

# Financial Performance Assessment of LQ45 Companies using DuPont Analysis during the Period of 2013-2017

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**Abstract:** The financial performance of a listed company will affect the market sentiment on the company. Therefore, financial performance needs to be assessed periodically and in detail. The study aims to assess the financial performance of LQ45 listed companies using DuPont analysis, which provides an in-depth review by decomposing Return of Equity (ROE). 34 companies are selected purposively as samples, and secondary data is sourced from the financial statements for the period of 2013-2017. Results showed the majority of LQ45 companies had relatively poor performance based on ROE, which was attributed to the value of profit margin, total assets turnover, and equity multiplier that fluctuates. It is recommended the company should increase its asset productivity in generating business profit through increased sales. Government interventions to create a conducive business environment are also needed.

**Keywords:** LQ45, DuPont analysis, ROE, NPM, TATO, EM

## 1. Introduction

The financial performance achieved by a company during a certain period, especially those listed in the capital market, is one of the fundamental factors that shape investor or market sentiment towards the company. If the company is able to demonstrate the performance of its financial resource management effectively and efficiently, which results in the achievement of high profits, then encourages the creation of positive market sentiment and higher firm value (Fuad, Nurbaya and Amirullah, 2011; Brigham and Houston, 2013; Liembono, 2016). Information about the company's performance shown in the audited financial statements will also be a reference for investors in the process of making investment decisions rationally, mainly related to the risk probabilities they bear (Agala, Jadhav and Borhade, 2014; Doorasamy, 2016). Therefore, the effort to evaluate the financial performance achieved is an obligation that is carried out by the listed companies.

This study uses a case study on public companies that are members of the LQ45 group, namely a group of 45 issuers that primarily have the largest capitalization and most liquid stocks. IDX authorities routinely monitor the performance of the LQ45 group every three months, because they often become a reference for the overall capital market performance and

can shape market perceptions. Unfortunately, recent phenomena indicate a decrease in performance from LQ45 companies. The investigation results showed a downward trend in the LQ45 index, and along with that there was a decline in the year-to-date IHS Index, during the period February to April 2018 (Fig. 1). Information on the figure stated that during the three months there was a decrease in the LQ45 index of 4.907 points or 0.538 percent; and accompanied by a decline in the IHS index of 20,348 points or 0.348 percent.

The downward trend in the LQ45 index can create negative sentiment on the market toward the growth prospects of exchange market. The decline in the index also shows more LQ45 shares that have prices below the moving average price for the last 200 days (MA200) (Maulana, 2018b, 2018a). Stocks that have prices below the MA200 are considered to be experiencing a downward trend or bearish (Maulana, 2018b). This situation could cause investors to divert funds from the capital market to other financial instruments such as banking or forex markets. Thus, the financial performance of the LQ45 group is important to be analyzed so that weaknesses can be identified and immediately responded through the right strategy to improve its performance.



**Fig. 1.** Trend of LQ45 and IHS Index for the Period of February-April 2018

DuPont analysis, which is often referred to as 'DuPont Identity', is one of the methods used to evaluate the operational performance of corporate financial management. Since the initial development of the model by Donaldson Brown in its internal efficiency report, and subsequently the model was used by DuPont Corporation in the 1920s, DuPont analysis is widely used as a fundamental measurement framework of company financial performance (Lesmana, 2012; Sheela and Karthikeyan, 2012; Phillips, 2015), due to in this analysis includes elements of sales, assets used, and profits generated by the company (Atmaja, 2008; Syamsuddin, 2011; Lianto, 2013). DuPont analysis is a theoretical-based assessment framework, comprehensive analysis techniques, described in simple model, and linking operational aspects of the company (Gitman and Zutter, 1989; Soliman, 2008; Munawir, 2014). Several studies suggest that the superiority of DuPont analysis is combining operational measurement (profitability and efficiency) and financing measurement (leverage) in the model, which facilitating the identification of significant strengths and weaknesses in corporate financial management (Liesz, 1996; Nissim and Penman, 2001; Liesz and Maranville, 2008; Soliman, 2008). In the implementation of evaluating earning power of the firm, DuPont analysis can be done through a technique comparing the ratio value between one period to another period for a company, or by comparing the ratio value achieved by one company to that achieved by another company in the same or different industry sector

(Lesmana, 2012; Sheela and Karthikeyan, 2012; Chang, Chichernea and HassabElnaby, 2014; Lubis, Zulkifi and Saputri, 2015).

