

# INTRA-INDUSTRY EFFECTS OF ACQUISITION ANNOUNCEMENTS: EVIDENCE FROM VERTICAL ACQUISITIONS

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## *Abstract*

The purpose of this study is to investigate intra industry effect of acquisition announcement focusing on vertical acquisition announcement in Industrial Sector in Indonesia. The analysis uses the event study technique of 4 M&A announcements and 34 rival firms listed in the Industrial Sector, period of study is 2007-2008, the result shows that there is no significant market reaction of the rival firms at the day +1 of the announcement. However, by classifying the rival firms based on the cumulative abnormal return at event day and one day after the event day it is found that the vertical acquisition announcement affect the rival firms positively and negatively. by classifying the rival firms based on the cumulative abnormal return at event day and one day after the event day it is found that the vertical acquisition announcement affect the rival firms positively and negatively. The cross section model shows that the market shares of rival firms and the position of rival in the industry do not drive the valuation effects significantly. This might be due to the vertical acquisition nature that does not create the strong competitor in the industry. Rather, the announcing firm of vertical acquisition only benefits from competitive advantage in term of economic scale and efficiency.

**Keywords:** *Vertical Acquisition Announcement, Intra Industry Effect, Industrial Industry.*

## **Introduction**

A common explanation of Merger and Acquisition (M&A) still be a popular strategy is that generally merger may improve the performance of acquiring firm. When a company buys another company, it is trying to create shareholder value over the sum of the two companies. It believes that two or more companies are more valuable than two or more separate companies. Acquisition announcements can cause analysts and investors to reassess the competitive position (Akhigbe and Martin, 2002).

In the efficient markets, firm's stock prices will react to the M&A announcements signal the information of the present value of cash flow. Many literature suggest that acquirer or target firms experience significant positive average abnormal return of the M&A announcement (e.g King et al 2002, Jensen and Ruback 1983). However, financial literature also suggest that the M&A announcement do not always benefit the merging firms, but also rival firms in the industry (e.g Eckbo 1983, Stillman 1983).

This paper hypothesises that If the market expects that the acquisition yields a stronger competitor in the industry, then the rivals will lose and experience negative earning. On the other hand, if the market uses the acquisition announcement as signal to value the rival firms in the industry, then the rivals will benefit and experience positive earning. This occurs because market expects that the some potential rivals will be the next acquirer, imitate the previous acquisition's action. Thus the acquisition announcement may affect the rival in two directions, either it is positive or negative effect and it depends on market expectation. Thus, this paper attempts to investigate intra-industry effect of rival firms in response to the acquisition announcement in Industrial industry in Indonesia. Regardless the outcome of the acquisition, this paper is trying to analyze the vertical form of acquisition, and whether the market shares and the position of rival in the industry influence the various CAR of rival firms.

Furthermore, this paper focuses on the vertical acquisition announcements. When a firm acquires another firm, it will create the synergy and market power for the firm. The synergy may come from cost efficiency and competitive advantage for the acquirer. Vertical acquisition is defined as a firm taking over the smaller firm at different stage of business but both acquirer and target are still in the same industry. This action may be motivated by the desire to spread the business segment and reach new market. For example, United Tractor Indonesia which operates in distributing the construction machinery acquires Tuah Turangga Agung which operates in the coal mining. This acquisition will spread the announcing firm's business into the mining business since the target firm is now a subsidiary of the former and it benefits the announcing firm. However, there is evidence that acquisition does not only benefit the bidder and target firm, but also the rival of the company (see Eckbo 1983).

This paper finds that on the aggregate there is no significant valuation effect of rival firms as a respond of vertical acquisition announcements. Furthermore, by classifying the rival firms based on the cumulative abnormal return at event day and one day after the event day it is found that the vertical acquisition announcement affect the rival firms positively and negatively. This is probably because of market expectation that some rival firms that under contagion effect tend to be the next acquirer imitate the similar acquisition action. Conversely, rival firms under competitive effect experience losses because it becomes less competitive than the announcing firm.

