

Financial Performance Analysis of Indonesia Pharmaceutical Industry before and After the Implementation of National Health Insurance

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After the Health Social Insurance Administration Organization (BPJS Kesehatan) implemented the national health insurance (Jaminan Kesehatan Nasional) in 2014, The profit of pharmaceutical MNCs has been reported to be dropping ever since. Although the pharmaceutical industry had 7.49% growth in 2016, this number actually dropped as the industry had double-digit growth at 12.31% in 2013. Thus, this study aims to measure the financial performance of pharmaceutical companies and will analyse the significant differences before and after the implementation of the national health insurance. The data was retrieved from annual financial reports and the period was divided into two periods, before the implementation of national health insurance (2011-2013) and after the implementation (2015-2017). The data was examined using financial ratio analysis, and paired t-test were applied to test the hypothesis based on the 11 variables or financial ratios. The results indicated that although the company still had a positive return on investments, the implementation of national health insurance has affected the profitability of the organisation. It also reveals that the overall financial performance of PT Kimia Farma is significantly affected after the implementation with a significant difference on 7 of the financial ratios examined in this study. The author believes that the findings will be helpful for managers to give insights when taking decisions.

Key words: *Financial Performance, Pharmaceutical Industry, Indonesia*

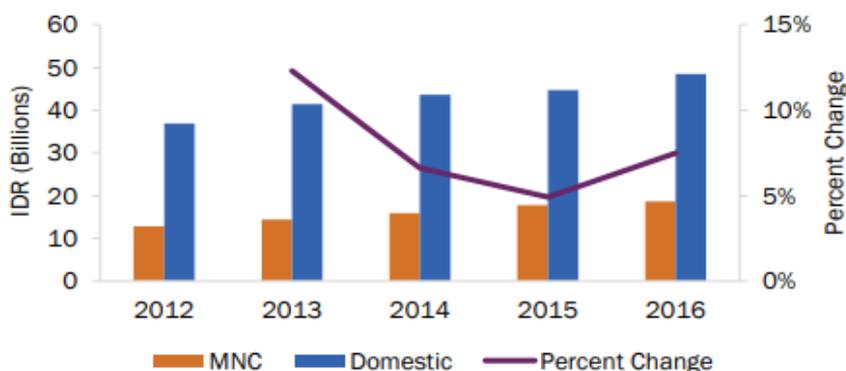
Introduction

The government decided to implement a better health insurance program to its citizens by appointing PT Askes (Persero) to administer social security programs in healthcare with Indonesian national health insurance (*Jaminan Kesehatan Nasional*) in 2014. The business of health sectors such as healthcare, pharmaceutical, and health insurance industries were inevitably affected by this program. With the issue of law *Undang-Undang no. 24 tahun 2011*, PT Askes (Persero) was turned into Health Social Insurance Administration Organization (*BPJS Kesehatan*) to administer the government's target, which is to cover health insurance for all Indonesian citizens by 2019. By offering much lower insurance premiums with unlimited insurance and a disregard of pre-existing conditions, many have registered for the insurance (Zuhra & Pramisti, 2017).

This, however, has resulted in significant impacts on the pharmaceutical industry. A report revealed that the national health insurance (JKN) was initially anticipated as a good business opportunity, since there will be growth in the volume of medications demanded. However, the profit of pharmaceutical MNCs has dropped since the implementation of the insurance scheme, according to 43% of respondents from those companies (Britton, Koseki, & Dutta, 2018, p. 28).

Moreover, since JKN mostly uses generic drugs, some pharmaceutical MNCs could not compete, thus needing to reduce their production capacity and were forced to lay off workers, even closing down their offices in Indonesia. Although the pharmaceutical industry had a 7.49% growth in 2016, this number actually dropped as the industry had double-digit growth at 12.31% in 2013 (Britton, Koseki, & Dutta, 2018, p. 25-28).

Figure 1. Total Pharmaceutical Market 2012-2016.



Source: Britton, Koseki, & Dutta, 2018, p. 28.

