defines an announcement event from the day preceding to the day following the announcement.

The macroeconomic surprise that made economic growth improved was good news for the stock market, whereas macroeconomic surprises that weakened the economy was bad news for the stock market. So it can be stated that the domestic macroeconomic surprise like the negative surprise of the Indonesian bank's benchmark interest rate, the negative surprise of Indonesia's CPI, the positive surprise of Indonesia's trade balance, and the positive surprise of Indonesia's GDP is a good news, and otherwise is bad news for stock market. On the other hand, the US macroeconomic surprise like the negative surprise of CPI, the negative surprise of PPI, the positive surprise of ISM manufacturing and the negative surprise of US unemployment is good news, and otherwise is bad news or the stock market.

Based on the estimation of the GARCH (1,1) model that has been done, first, it will be seen how the influence of macroeconomic shock on the LQ45 stock index. On index performance, a negative surprise from the Bank Indonesia benchmark interest rate, positive surprise from Indonesia's trade balance, positive surprise from Consumer Price Index US, and positive surprise from ISM Manufacturing US have a significant effect in reducing volatility return and making index return more stable and less risky. While other macroeconomic news surprises were not statistically significant. Second, from the estimation results it was found that the surprise effect of macroeconomic news announcements on the LQ45 stocks return volatility had a different direction of influence, but in general, significant macroeconomic surprises in LQ45 stocks return volatility also have the same direction and significance level as the index movement, which tends to be stable and not risky. While the surprise of CPI Indonesia tends to make, stock movements have high volatility and are riskier. High volatility can be used for investors who have active trading strategies by utilizing the existing price movement momentum to get profit opportunities at the right time.

DISCUSSION

Based on the results studied, it can be concluded that the macroeconomic news that supports economic growth tends to make stock movements more stable and less risky, while the surprise which is considered to weaken economic growth makes the movement of stock riskier. Economic improvement in developed countries is proven to support the investment climate in developing countries, including Indonesia.

Studying surprise announcement of macroeconomic news from U.S. and domestic can help investors in choosing less risky stocks by looking at the number of responses to surprise events that can increase volatility. High volatility represents a high risk, whereas low volatility represents a low risk'. Thus, the managerial implications that can be applied after studying this research are a recommendation for an investor to decide on investing according to their respective risk profiles. Investors risk profiles are generally divided into three types, there are risk averse, risk neutral, and risk taker. Table 6 shows the number of macroeconomic surprise from the US and domestic, which make the movement of LQ45 stocks have higher volatility and make stocks riskier.

Table 6 summary of the surprising number that increases the return volatility

No	Stocks	Number of events	No	Stocks	Number of events
1	AALI	5	14	BSDE	4
2	LSIP	1	15	LPKR	-
3	ADRO	3	16	JSMR	2
4	INCO	6	17	PGAS	2
5	PTBA	2	18	TLKM	3
6	INTP	1	19	BBCA	3
7	SMGR	1	20	BBRI	4
8	ASII	-	21	BBNI	4
9	GGRM	2		22	BMRI 3
10	ICBP	4	23	AKRA	-
11	INDF	1	24	MNCN	7
12	KLBF	1	25	UNTR	3
13	UNVR	3			

Note: This table shows the number of macroeconomic surprises that were responded to increasing the volatility of stock return.

For risk averse investors, that avoid risks in their investment activities to get a certain return, should make purchases on stocks that do not have high volatility or more stable when the surprise happens from the U.S. and domestic macroeconomic news. Investment should be on stocks that are not risky and apply passive and long-term trading strategies. Based on the result of the analysis, the matching stocks for these conditions are PT Astra International Tbk (ASII), PT Lippo Karawaci Tbk (LPKR) and PT AKR Corporindo Tbk (AKRA). For risk taker investors, investment activities tend to the stocks that have a high risk or have high volatility. This type of investor understands that high return will be followed by a high level of risk. The investment strategy that can be applied is to get more profit opportunities by investing in stocks that respond a lot to macroeconomic surprises such as PT Astra Agro Lestari Tbk (AALI), PT Vale Indonesia Tbk (INCO), and PT. Media Nusantara Citra Tbk (MNCN) or can also implement an active trading strategy that utilizes volatility momentum to make a profit at the right time. But this strategy is more appropriate for an investor who already has a deep understanding of the stock market trading. Finally, for risk neutral investors, they can choose stocks that do not respond much to the macroeconomic news surprise.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

First, the announcement of surprise macroeconomic news from the US and domestic has been proven to influence the volatility of LQ45 stocks to return with different direction of influence. Negative surprise from the Bank Indonesia benchmark interest rate, positive surprise from Indonesia's trade balance, positive surprise from Consumer Price Index US, and positive surprise from ISM Manufacturing US have a significant effect in reducing volatility return and making most LQ45 Stocks return more stable and less risky. While the positive surprises of the Indonesian CPI make the movement of LQ45 stocks return have high volatility and more risky.

Second, based on the number of macroeconomic news surprises that make stock movements have high volatility, investors can choose the stocks according to their respective risk profiles. The risk averse investor can invest in PT Astra International Tbk (ASII), PT Lippo Karawaci Tbk (LPKR) and

PT AKR Corporindo Tbk (AKRA) which have low volatility during the release of surprise macroeconomic, while the risk taker investor can get more profit opportunities by investing to PT Astra Agro Lestari Tbk (AALI), PT Vale Indonesia Tbk (INCO), and PT. Media Nusantara Citra Tbk (MNCN) which respond to many surprises of macroeconomic news.

Recommendations

For further researchers, this research can be developed by looking for abnormal returns from the high volatility in LQ45 stocks after the release of macroeconomic news that is beyond market expectations. In addition, research can also be developed by examining other macroeconomic news from U.S. or other developed countries, which also have an impact on the volatility of LQ45 stock returns.

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