The initial model of DuPont analysis uses elements from Return on Assets (ROA), namely net profit margin and total asset turnover. In 1970s, the ratio modified into Return on Equity (ROE) which included a total assets to equity ratio. ROE states that investors' returns can receive from the firm, or is a ratio that shows how much profit the company can make from each nominal of money invested by shareholders (Brigham and Houston, 2013; Doorasamy, 2016; Rahman and Mia, 2018). The higher the value of this ratio indicates the better the financial performance of the company. In the implementation procedure, DuPont model decomposes ROE into three distinct elements, i.e.: (1) Operating efficiency which is measured by net profit margin (NPM); (2) Assets use efficiency which is measured by total asset turnover (TATO); and (3) Financial leverage which is measured by Equity Multiplier (EM) (Phrasasty and Azizah, 2013; Ivan and Noveria, 2014; Mohideen and Parveen, 2014; Doorasamy, 2016). Through this procedure, DuPont analysis is useful to identify how company productively use its assets, and to measure cash flows from the company.

This study aims to measure the financial performance of listed companies that are included in the LQ45 on the Indonesia Stock Exchange (IDX) for the period of 2013-2017. To achieve the objectives, the performance measurement was conducted through DuPont analysis using ROE framework that decomposes into NPM, TATO and EM. Primary analysis is also carried out by comparing the value of the ratio between periods of each company analyzed and comparing the value of the ratio between the companies. Results from the study will provide important and relevant information for investors, financial analysts, and others in their investment decision process in stock exchange. In particular, this study will help policy makers of the selected companies in the identifying of their companies' financial strengths and weaknesses, creating profit from related factors, and taking corrective actions in effort to achieve high performance and maximize their firms' value.

## **2. Methodology**

This descriptive study aims to describe the facts identified related to the financial performance achieved by LQ45 companies in IDX for the period of 2013-2017 (Kuncoro, 2009; Soewadji, 2012). 34 companies was selected as samples using purposive sampling method, which based on criteria that the samples are active companies on IDX, publish audited financial statements regularly, and always included in the LQ45 group during the study period (Sekaran and Bougie, 2013; Sugiyono, 2015). Secondary data in the form of financial statements (that is: balance sheet and income statement) during the study period of each sample, collected using the documentation method through [www.idx.co.id](http://www.idx.co.id)

### ***Data Analysis***

Data analysis method uses DuPont system, where performance appraisal is based on ROE ratio which states the company's ability to generate returns based on management of the investors' equity (Gitman and Zutter, 1989; Syamsuddin, 2011). In the analytical procedure, ROE decomposes into three primary elements. Thus, ROE is calculated by multiplying all three primary elements (Sheela and Karthikeyan, 2012; Phrasasty and Azizah, 2013; Mohideen and Parveen, 2014).

The first element is NPM that measures a company's ability to generate net income based on sales obtained; the higher the value of this ratio means the higher the company's ability to generate profits (Brigham and Houston, 2013; Ivan and Noveria, 2014). NPM is calculated by

dividing net profit after interest and tax on company sales (Sheela and Karthikeyan, 2012; Phrasasty and Azizah, 2013; Munawir, 2014).

TATO is the second element of analysis that serves to measure how effective the company's actions are in utilizing all its resources; the higher the value of ratio means the higher the company's ability to generate sales efficiently through the management of its assets (Atmaja, 2008; Lubis, Zulkifi and Saputri, 2015; Rahman and Mia, 2018). The TATO formula is the number of net sales divided by the total assets of the company (Lianto, 2013; Tarmizi and Marlim, 2016).

The third element is EM which states the proportion of debt and equity use in financing company activities; the higher the value of this ratio indicates the company has been using more debt than equities in its total assets (Gitman and Zutter, 1989; Lesmana, 2012; Brigham and Houston, 2013). The ratio is calculated by dividing company's total assets by total equity (Sheela and Karthikeyan, 2012; Phrasasty and Azizah, 2013; Doorasamy, 2016; Rahman and Mia, 2018).