There are a number of other challenges that have been experienced by the pharmaceutical industry since the implementation of JKN. In order to be listed as the drug supplier for the

JKN program, pharmaceutical companies need to win e-catalogue tender. *BPJS Kesehatan* decides the winner with the lowest price bid, hence causing suppliers to have limited stock and lower quality drugs for patients with a limited distribution channel due to the unsustainably low price. Some local pharmaceutical companies tried to decrease or delay the drug supply, rather than lowering the quality when the prices are set too low. The decreasing of prices of up to 96% has caused the margin to drop down to US\$0.10 cents per pill. Thus, it has been reported that not only the quality of the drugs, but also the packaging has decreased in quality, including production costs to compensate for low profit margins. Moreover, private hospitals are also demanding a similar price as the e-catalogue that is publicly accessible. Thus, pharmaceutical companies are forced to be even more efficient (Britton, Koseki, & Dutta, 2018, p. 29). It is also reported that *BPJS Kesehatan* had a deficit of Rp. 350 billion during period of January to October 2016. The arrears fee for one company can be more than Rp. 15 billion and the arrears period can be more than 4 months (Aldila, 2016). Moreover, the arrears from BPJS participants have reached 3.4 trillion in 2017 (Adityowati, 2017), which potentially affects the arrears fee on the overall health sectors involved, including pharmaceutical companies.

Although a number of reports on the impact of national health insurance on health sectors including the pharmaceutical industry have been released, the reports are covering wider landscape of the sectors. Studies and analysis of the financial performance of pharmaceutical companies both before and after the implementation of JKN are still limited. Hence, this study would like to measure the financial performance of the pharmaceutical industry using financial ratio analysis and to analyse the changes of the performance before and after the implementation of JKN.

This study is also expected to give insights into the pharmaceutical companies on the evaluation of the financial performance and decisions that need to be made.

This study uses PT Kimia Farma Tbk as the subject of the study, as it is the biggest pharmaceutical state-owned enterprise that plays an important role in supplying generic drugs. It is reported that PT Kimia Farma Tbk experienced significant sales growth in 2016, which is 19% with total sales of Rp. 5.8 trillion. While in 2015, they only had a 6.6% growth in sales and 4.14% in 2014. However, net profit growth in 2016 is only 2.2% compared to 13.15% growth in 2015, and 9.36% in 2014 (Zuhra & Pramisti, 2017). According to the president director, the challenges in increasing the profit is due to a low profit margin for generic drugs (Zuhra & Pramisti, 2017).

The analysis of the financial performance of PT Kimia Farma Tbk is done by studying the financial reports of the two companies in the period from 2011 before the implementation of national health insurance until 2017. The indicators of the financial performance are

measured by calculating the ratio and comparing each ratio between the two companies. The indicators that are used in this study are profitability, liquidity, activity, and solvency ratio.

This study is arranged into six sections. The first section covers the introduction, followed by the previous researches about financial performance in section two. The third section examines the methodology, results and discussions are addressed in section four, limitations are discussed in section five, and the conclusion and recommendations are in section six.

Previous researches about financial performance

There are numerous studies on financial performance using financial ratio analysis in different kinds of industries around the world, from the electric power industry (Sueyoshi, 2005), hospitality (Kim & Ayoun, 2005), retail and manufacturing (Gombola & Ketz, 1983), to commercial banks (Islam, 2014). Kumbirai & Webb (2010), analysed the performance of commercial banks in South Africa during the period of 2005-2009, using the descriptive financial ratio analysis. The study revealed that in terms of profitability, liquidity, and credit quality, the overall bank performance has been increasing since 2005, up to and including 2007. Another study on the oil and gas industry in Indonesia analysed the financial performance of an oil company before and after global crises also using the financial ratio analysis, using indicators such as profitability ratio, liquidity ratio, and price to earnings ratio (Putra, Lahindah, & Rismadi, 2014).

There are also a number of studies that have been done on financial performance, specifically in the pharmaceutical industry. A study on the Nigerian pharmaceutical industry tried to determine profitability using descriptive financial ratio analysis. The indicators used in the study are, inventory turnover ratio, debtors' turnover ratio, creditors velocity, total assets turnover ratio, and gross profit margin (Innocent, Mary, & Matthew, 2013). Another study on the pharmaceutical industry in India about the financial performance using DuPont Analysis, the study also measured the firm's profitability using financial ratio analysis based on three indicators: ROA, ROE and ROI.