by classifying the rival firms based on the cumulative abnormal return at event day and one day after the event day it is found that the vertical acquisition announcement affect the rival firms positively and negatively First factor is market share of rival firms. This is because generally the rival firms that have close market share with the announcing firm prompted to imitate the similar action of acquisition. Under contagion effect hypothesis it the announcement of acquisition will be a signal to the market about next acquisition of the rivals. If this is happened it will benefit for the rival firms and its price will react positively to the acquisition announcement. The competitive effect hypothesis states that the market price of rival firms will react negatively to the acquisition announcement, this is because the market perceives that the rivals with smaller market share are not as benefit as acquiring firms. The cross section model shows that the market shares of rival firms and the position of rival in the industry do not drive the valuation effects significantly. This might be due to the vertical acquisition nature that does not create the strong competitor in the industry. Rather, the announcing firm of vertical acquisition only benefits from competitive advantage in term of economic scale and efficiency.

## **Literature Review**

This observation is started from the findings of Eckbo 1983. He suggests M&A activities within an industry do not always benefit the involved firms, furthermore it can benefit the rivals of involved firms. Eckbo (1983) find that shareholders of rival of horizontal merging firms earn significant positive abnormal return 0.76% over seven days period surrounding the announcement date. He reason that the announcement provide new information that firms within an industry can become more efficient through consolidation. Akhigbe and Madura (1999) also find that the mean 12-day CAR of rival firms across all announcements is 1.84%, this result support the hypothesis that acquisition announcements do not only affect the values of the targets, but also affect other rival firms.

Other studies about intra industry effect of acquisition are Akhigbe and Martin (2002) examine the effect of acquisitions by Microsoft corporation to the computer industry, they find that the mean CAR of corresponding rival portfolios is negative and not statistically significant, however, examining the rivals based on the segment, they find that rival portfolio in the internet online service segment responds strongly negative (-2.96%) and significant. They reason that the financial market expects Microsoft to exploit its competitive advantages in the Internet online services industry segment. Bendeck & Waller (2007) investigate the intra industry effect in bank acquisition announcements. They study 148 bank acquisition announcements and find that the two-day average excess return portfolio of rival banks is 1.06% with a t-statistic of 8.42. Their results indicate that merger announcements generate significantly positive effect on the share prices of rival banks. They find that the rivals of target banks that is in distress are more positive than target banks that is not in distress, and interpret that they result as geographically specific industry information rather than expectations of increased efficiencies. Similar study also conducted by Miyazaki and Aman

(2007) of acquisition activities in pharmaceutical industry. They find that the entire sample of rival firms experience negative and not statistically significant average CAR, they divide the rival firms based on the value of  $CAR_i$  (0,1), and find that rival firms under the contagion effect hypothesis experience significant positive CAR for day +1 (3.28%), on the other hand, rival firms under the competitive effect hypothesis experience significant negative CAR for day +1 (-3.49%).

Most of previous studies investigate the horizontal of Merger and Acquisition announcements (e.g Gong and Firth, 2006. Akhigbe and Madura, 2001). Gong and Firth (2006) documented the negative effect for rival firms' respond on the Airline merger announcements. They explain that if an airline company merger with another airline company, the effect for the rivals depends on the merger results. If the merger results a stronger competitor and it accompanies with the larger market share conquered by the new combining firm, then the rival will lose and experience negative effect. Conversely if combining firm exploits its market power by increasing the output price, then the rivals will benefit and experience positive effect of the merger announcement. Furthermore Gong and Firth suggest that market share is the one key determining the merger effect on rival firms. They find that the reactions of bidders and rivals are opposite in sign, which means if the bidder's stock price reacts positively after merger announcement, then the rival will react negatively.

The contradictory result comes from Akhigbe and Madura (2001) who examine the valuation of the acquirer, target and rival insurance companies in response to merger announcement. They find the positive and significant intra-industry effects which support the signaling hypothesis. Moreover, they suggest that the rival insurers with large proportion of market share relative to the industry experience no significant benefit than rival insurers with small proportion of market share in response the merger announcement.