The conclusions of the analysis were achieved by comparing the change of each ratio value between the initial period to the end of period of a company, and by comparing the ratio value achieved by one company to that achieved by another company in the sample group of this study (Sheela and Karthikeyan, 2012; Ivan and Noveria, 2014; Lubis, Zulkifi and Saputri, 2015; Doorasamy, 2016).

### 3. Results And Discussion

In this section, the results of DuPont systems are first described in relation to trend analysis of elements of NPM, TATO, EM, and ROE. Furthermore, the results are then discussed together with the theoretical foundation and findings of previous studies to obtain conclusions that meet the objectives of this study.

#### 3.1. Results

The calculation results for each ratio of NPM, TATO, EM and ROE, are summarized in Tables 1-4. The description of each of these ratios as follows.

**Table 1.** Trend of NPM Ratios of LQ45 Companies in IDX during the Period of 2013-2017 (in percentage)

No	Symb	2013	2014	2015	2016	2017	Change (2013- 2017)
1	ADHI	4.18	3.77	9.36	3.66	3.46	(0.72)
2	ADR O	6.86	4.53	6.57	15.1	15.9	9.04
3	AKR A	4.39	3.29	5.49	5.92	7.33	2.94
4	ASII	12.2	10.9	8.93	10.9	10.9	(1.24)
5	BBCA	38.5	41.2	36.9	50.9	42.2	3.69
6	BBNI	23.6	35.7	56.5	28.1	32.4	8.81

No	Symb	2013	2014	2015	2016	2017	Change (2013- 2017)
	ol	1	1	5	8	2	
7	BBRI	33.5 0	32.9 6	29.1 1	43.6 6	30.0 1	(3.49)
8	BJBR	16.9 2	12.7 4	13.5 8	25.6 7	11.2 7	(5.65)
9	BMRI	35.8 4	34.3 0	28.5 7	52.5 9	29.3 3	(6.51)
10	BRPT	(1.45 )	(0.10 )	0.01	14.0 8	11.4 3	12.88
11	BSDE	50.6 7	71.6 9	37.7 8	30.9 4	49.2 6	(1.42)
12	GGR M		7.91	8.28	9.18	8.63	9.25
13	HMSF	14.4 1	12.4 1	11.6 3	13.1 3	12.6 0	(1.81)
14	ICBP		9.11	8.40	9.53	10.5 5	9.92
15	INDF		8.94	7.57	7.60	7.47	7.18
16	INTP	27.9 2	25.7 7	23.9 3	24.7 4	12.7 3	(15.18)
17	JSMR	12.0 1	13.2 5	13.4 0	10.8 2	5.97	(6.05)
18	KLBF	12.5 2	12.2 6	11.6 5	12.1 5	12.1 0	(0.42)
19	LPKR	25.1 4	25.7 1	6.92	15.5 3	16.8 0	(8.35)
20	LPPF	17.0 3	17.9 1	19.9 7	20.1 7	18.8 2	1.79
21	MNC N	27.4 6	27.7 7	19.5 9	22.9 6	22.3 2	(5.14)
22	MYR X	(70.1 9)	0.39	17.6 9	9.19	(9.59 )	60.60
23	PGAS	29.5 9	21.9 5	13.6 4	10.7 4	4.93	(24.67)
24	PTBA	20.9 8	16.2 4	13.6 6	13.3 4	19.8 2	(1.16)
25	PWO N	37.5 1	67.0 7	30.4 6	36.6 9	35.0 2	(2.49)
26	SCM A	34.8 0	35.7 1	36.3 2	33.1 9	29.3 7	(5.43)
27	SMG R	23.8 8	20.7 0	17.3 0	16.7 1	6.14	(17.75)
28	SRIL					8.66	3.25