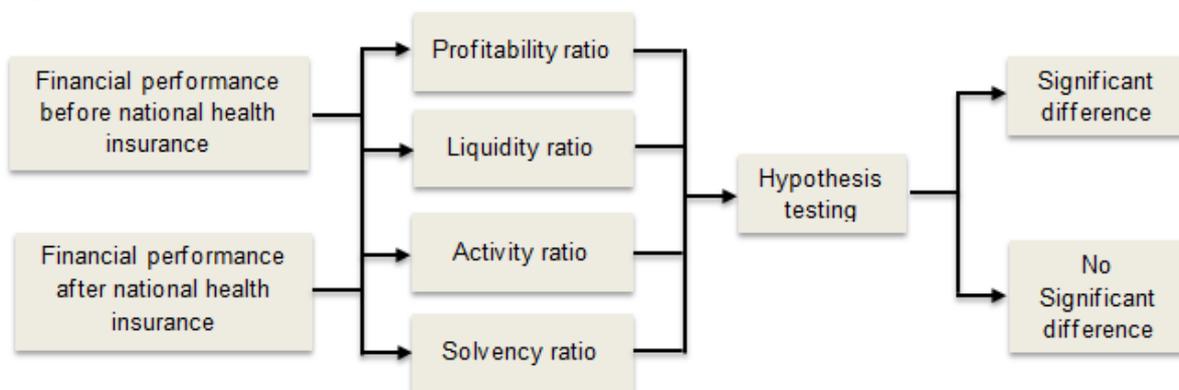
The study found that the financial performance of the three companies in the case study are high and significant at their level, and it was concluded that "ROE & ROI is the most comprehensive measure of profitability of a firm. It considers the operating and investing decisions made, as well as the financing and tax-related decisions" (Sheela & Karthikeyan, 2012). Although there are already a number of studies on the financial performance of the pharmaceutical industry, studies based in Indonesia are still limited. Corporate reports on the overall health sector landscape started to increase, however, after the implementation of the national health insurance.

Methodology

This study uses descriptive financial ratio analysis to examine the financial performance of pharmaceutical companies in Indonesia during the period of 2011-2017. It also uses comparative analysis to study if there is a significant difference in the financial performance of the pharmaceutical company in 2011-2013, before the national health insurance and during the period of 2015-2017 after the implementation of the insurance. A paired sample t-test was applied to test the hypothesis based on 11 variables as specified in the variables section.

Research Model

Figure 2. Research Model



This research model is adapted from a study that measured the financial performance differences between a particular situation as well. The study is done by Putra et. Al (2014), to analyse the financial performance differences of the oil and gas industries before and after global crises. Although the study is for a different industry than the pharmaceutical industry as the objective of this study, the methodology of descriptive financial ratio analysis and the comparison before and after a particular event is deemed fit for this study.

Hypothesis

H1: Using the return on investment ratio, there is a significant difference in financial performance after the implementation of national health insurance.

H2: Using the return on equity ratio, there is a significant difference in financial performance after the implementation of national health insurance.

H3: Using the return on asset, there is a significant difference in financial performance after the implementation of national health insurance.

H4: Using the cash ratio, there is a significant difference in financial performance after the implementation of national health insurance.

H5: Using the current ratio, there is a significant difference in financial performance after the implementation of national health insurance.

H6: Using the collection period ratio, there is a significant difference in financial performance after the implementation of national health insurance.

H7: Using the Inventory turnover ratio, there is a significant difference in financial performance after the implementation of national health insurance.

H8: Using the total asset turnover ratio, there is a significant difference in financial performance after the implementation of national health insurance.

H9: Using the total equity to total asset ratio, there is a significant difference in financial performance after the implementation of national health insurance.

H10: Using the liability to equity ratio, there is a significant difference in financial performance after the implementation of national health insurance.

H11: Using the liability to total assets ratio, there is a significant difference in financial performance after the implementation of national health insurance.