Song and Walkling (1999) study the acquisition probability hypothesis and test a sample of 141 unexpected acquisitions and 2459 rival firms over the 1982-199. They explain that changes in acquisition probability will result changes in a rival's stock price and these changes vary systematically with individual firm characteristics. They also document that: (1) rival firms earn positive abnormal returns regardless of the form (horizontal and non-horizontal) and outcome (successful or unsuccessful) of the initial industry acquisition. Abnormal returns to rival firms are significantly positive in all categories except horizontal acquisitions. (2) the abnormal return to rival firms tends to increase with the magnitude of surprise about an acquisition. (3) the characteristics of target firms are similar to those of rivals that subsequently become targets. (4) the cross-sectional variation in the abnormal returns to rival firms is systematically related to variables associated with the probability of acquisition. (5) the magnitude of rival returns is significantly, positively related to the probability of being a target.

The intra industry effects of M&A announcement

1. The contagion effect

The contagion effects theory suggests that acquisitions signal benefit the all industry members, so the stock prices of rivals rise when acquisitions are announced (e.g Akhigbe and Madura, 1999). Contagion effect defines the rival firms' stock price reaction on average tend to be in the same direction as the announcing firm's price reaction (Chen, Ho and Shih, 2007).

2. The competitive effect

On the other hand, competitive effects theory suggests that industry rivals are negatively affected by acquisition announcements. King, Wilson and Naseem (2002) explain firms that combine to realize competitive advantages (economies of scale and scope, internalization of transaction costs) do so in order to lower their costs or generate other efficiencies. These should create a positive effect on the aggregate profitability of the firms involved in the combination, but lower profits for rivals.

## DATA AND METHODOLOGY

### Data

The data for this study is obtained from *Bloomberg*, Period of the study is from 2007 to 2008. Acquisitions are defined as firm purchases or take over another firm, generally smaller than the acquirer firm. This paper focuses on acquisition announcements on the industrial industry. The selection criteria is as follow

1. The firms have to be operated in Indonesia.
2. The firms have to be publicly listed and daily close price must be available in Bloomberg during the period of study.

In selecting the rival firms of acquirer firm, this paper follows the Miyazaki and Aman (2007). They define the rival firms as the firms that operate in same Industry and have the close ranking in term of sales growth as the announcing firms. Based on the industry ranking criteria, ten firms above and below the announcing firms are considered. If only one firm is above or below the announcing firm, this firm is selected. This paper uses the Bloomberg industry classification to define the firms which are in industrial industry. The final sample consists of four acquisition announcement and 34 rival firms. They are listed in Table 1. Moreover, Bloomberg also partition the industrial industry into 14 subsectors.

**Table 1. M&A announcement events, Announcing firms, target and rivals 2007-2008**

Event	Announcement date	Announcing firms	Target	Rivals
1	19 April 2007	Truba Alam Manunggal (contractor firm)	Menamas Mitra Energy (operator of a gas fired power plant)	Kabelindo Murni, Nipress, Rukun Raharja, Sumi Indo Kabel, Siwani Makmur, Samudra Indonesia, Aneka Kemasindo, Citra Marga Nusaphala, Citatah, Tirta Mahakam Resources
2	9 January 2008	United Tractor (distributor of construction machinery company)	Tuah Turangga Agung (coal mining company)	Hexindo Adiperkasa, Pelangi Indah Canindo, Nusantara Infrastruktur, Wijaya Karya, Mitra Rajasa, Voksel Electric, Akr Corporindo, Truba Alam Engineering.
3	5 Mei 2008	Semen Cibinong (cement manufacturer company)	Bintang Polindo Perkasa (mineral and metal assembly)	Arpeni Pratama, Berlina, Asahimas Flat, Pelayaran Tempur, Surya Semesta Internusa, Sat Nusapersada, Mulia Industrindo, Jasa Marga, Adhi Karya, Indo Cement Tunggal Prakarsa
4	23 June 2008	Barito Pacific (construction company)	Try Polyta Indonesia (polypropylene manufacturer)	Holcim Indonesia, United Traktor, Intraco Penta, Total Bangun Persada, Agis, Berlian Laju Tanker

### Methodology

This study uses daily closing stock prices of 34 rival firms in Industry and daily closing price index of Jakarta Composite Index (JCI). JCI is used to proxy the market return ( $R_M$ ). Data of daily closing price is collected from *Bloomberg*. The methodology used is event study, selecting five events in period of study 2007-2008. A two-day event window is chosen include the announcement date and the subsequent day.