No	Symb ol	2013	2014	2015	2016	2017	Change (2013- 2017)
		5.41	7.60	8.76	8.59		
29	SSMS	32.1	33.8	24.0	22.0	23.8	(8.37)
		9	3	8	9	2	
30	TLK M	24.5	23.9	23.3	23.2	23.6	(0.91)
		9	4	7	7	8	
31	UNTR	12.2			11.4	11.3	(0.95)
		6	9.26	6.71	1	1	
32	UNV R	17.4	17.6	16.0	14.8	17.2	(0.15)
		0	0	7	7	5	
33	WIKA						(0.25)
		5.25	6.02	5.21	7.20	5.00	
34	WSK			11.0			5.45
	T	3.78	4.83	7	7.61	9.24	

Based on Table 1, by comparing the achievement of changes in the NPM ratio during the period of 2013-2017, 23 LQ45 companies were identified as having experienced a decrease in NPM; while only 11 companies succeeded in increasing the achievement of NPM scores. The highest positive change (or increase) in NPM was achieved by PT. Hanson International Tbk. (MYRX) of 60.60 percent; while the highest positive change (or decrease) in NPM was experienced by PT. Perusahaan Gas Negara (Persero) Tbk. (PGAS) of minus 24.67 percent. This result indicates that the majority of LQ45 companies during the study period experienced a decrease in the ability to obtain net income through sales generated.

**Table 2.** Trend of TATO Ratios of LQ45 Companies in IDX during the Period of 2013-2017 (in times)

No	Symb ol	2013	2014	2015	2016	2017	Change (2013- 2017)
1	ADHI	1.01	0.83	0.56	0.55	0.53	(0.47)
2	ADR O	0.49	0.52	0.45	0.39	0.48	(0.01)
3	AKR A	1.53	1.52	1.30	0.96	1.09	(0.44)
4	ASII	0.91	0.85	0.75	0.69	0.70	(0.21)
5	BBC A	0.07	0.07	0.08	0.08	0.08	0.01
6	BBNI	0.07	0.08	0.07	0.07	0.07	(0.00)
7	BBRI	0.09	0.09	0.10	0.09	0.09	(0.00)
8	BJBR	0.11	0.12	0.11	0.10	0.10	(0.01)
9	BMRI	0.07	0.07	0.08	0.07	0.07	0.00
10	BRPT	1.09	1.07	0.62	0.76	0.67	(0.41)
11	BSDE	0.25	0.20	0.17	0.17	0.23	(0.03)
12	GGR M	1.09	1.12	1.11	1.21	1.25	0.16

13	HMS P	2.74	2.84	2.34	2.25	2.30	(0.44)
14	ICBP	1.18	1.21	1.20	1.19	1.13	(0.05)
15	INDF	0.74	0.74	0.70	0.81	0.80	0.06
16	INTP	0.70	0.69	0.64	0.51	0.50	(0.20)
17	JSMR	0.36	0.29	0.27	0.31	0.44	0.08
18	KLBF	1.41	1.40	1.31	1.27	1.21	(0.20)
19	LPKR	0.21	0.31	0.22	0.23	0.19	(0.02)
20	LPPF	2.30	2.33	2.32	2.04	1.85	(0.45)
21	MNC N	0.68	0.49	0.45	0.47	0.47	(0.21)
22	MYR X	0.03	0.05	0.01	0.09	0.09	0.06
23	PGAS	0.69	0.55	0.47	0.43	0.47	(0.22)
24	PTBA	0.96	0.88	0.81	0.76	0.89	(0.07)
25	PWO N	0.33	0.23	0.25	0.23	0.24	(0.08)
26	SCM A	0.92	0.86	0.93	0.94	0.83	(0.09)
27	SMG R	0.80	0.79	0.71	0.59	0.57	(0.23)
28	SRIL	1.19	0.84	0.81	0.72	0.64	(0.56)
29	SSMS	0.53	0.54	0.34	0.38	0.34	(0.19)
30	TLK M	0.65	0.64	0.62	0.65	0.65	(0.00)
31	UNT R	0.89	0.88	0.80	0.71	0.78	(0.10)
32	UNV R	2.30	2.42	2.32	2.39	2.18	(0.12)
33	WIK A	0.94	0.78	0.69	0.50	0.57	(0.37)
34	WSK T	1.10	0.82	0.47	0.39	0.46	(0.64)

Based on Table 2, by comparing the achievement of changes in the TATO ratio during the period of 2013-2017, 28 LQ45 companies were identified as having experienced a decline in TATO; while only 6 companies succeeded in increasing the TATO value achieved. The highest positive change (or increase) in TATO was achieved by PT. Gudang Garam Tbk. (GGRM) of 0.16 times; while the highest negative change (or decrease) in TATO was experienced by PT. Waskita Karya (Persero) Tbk. (WSKT) of minus 0.64 times. This result indicates that the majority of LQ45 companies during the study period are not using all the assets or resources they have efficiently in effort to generate sales or return, and this condition can raise problems in their business management.