The Variables

Profitability Ratio	
a. Return on investment	$(\text{Net income} / \text{investment}) \times 100\%$.
	Return on investment is used to calculate the efficiency of an investment relative to the investment's cost.
b. Return on equity	$(\text{Net income} / \text{shareholders' equity}) \times 100\%$.
	Return on equity evaluates how much a company has gained on the funds invested by shareholders.
c. Return on assets	$(\text{Net income} / \text{total assets}) \times 100\%$.
	Return on assets shows how much a company has gained on the investment of all the financial resources dedicated to the company.
Liquidity Ratio	
a. Cash Ratio	$(\text{Cash} + \text{cash equivalents} / \text{current liabilities}) \times 100\%$
	Cash ratio evaluates the ability of a company to fulfil current liabilities with only cash and cash equivalents.
b. Current Ratio	$(\text{Current asset} / \text{current liabilities}) \times 100\%$.
	Current ratio evaluates the ability of a company to fulfil its current liabilities with current assets.
Activity Ratio	
a. Inventory Turnover ratio	Cost of goods sold/average inventory.

	Inventory turnover ratio is used to calculate how many times a company sold its inventory during the year to show the effectiveness of inventory management.
b. Total asset turnover ratio	$(\text{Sales revenue}/\text{total assets}) \times 100\%$.
	Total asset turnover ratio reflects the ability and efficiency of a company's assets to generate sales revenue.
c. Collection period	$(\text{Average Accounts Receivables}/\text{Sales Revenue}) \times 365$ days
	Collection period indicates the amount of time needed for a company to receive payment owed by customers that paid in credit (accounts receivable).
Solvency Ratio	
a. Total equity to total asset ratio	$(\text{Total equity}/\text{total asset}) \times 100\%$.
	Total equity to total asset ratio reflects the amount or percentage of assets that can be claimed by shareholders.
b. Liability to equity ratio	$(\text{Total liability}/\text{shareholders' equity}) \times 100\%$.
	Liability to equity or usually called as debt-to-equity ratio is used to indicate the amount of debt or funding used by a company to finance its assets relative to shareholders' equity.
c. Liability to total asset ratio	$(\text{Total liability}/\text{total assets}) \times 100\%$.
	Liability to total asset ratio shows the total amount of assets that funded by creditors and debt.

Results and discussion

According to the results of paired sample t-test, the following is the summary table of the financial ratios examined in this study.

Table 1: Paired Sample T-Test

Variables	Period	Means	Std. Deviation	Σ	Paired sample t-test	Decision
ROI	2011-2013	0.1307	0.01033	<0.05	0.015	Accept the first hypothesis
	2015-2017	0.0992	0.01325			
ROE	2011-2013	0.1381	0.00527	<0.05	0.297	Reject the second
	2015-2017	0.1333	0.00844			

						hypothesis
ROA	2011-2013	0.0938	0.00623	<0.05	0.019	Accept the third hypothesis
	2015-2017	0.0626	0.01192			
Cash ratio	2011-2013	0.5171	0.07833	<0.05	0.095	Reject the fourth hypothesis
	2015-2017	0.4071	0.02201			
Current ratio	2011-2013	2.6600	0.20075	<0.05	0.003	Accept the fifth hypothesis
	2015-2017	1.7264	0.18757			
Collection period	2011-2013	40.7564	1.69616	>0.05	0.229	Accept the sixth hypothesis
	2015-2017	42.9237	5.13419			
Inventory turnover	2011-2013	5.4015	0.34394	<0.05	0.032	Accept the seventh hypothesis
	2015-2017	4.3009	0.57659			
Total asset turnover	2011-2013	1.9086	0.11034	<0.05	0.017	Accept the eighth hypothesis
	2015-2017	1.4222	0.12551			
Total equity to total asset	2011-2013	0.6624	0.05850	<0.05	0.018	Accept the ninth hypothesis
	2015-2017	0.5044	0.08897			
Liability to equity ratio	2011-2013	0.4682	0.05133	>0.05	0.043	Reject the tenth hypothesis
	2015-2017	1.0235	0.34981			
Liability to total assets ratio	2011-2013	0.3168	0.02265	>0.05	0.024	Reject the eleventh hypothesis
	2015-2017	0.4956	0.08896			