Daily returns for 250 days are used to estimate market model parameter for each rival firms and portfolio, the M&A announcement date is represented by day  $t$ . The average abnormal return on day  $t$  is computed as the average deviation between actual returns and expected returns for the rival firms analyzed. CAR value indicates the stock price impact over the two day period (0,1) surrounding the announcement of M&A.

The market model for each announcement is :

$$R_{it} = \alpha + \beta R_{mt} + \varepsilon_{it} \quad (1)$$

$R_{it}$  is daily expected return on the stock of firm  $i$ , at time  $t$ , the  $R_{mt}$  is the daily market return on JCI index at time  $t$ . using the estimated parameters  $\alpha$  and  $\beta$ , the abnormal return (AR) for the stock of firm  $i$  in period  $t$  is obtained by:

$$AR_{it} = R_{it} - \alpha - \beta R_{mt} \quad (2)$$

The Cumulative Abnormal Return (CAR) is calculated by summing abnormal return over the event window:

$$CAR_i(t_0, t_1) = \sum_{t_0}^{t_1} AR_{it} \quad (3)$$

Where  $t_0 = 0$  is the initial date of event window and  $t_1 = +1$  is the final date of event window. If  $CAR_i(0,1) > 0$ , the contagion effect hypothesis is supported, if  $CAR_i(0,1) < 0$ , the competitive effect hypothesis is supported.

## EMPIRICAL RESULTS AND DISCUSSIONS

### Intra-Industry effect for the rival firms

We distinguish the rival firms based on its  $CAR_{(0,+1)}$ . If the  $CAR_{(0,+1)}$  value of a rival firm is positive then it is classified as firm that is under contagion effect hypothesis, however if it is negative then it is under competitive effect hypothesis. Out of 34 sample, there are 21 rival firms which support the contagion effect, and 13 rivals firms support the competitive effect.

Table 2. Presents the CAR of all rival firms, rival firms under contagion effect and rival firms under competitive effect and depicted in Figure 1 and Figure 2. For all rival firms CAR value for event day 0 is negative and statistically is not significant as well as at day 1. It reflects that there is no market reaction for rival firms at the post acquisition announcement. However, if rival firms are classified based on two-day CAR of day 0 and day 1, then rival firms under the contagion effect hypothesis do not experience any significant reaction on the event day 0, but at day 1 the reaction is positive 2.5% and statistically significant at 5%. This may result of the efficiency motives. For some rival firms, there is a possibility to acquire another firms, imitate the similar action of the announcing firms. Market expects this possibility will increase their value and transfer of information affects the share price of rival firms in the industry. Although M&A announcements are firm specific, they may contain value relevant information about rival firms, causing the stock prices of those firms to react to the news. This is the intra-industry transfer of information (Miyazaki and Aman, 2007).

On the other hand, for some rival firms experience negative reaction of -5.6% and statistically is not significant at event day 0 but it is negative -7.3% and statistically significant at day 1. This may attribute to market expectation of the competitive advantages and efficiencies of the announcing firms will make the rival become less competitive and affects to lower profit. It will decrease the share price of some rivals under competitive effect.

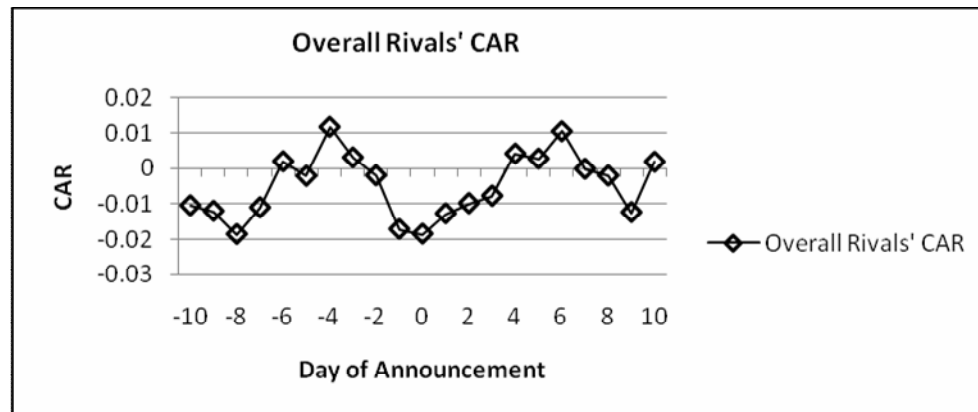
Table 2. the CAR with the M&A announcements