**Table 3.** Trend of EM Ratios of LQ45 Companies in IDX during the Period of 2013-2017 (in times)

No.	Symb ol	2013	2014	2015	2016	2017	Change (2013- 2017)
1	ADHI	6.28	5.97	3.25	3.69	4.83	(1.45)
2	ADR O	2.11	1.97	1.78	1.72	1.67	(0.44)
3	AKR A	2.73	2.48	2.09	1.96	1.86	(0.87)
4	ASII	2.02	1.96	1.94	1.87	1.89	(0.12)
5	BBC A	7.76	7.09	6.63	6.00	5.71	(2.05)
6	BBNI	8.11	6.83	6.48	6.76	7.03	(1.08)
7	BBRI	7.89	8.21	7.76	6.84	6.73	(1.16)
8	BJBR	10.5 6	10.7 1	11.4 3	10.5 8	11.3 8	0.82
9	BMRI	8.26	8.16	7.62	6.77	6.62	(1.64)
10	BRPT	2.19	2.20	1.88	1.77	1.81	(0.39)
11	BSDE	1.68	1.52	1.63	1.57	1.57	(0.11)
12	GGR M	1.73	1.75	1.67	1.59	1.58	(0.14)
13	HMS P	1.94	2.10	1.19	1.24	1.26	(0.67)
14	ICBP	1.60	1.66	1.62	1.56	1.56	(0.05)
15	INDF	2.04	2.08	2.13	1.87	1.88	(0.15)
16	INTP	1.16	1.17	1.16	1.15	1.18	0.02
17	JSMR	2.61	2.79	2.97	3.27	4.31	1.70
18	KLBF	1.33	1.27	1.25	1.22	1.20	(0.14)
19	LPKR	2.21	2.14	2.18	2.07	1.90	(0.31)
20	LPPF	(3.76 )	19.1 9	3.52	2.62	2.33	6.09
21	MNC N	1.24	1.45	1.51	1.50	1.54	0.29



No.	Symb ol	2013	2014	2015	2016	2017	Change (2013- 2017)
22	MYR X	1.09	1.18	1.31	1.40	1.44	0.34
23	PGAS	1.60	2.10	2.15	2.16	1.97	0.37
24	PTBA	1.55	1.71	1.82	1.76	1.59	0.05
25	PWO N	2.27	2.02	1.99	1.88	1.83	(0.44)
26	SCM A	1.44	1.36	1.34	1.30	1.22	(0.22)
27	SMG R	1.41	1.37	1.39	1.45	1.61	0.20
28	SRIL	2.41	3.00	2.83	2.86	2.70	0.29
29	SSMS	1.60	1.34	2.30	2.07	2.37	0.78
30	TLK M	1.65	1.64	1.78	1.70	1.77	0.12
31	UNT R	1.61	1.56	1.57	1.50	1.73	0.12
32	UNV R	3.14	3.01	3.26	3.56	3.65	0.52
33	WIK A	3.90	3.20	3.60	2.49	3.12	(0.78)
34	WSK T	3.69	4.40	3.12	3.66	4.30	0.61

Based on Table 3, by comparing the achievement of changes in the EM ratio during the period of 2013-2017, 19 LQ45 companies were identified as having experienced a decline in EM; while 15 companies succeeded in increasing the achievement of EM values. The highest positive change (or increase) in EM was achieved by PT. Matahari Department Store Tbk. (LPPF) of 6.09 times; while the highest negative change (or decrease) in EM was experienced by PT. Bank Central Asia Tbk. (BBCA) of minus 2.05 times. This result indicates that the majority of LQ45 companies during the study period begin to increase the use of equity obtained from shareholders and reduce the use of debt to finance their total assets.