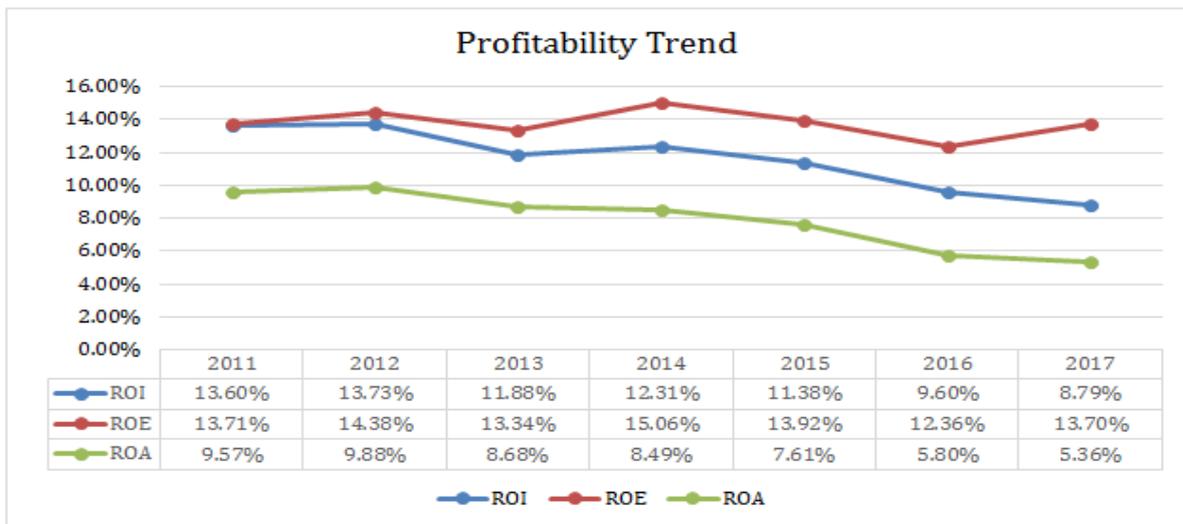
Profitability performance

According to the profitability trend during the period of 2011 to 2017 in the following figure, the return on investments and the return on assets were decreasing by 4.81% and 4.21% respectively over the years. It also shows in the average year on year growth of return on investment, which is -0.80% and -0.70% for return on assets. During the period of 2011-2014 before the implementation of national health insurance, the year on year growth of returns on investments was already -0.43%, and getting worse during the 3 years after the implementation (2015-2017), which was -1.17%. It is also reflected in the hypothesis testing for return on investment with the paired sample t-test that showed p-value < 0.05 (0.015<0.05) and t-value of -5.6994 that indicated that there is a significant difference on return on investments both before and after the implementation of national health insurance (hypothesis accepted). Hence, the result suggests that although the company has had a positive return on investments, the implementation of national health insurance has affected the profitability and has resulted in the decrease in profits. There is also significant difference on returns on assets based on the testing with p-value <0.05 (0.019<0.05) and t-value of -

5.0380. It indicates that the return on assets is also positive, but kept decreasing after the implementation of national health insurance.