Days relative to M&A announcem ent	ALL RIVAL FIRMS		RIVAL FIRMS UNDER CONTAGION EFFECT		RIVAL FIRMS UNDER COMPETITIVE EFFECT		
	CAR	t-value	CAR	t-value	CAR	t-value	
-10	-0.0105	-1.4593	-0.0078	-0.7653	-0.0149	-1.5637	
-9	-0.0120	-0.2560	-0.0046	0.4145	-0.0241	-0.9555	
-8	-0.0186	-1.1007	-0.0152	-1.3432	-0.0242	-0.0076	
-7	-0.0110	0.6055	0.0027	0.9235	-0.0333	-1.0479	
-6	0.0019	1.9204	0.0220	1.8651	* -0.0306	0.5421	
-5	-0.0022	-0.4763	0.0190	-0.2335	-0.0363	-0.6686	
-4	0.0117	1.8799	* 0.0396	2.0478	* -0.0333	0.2945	
-3	0.0030	-1.4366	0.0305	-0.9973	-0.0413	-1.3008	
-2	-0.0020	-1.0693	0.0211	-1.7284	* -0.0394	0.2203	
-1	-0.0171	-2.3342	** 0.0001	-2.3467	** -0.0451	-0.6555	
0	-0.0185	-0.2775	0.0052	0.8244	-0.0568	-1.6322	
<b>1</b>	<b>-0.0127</b>	<b>0.8478</b>	<b>0.0249</b>	<b>2.1078</b>	** -0.0735	<b>-2.9651</b>	**
2	-0.0098	0.6540	0.0279	0.5010	-0.0709	0.4127	
3	-0.0077	0.3051	0.0296	0.1761	-0.0682	0.2914	
4	0.0041	1.4537	0.0409	0.9063	-0.0553	1.6069	
5	0.0027	-0.1954	0.0474	0.6126	-0.0697	-2.1906	
6	0.0104	0.68526	0.0523	0.2798	-0.0571	1.1537	
7	-0.0002	-1.6135	0.0408	-1.4319	-0.0664	-0.7852	
8	-0.0021	-0.2373	0.0446	0.3176	-0.0776	-1.4352	
9	-0.0124	-1.7706	0.0368	-1.0008	-0.0918	-1.6411	
10	0.0018	1.1869	0.0633	1.4298	-0.0975	-0.8053	