**Table 4.** Trend of ROE Ratios of LQ45 Companies in IDX during the Period of 2013-2017 (in times)

No	Symb ol	2013	2014	2015	2016	2017	Change (2013- 2017)
1	ADHI	26.47	18.6	17.0	7.43	8.94	(17.53)
			5	2			

No	Symb	2013	2014	2015	2016	2017	Change (2013- 2017)
2	ADR O	7.06	4.62	5.26	10.08	12.66	5.61
3	AKR A	18.28	12.41	14.89	11.16	14.85	(3.44)
4	ASII	22.33	18.41	13.00	14.16	14.48	(7.85)
5	BBC A	20.33	21.72	19.74	24.31	18.32	(2.01)
6	BBNI	13.09	19.53	26.60	13.82	15.48	2.38
7	BBRI	25.11	25.33	21.99	28.19	18.45	(6.66)
8	BJBR	20.49	15.81	17.66	28.33	12.82	(7.67)
9	BMRI	20.27	20.49	17.11	26.31	13.72	(6.55)
10	BRPT	(3.46)	(0.22)	0.02	19.06	13.90	17.35
11	BSDE	21.69	21.62	10.62	8.29	17.46	(4.23)
12	GGR M	14.90	16.24	16.99	16.65	18.26	3.36
13	HMS P	76.35	74.20	32.34	36.66	36.59	(39.76)
14	ICBP	17.24	16.77	18.46	19.65	17.37	0.14
15	INDF	13.45	11.67	11.29	11.34	10.78	(2.67)
16	INTP	22.71	20.7	17.8	14.54	7.48	(15.23)

No	Symb	2013	2014	2015	2016	2017	Change (2013- 2017)
			9	4			
17	JSMR				11.04		0.02
		11.38	10.6	10.6		11.4	
			4	7		0	
18	KLBF				18.89		(6.00)
		23.58	21.6	19.0		17.5	
			9	5		8	
19	LPKR				7.41		(5.60)
		11.82	16.9	3.26		6.22	
			8				
20	LPPF	(147.2	799.	162.	107.58		228.24
		0)	10	58		81.0	
						5	
21	MNC				16.29		(7.07)
	N	23.13	19.7	13.2		16.0	
			1	0		6	
22	MYR				1.13		1.23
	X	(2.44)	0.02	0.23		(1.22	
						)	
23	PGAS				9.94		(27.98)
		32.57	25.2	13.8		4.59	
			5	5			
24	PTBA				17.77		(3.17)
		31.14	24.4	20.2		27.9	
			9	0		7	
25	PWO				16.12		(12.05)
	N	27.70	31.3	14.9		15.6	
			5	0		5	
26	SCM				40.53		(16.40)
	A	46.10	41.6	45.0		29.7	
			4	9		0	
27	SMG				14.29		(21.23)
	R	26.84	22.3	16.9		5.61	
			5	9			
28	SRIL				17.63		(0.68)
		15.55	19.2	19.9		14.8	
			1	8		7	
29	SSMS				17.41		(8.23)
		27.27	24.5	18.8		19.0	
			6	2		4	
30	TLK				25.65		0.73
	M	26.35	24.9	25.6		27.0	
			3	3		8	
31	UNT				12.19		(2.19)

No Symb	2013	2014	2015	2016	2017	Change (2013- 2017)
32 UNV	125.81	127.95	121.48	126.64	137.38	11.57
33 WIK					9.03	(10.41)
34 WSK				10.79		2.97

Based on Table 4, by comparing the achievement of changes in the ROE ratio during the period of 2013-2017, 23 LQ45 companies were identified as having experienced a decrease in ROE; while only 11 companies managed to increase ROE value. The highest positive change (or increase) in ROE was achieved by PT. Matahari Department Store Tbk. (LPPF) of 228.24 percent; while the highest negative change (or decrease) in ROE performance was experienced by PT. Hanjaya Mandala Sampoerna Tbk. (HMSP) of minus 39.76 percent. These results indicates that the majority of LQ45 companies during the study period experience decreased ability to generate returns through the management of their equity obtained from shareholders, and the condition can lead to negative sentiment towards the company's growth prospects.