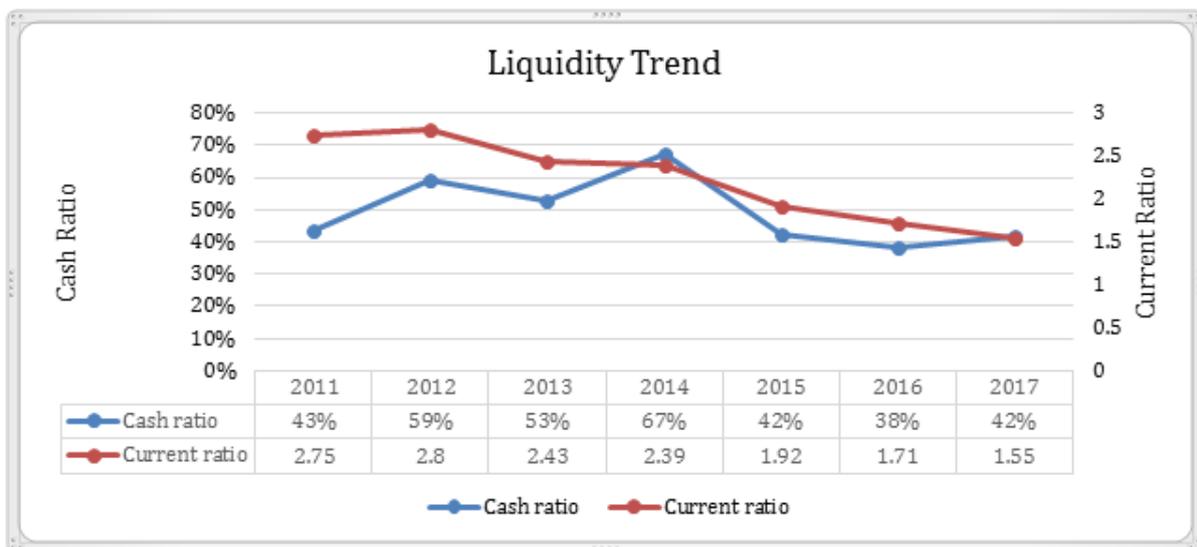
Meanwhile, the return on equity shows no significant difference, although it had dropped by 2.70% from 15.06% in 2014 after the implementation of national health insurance, to 12.36% in 2016, but made it back to 13.70% in 2017. The paired t-test also shows there is no significant difference with the p-value >0.05 ($0.297 > 0.05$) and t-value of -0.6280 .

Figure 3. Profitability Trend



Liquidity Ratio

Figure 4. Liquidity Trend



While it is apparent that the current ratio continued to drop during the period of 2011-2017, it only experienced a 13% drop from 2011-2014, but showed a significant drop of 35% from 2014-2017. The year on year growth during the former period was also lower at -12% compared to the latter period which is -28%.

It is also supported by the results of the t-test that shows the p-value < 0.05 ($0.003 < 0.05$) and t-value of -11.9746, indicating that there is significant difference in the ability of the company to pay its current liabilities with its current assets after the implementation of national health insurance. Although the company is still able to fulfil its current liability with a 1.55 current ratio in 2017, it has dropped by 44% from 2.75 in 2011.

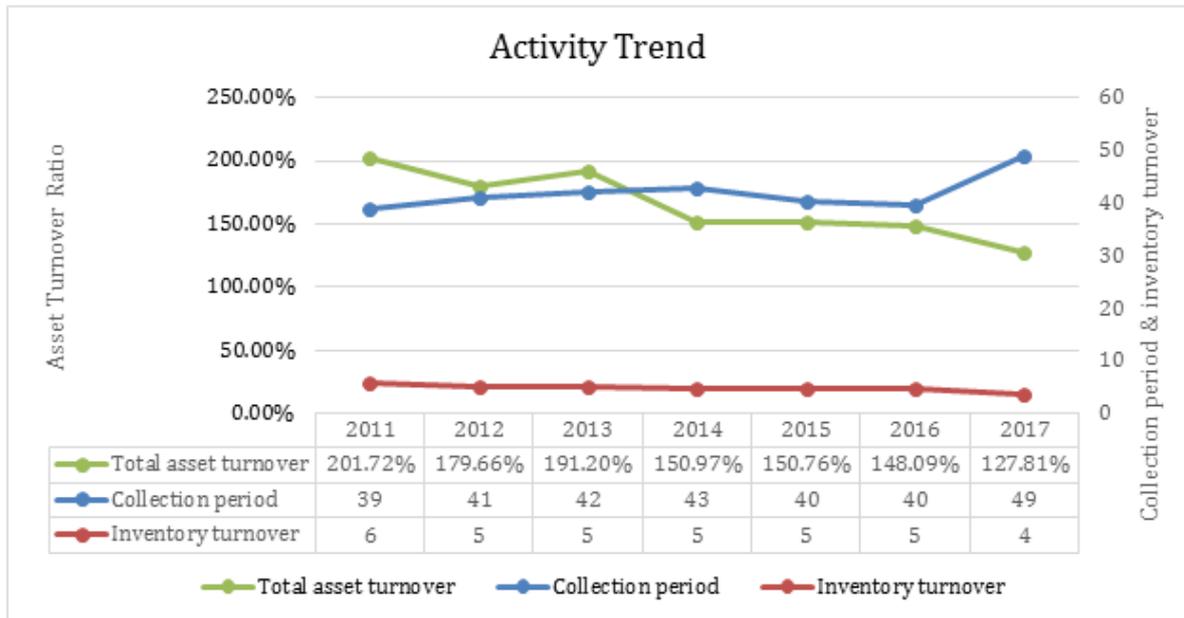
On the other hand, the cash ratio appears to be not significantly affected with a p-value of > 0.05 ($0.095 > 0.05$) and t-value of -1.9475. Although there was a significant drop of the cash ratio by 25% from 67% in 2014 to 42% in 2015, it has remained relatively stable afterwards.