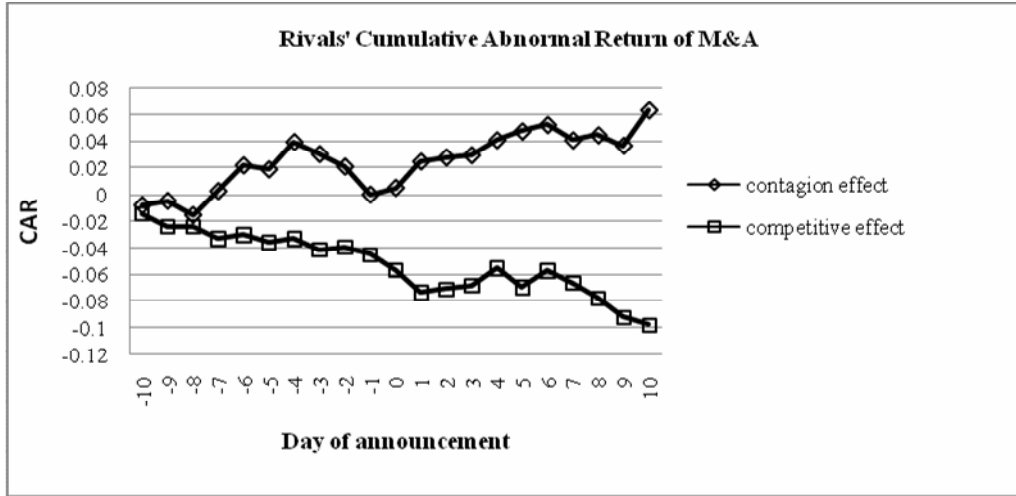
\*\* significant at 5%

\*significant at 10%

Figure 1. Cumulative Abnormal Return for all rival firms



**Figure 2. Cumulative Abnormal Return for Rivals Under Contagion Effect And Those Under Competitive Effect**



### Cross Sectional Analysis of Rival Firms

To explain the variation abnormal return among rival firms in industrial industry, a cross sectional analysis is conducted. The previous research (Gong and Firth, 2006) have suggested that the determinant of effect of the mergers on rival firms is the market share of the newly created competitor relative to that of the existing rivals. This paper follows Halpern (1983) to measure the market share of rivals as the proportion of market capitalization of rivals relative to the industry median market capitalization.

This paper includes a dummy variable to distinguish between rival firms that are in the similar subsector with the announcing firm and those which are not. If a rival firm is in the similar subsector with the announcing firm, this paper expects that the rival will experience negative abnormal return, because the announcing firm has benefited from getting new competitive advantage and market will expect that the announcing firm is more valuable and become strong competitor than its rivals in the same subsector.

The variables tested with the cross sectional model:

$$CAR_i = \alpha_0 + \alpha_1 Market\ cap_i + \alpha_2 Subsector_i + \varepsilon$$

Where:

$CAR_i$  = two days CAR (0,+1) of the rival  $i$  in response to the acquisition announcement

$Market\ cap_i$  = market capitalization of rival  $i$ , divided by the industry median market capitalization.

$Subsector_i$  = 1 if the rival  $i$  is in the same subsector with the announcing firm and 0 otherwise.

Results of the cross sectional of valuation effects of rival firms to the acquisition announcement are shown in table 3. Neither Market capitalization variable nor subsector variable is statistically significant, implying that valuation effects among rival firms as a respond to the vertical acquisition announcement are not driven by market capital of rival and whether the rival is in same subsector with the announcing firm. This makes sense. When a firm acquires a target that focusing in different production process, this will affect the value rival firms either positively or negatively. However, these effects are not attributable by the market capital of rivals and the position of rival firm in the industry (if rival is in the same subsector with the announcing firm). This is because the vertical acquisition does not create strong

competitor relative to the existing rivals in the industry, rather acquirer benefits from the competitive advantage in term of economic scale as well as efficiency and does not threat the existent of rivals.

**Table 3. Regression results of the valuation effects of rival firms**

$$CAR_i = \alpha_0 + \alpha_1 Market\ cap_i + \alpha_2 Subsector_i + \varepsilon$$

Variables	Coefficient	t-statistic
Intercept	0.003	0.37
Market cap	0.000	0.29
Subsector	0.002	0.15
Sample	34	
F-value	0.052	
R <sup>2</sup>	0.003	
Adj R <sup>2</sup>	-0.06	

Where:

$CAR_i$  = two days CAR (0,+1) of the rival  $i$  in response to the acquisition announcement

Market cap <sub>$i$</sub>  = market capitalization of rival  $i$ , divided by the industry median market capitalization.

Subsector <sub>$i$</sub>  = 1 if the rival  $i$  is in the same subsector with the announcing firm and 0 otherwise.

## Conclusions

The paper objectives are to investigate the intra-industry effect of vertical acquisition announcements and to test whether market capital and position of rival firms in the industry contribute to the valuation effects. The results show that on aggregate market does not react significantly to the acquisition announcements, however the classification of rival firms based on two-day CAR (0, +1) shows that some rival firms experience positive return and some of them experience negative return. This finding implies that market expectation that some rivals tend to be next acquirer imitate the acquisition action, while some of them become less competitive due to the acquisition that will affect to their price in the market.

The result also exhibits that market capital does not influence significantly the valuation of rival firms, this is because of the nature of the vertical acquisition which does not create the strong competitor that leads to the monopolistic structure in industry. Rather this vertical acquisition only benefits the acquirer due to the competitive advantage in term of economic scale and efficiency.

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