### 3.2. Discussion

DuPont analysis is a detailed description of ROE as one of the company's profitability performance indicators. ROE is a ratio that shows the company's ability to generate returns for its shareholders. This analysis is considered important to be conducted periodically, especially for LQ45 companies, to identify strengths and weaknesses in their financial management in order to establish the right strategy to respond. In this study, DuPont systems used to decompose ROE into three primary elements, which are NPM (operating efficiency), TATO (asset use efficiency), and EM (financial leverage). This procedure is similar to that performed by (Sheela and Karthikeyan, 2012; Phrasasty and Azizah, 2013; Tarmizi and Marlim, 2016) in their study.

The analysis of ROE shows that the majority of LQ45 companies experience a decrease in profitability performance or the ability to generate return from the management of each nominal of money invested by shareholders (Brigham and Houston, 2013; Doorasamy, 2016; Rahman and Mia, 2018). Of the total 34 samples, only 11 companies or 32.35 percent were able to increase the ROE value or improve their profitability performance throughout the 2013-2017 period; while 23 other LQ45 companies or 67.65 percent were considered to have failed or experienced a decline in ROE value in 2017 compared to that achieved in 2013. The decline in ROE-based financial performance experienced by the majority of LQ45 companies could lead to an unfavorable assessment of investors regarding business growth prospects, and subsequently can create negative market sentiment towards overall capital market activity due to the value of the LQ45 index plays an important role in the IHSG index. DuPont systems are useful to analyze in depth whether the decrease in ROE is due to normal business operational activities such as a result of a large depreciation value, or the effect of a decrease in profit

margins, low asset turnover, or poor leverage (Phrasasty and Azizah, 2013; Ivan and Noveria, 2014; Mohideen and Parveen, 2014; Doorasamy, 2016).

Based on the results of the analysis, the main problem faced by the majority of LQ45 companies related to the decrease in ROE is the decline in TATO ratio. In other words, the results stated that the decrease in the profitability performance of the LQ45 company was due to a decrease in their ability to efficiently use the total assets held in an effort to produce an increase in sales value (Soliman, 2008; Ivan and Noveria, 2014; Mohideen and Parveen, 2014). Table 2 shows that out of a total of 34 samples, only 6 LQ45 companies or 17.65 percent were able to increase the TATO value or improve the efficiency performance of the use of total assets held during the study period; while 28 other LQ45 companies or 82.35 percent are considered to fail or experience a decline in TATO value in 2017 compared to 2013. Thus, to increase ROE performance, the LQ45 companies must establish the strategies that encourages increased asset turnover. The strategies such as intensifying marketing strategies to increase product sales without adding assets; liquidate assets that are not productive, obsolete or not used; asset lease instead of buying them because the assets leased are not considered as fixed assets so they do not increase the value of total assets; find ways to improve the efficiency of asset use such as retraining the machine operators, updating machines with types that are able to produce more output, using a computerized system so the performance of machines and human resources are easily evaluated; and to improve the management of working capital, as accelerating the collection of receivables using the billing system via banking or hiring contract workers to collect money; or, designing a better inventory (raw materials, semi-finished goods or finished goods) control system. If the company is able to enhance its asset turnover, it is hoped that it can generate sales value, and further increase the return that can be shared to shareholders.

The next disadvantage faced by the majority of LQ45 in relation companies with a decrease in ROE is the decline in the value of the NPM ratio, which is the decline in their ability to generate net income based on sales (Brigham and Houston, 2013; Ivan and Noveria, 2014; Munawir, 2014). Table 1 shows that during the study period, only 11 companies of 34 samples or 32.35 percent were able to increase NPM or increase the amount of net income obtained from the total net sales generated; while 23 other LQ45 companies or 67.65 percent experienced a decrease in the NPM value in 2017 compared to that achieved in 2013. To anticipate the problem of the NPM reduction, in an effort to increase ROE, there are several alternative strategies that LQ45 companies can do. The first strategy is to strive to enhance asset turnover, for example shortening delivery time at customers, because this effort reduces the overhead cost per product unit and increases the profit margin received. The next strategy is to increase the price of products sold, but this effort must be accompanied by an increase in service quality (including the after after-sales services), because it is very vulnerable to consumer rejections that are price sensitive. The third alternative is refocus the market, where companies only serve certain customer segments that are considered loyal and ignore unprofitable customers, or only provide a number of types of products that are quickly sold on the market. The fourth strategy that can be done is that companies streamline the organization and only employ reliable and deft employees, do not facilitate overtime hours for employees, and provide rewards based on the performance of product unit sales per customer, resulting in productive daily working hours and reduced unnecessary costs or expenses that can reduce the profits obtained. If the company is able to enhance the net profit margin, it can increase the amount of return that can be distributed to shareholders, and is expected to create positive sentiment from investors on the prospects of the company's growth.