Activity Performance

The total asset turnover ratio has been continuously decreasing over the years from 201.72% in 2011 to only 127.81% in 2017, which is a 74% drop. The most significant drop is seen from 2013 with 191.20% ratio to 150.97% in 2014, a 40% drop. The year on year growth during the period is 12.32%. The hypothesis testing also suggests that there is a significant difference on the total asset turnover ratio after the national health insurance with a p-value of < 0.05 ($0.017 < 0.05$) and t-value of -5.2535. This indicates that the company's total assets are still able to generate revenue, but the ability to do so keeps decreasing over the years.

In conjunction with the asset turnover ratio, the inventory turnover also shows a consistent drop, although not significant, from 6 times in 2011 to 4 times in 2017. The result of the t-test however, indicates there is significant difference with the p-value < 0.05 ($0.032 < 0.05$) and t-value of -3.7532, showing that the ability for the company to sell its inventory is decreasing after the implementation of national health insurance.

Figure 5. Activity Trend



Collection period on the other hand is showing a relatively stable ratio from 2011 to 2016, with an average of 41 days, but there was an increase sharply in 2017 to 49 days. The paired t-test resulted in a p-value of > 0.05 ($0.229 > 0.05$) and t-value of 0.9112, showing that there is a significant difference and it is taking longer for the company to receive payments from their customers with credit sales after the implementation of national health insurance.