The latest findings identified in DuPont analysis to respond to the decrease in ROE from LQ45 companies is a decline in EM value, which means that the majority of LQ45 companies in 2017 increasingly enlarge the portion of the use of equity obtained from shareholders rather than debt to finance their total assets (Gitman and Zutter, 1989; Lesmana, 2012; Brigham and Houston, 2013). Table 3 shows that out of 34 samples, 15 companies or 44.12 percent implemented policies to increase the portion of debt in financing their total assets throughout the study period; while 19 other LQ45 companies or 55.88 percent oriented towards reducing the debt portion and increasing the use of equity in financing their assets in 2017 compared to 2013. There is a tendency of the majority of LQ45 companies to increase the use of equity rather than debt in funding their total assets can be a signal positively related to the independence of the company and reduce dependence on debt in its business activities; but has the consequence of lowering the value of the EM ratio. To increase the EM value, the LQ45 companies are advised to increase the portion of its debt capital in total assets. The important thing to remember is that the use of debt can increase default risk or bankruptcy risk for the company, or create additional liabilities such as interest expenses which erode the profits earned from sales. However, the use of productive and targeted debt becomes leverage for the creation of competitiveness and the improvement of the company's profitability performance, and to maximize the return for shareholders.

After all, the alternative strategies implemented by the LQ45 company should be supported by relevant parties. Intervention by the government as the authority of national economic through related institutions, both in the form of facilities and infrastructure, as well as the determination of various economic policies, that support the competitiveness of LQ45 companies and encourage their profitability performance, are also urgently needed.

Nonetheless, the main limitation in this study is to conduct the DuPont analysis on groups of companies from different industry. As warned by (Chang, Chichernea and HassabElnaby, 2014) and (Fairfield and Yohn, 2001) that this type of analytical effort has weaknesses in general conclusions or determining the proper solutions or strategies due to the existence of a number of companies that have unique characteristics. For example, the existence of special characteristics in the form of strict financial regulation in the banking sector can raise biases on conclusions or policy recommendations when compared to labor-intensive industrial sectors. Therefore it is recommended for the next researcher to concentrate DuPont analysis of companies in the sama industrial sector, so the findings can produce conclusions that be applied generally to the group.

Efforts to analyze using the DuPont system are also recommended for subsequent researchers to decompose NPM into three sub-elements, namely EBIT Margin, Interest Burden, and Tax Burden. Thus, the modified model of DuPont includes five elements, that is three sub-elements of NPM, TATO and EM. As suggested by (Rahman and Mia, 2018), through this formula can be obtained a deeper understanding of the points of strength and weakness of the company in managing its financial performance.

#### **4. Conclusions**

The results of DuPont's analysis of 34 LQ45 companies that were sampled concluded that during the study period: (a) 23 companies experienced a decrease in NPM values, while 11 companies experienced an increase in the value of NPM; (b) 28 companies experienced a decrease in TATO value, while 6 companies experienced an increase in TATO value; (c) 19 companies experienced a decline in EM value, while 15 companies experienced an increase in EM value; and, (d) 23 companies experienced a decrease in ROE values, while 11 companies

experienced an increase in ROE values. Thus, the results of DuPont's analysis identified that the majority of LQ45 companies experienced a decline of ROE-based performance, and were judged primarily due to the decline in TATO they achieved; namely, they are not able to efficiently manage all assets or resources owned to generate a high net sales amount.

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