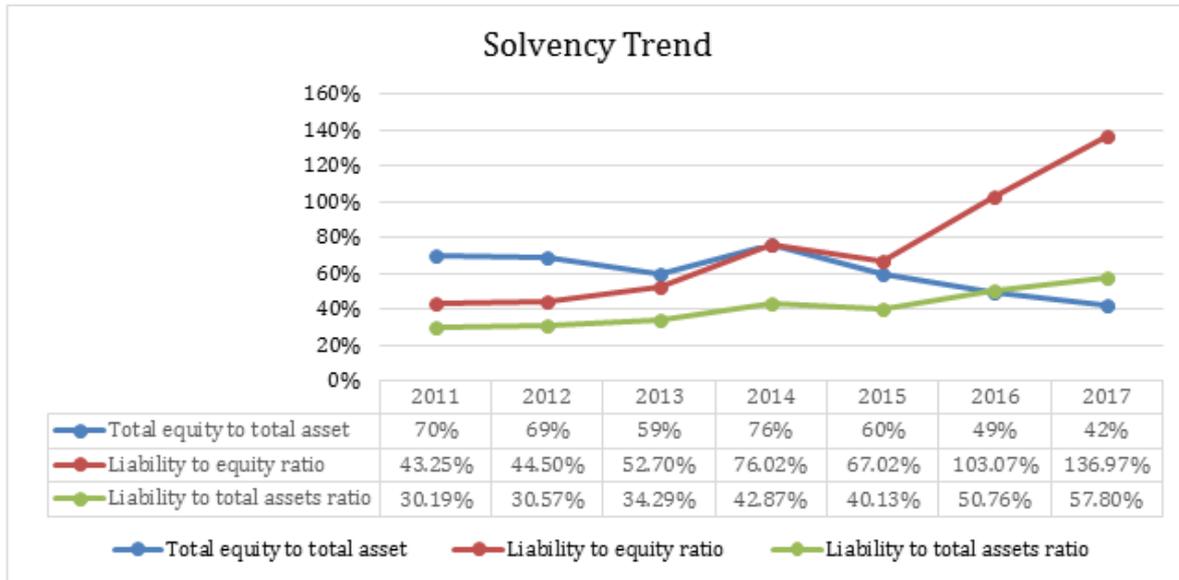
Solvency Performance

Total equity to total asset shows a relatively stable ratio from 2011-2014, with an average ratio of 69% before the national health insurance, but it started to decrease by 34% after that, from 76% in 2014 to 42% in 2017. The year on year growth of total equity to total asset ratio within the time frame of 2011-2014 is 2%, in contrast with the year on year growth after the implementation of the insurance in 2015-2017 which was -11%. The paired t-test also reflects on the significant difference before and after the implementation with the p-value of < 0.05 ($0.018 < 0.05$) and t-value of -5.1801, which indicates the amount or percentage of assets that can be claimed by shareholders is decreasing.

On the contrary, the liability to equity ratio, experienced a significant increase of 69.95% from 67.02% in 2015 to 136.97% in 2017. However, there is no significant difference according to the paired t-test result with a p-value of < 0.05 ($0.043 < 0.05$) and t-value of 3.1679. As well as the liability to equity ratio, the liability to asset ratio also increased, although slightly from 40.13% in 2015 to 57.80% in 2017, with a total increase of 17.67%.

The result of the paired t-test also shows no significant difference before and after the implementation as the p-value of < 0.05 ($0.024 < 0.05$) and t-value of 4.3780.

Figure 6: Solvency Trend



The overall results from the hypothesis testing are as follows. Out of the 11 variables, 7 hypotheses were accepted and 4 hypotheses were rejected. Overall, there is a significant difference in financial performance after the implementation of national health insurance, with 7 financial ratios affected which are, ROI, ROA, current ratio, collection period, inventory turnover, total asset turnover, and total equity to total asset ratio. There is also a possibility that it takes longer for the company to receive payment from the Health Social Insurance Administration Organization. (BPJS Kesehatan) has reported that the arrears fee to a company could reach Rp. 15 billion, and the arrears period can be more than 4 months (Aldila, 2016). Thus, less cash received might affect the current assets of companies and to fill the gap, more funding is needed that are most likely obtained from creditors, hence why the equity to total asset is affected. As also reported, due to e-catalogue bidding, pharmaceutical companies are forced to lower the price of their stock and limit their stock to compensate with a limited distribution channel (Britton, Koseki, & Dutta, 2018, p. 29), hence why the inventory turnover and total asset turnover are affected.

Limitations

This study has only analysed one state-owned enterprise as the object of the study. As there are many companies in the pharmaceutical industry including private-owned enterprises, it is suggested further that future studies measure the financial performance of more enterprises to

strengthen the findings of this study. It is also suggested to study the financial performance of not only the pharmaceutical industry, but also the health care, medical device, and health insurance industry, as these industries are most likely affected by the implementation of the national health insurance. It is also useful to use different methodology and measuring tools or indicators to give better and more accurate results.

Conclusion and recommendation

This study aims to discover whether there is a significant difference on the pharmaceutical company's financial performance before the implementation of the national health insurance in 2011-2013 and after the implementation in 2015-2017, using financial ratio analysis and paired t-test which was applied to test the hypothesis based on 11 variables. The study discovered that the overall financial performance of PT Kimia Farma was significantly affected after the implementation, with 7 financial ratios affected which are ROI, ROA, current ratio, collection period, inventory turnover, total asset turnover, and total equity to total asset ratio. This study also found that there are 4 financial ratios that are insignificantly affected which are ROE, cash ratio, liability to equity and liability to asset ratio. This study has expanded the theory of financial ratio analysis from the pharmaceutical industry and will give a better insight for managers to make decisions.

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