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FINANCIAL PERFORMANCE ANALYSIS PT BIO FARMA (PERSERO) COMPARE TO DEVELOPING AND LEADING PHARMACEUTICAL MANUFACTURERS

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Abstract. *PT Bio Farma as the only one vaccine manufacturer in Indonesia, the first in ASEAN and one of the 30 world companies which gain WHO(World Health Manufacturer) prequalification certification which considered as the highest standard of quality, faces the tight competition in current vaccine and global pharmaceutical market. As a result, to develop such good strategic, the company needs to assess its performance with one of the option by comparing company's financial report with existing financial ratios methodology. The methodology using both quantitative and qualitative approaches with uses of three main frameworks to 10 world companies that divided by Indonesia companies, Other Developing Countries and Global Leading Pharmaceutical Manufacturers: 1. Most Common Financial Ratios 2. BUMN Financial Scoring 3. Moody's Global Pharmaceutical Rating. The result then will be analyzed by qualitative approach to give recommendation for the company. Although Bio Farma considered as the small companies within the samples, in general Bio Farma has outperformed most of the financial ratios above the industries average with the exception of total asset turnover, product theurapetic diversity, revenues and too high of current and cash ratio which indicates the unproductive investment. Example of above ratios are Net Profit Margin 24% (Global 8%), Dupont Analysis 22% (Global 16%), considered as Healthy in BUMN Scoring (Total Score 94%, Global 70%) and obtained Baa1, 7.92 in Moody's Rating, only below Leading Industries Moody's Rating Average.*

Keywords: Financial performance analysis, financial assessment, dupont Analysis, financial ratios, BUMN Scoring, Moody's Rating.

Introduction

Healthcare has became the basic fundamental needs in every human life. Every activities in the daily life rely on health as the main pillar to accomplish all tasks, assignments and even to maintain personal life. Therefore, it is not rarely to be found that people spending much ratios on this category either to maintain their health (preventive) or as a treatment for their sickness (curative). The World Bank data shows that although there has been steady growth in total health expenditure percentage of GDP with only 0.1% increase from 2004 to 10.2% in 2012, in terms of total health expenditure per capita (US$), it has increased significantly in the last decade, from 664.1 in 2004 to 1,030.4 in 2012.

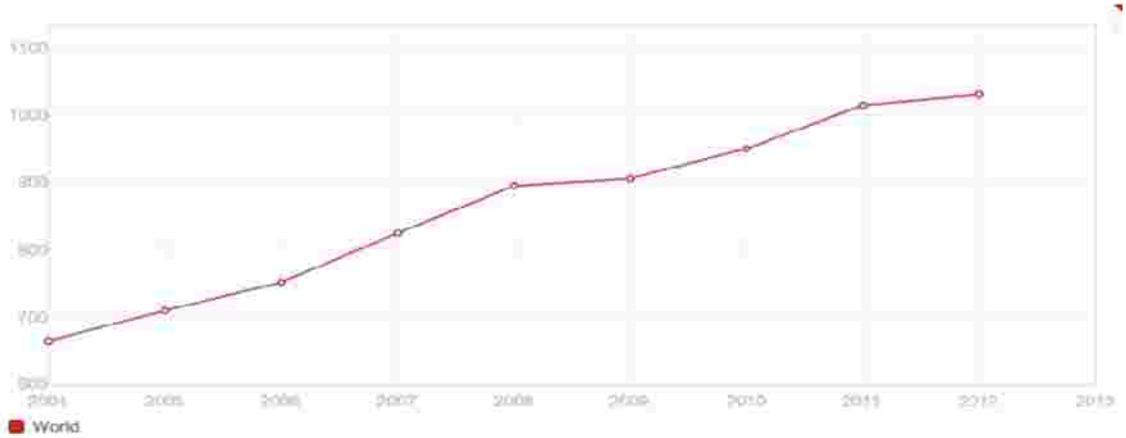

Figure 1. The World Bank data for world average in health expenditure per capita (US$) .

One of the preventive healthcare choices is to do vaccination. Unlike other developing countries, most of Indonesia's local vaccines being provided by its origin vaccine company, which is Bio Farma. Bio Farma is the only state-owned enterprise (SOE) that produces vaccines and antisera in the world. The accomplishments of Bio Farma have been globally recognized. Since 1997, Bio Farma has been one of approximately 29 vaccine manufacturers/22 countries globally who have earned WHO Prequalification, the highest standard of product quality, earning the world's trust to meet the needs of vaccines in more than 127 countries.

As one of the 21 companies in the world which could supply the national and international vaccine demand, Bio Farma face the problem which is tight competition in the current rapid markets. As a result, evaluation and assessment is needed to measure the company's development progress comparing to the similar enterprises. One of the useful assessment is reviewing company's financial statement which consist of income statement, cash flow statement and the balance sheet. Income statement purpose is to inform how the company generated profits, cash flow statement identifies the sources and amounts of cash in and cash out of the company during the specified period and the balance sheet shows assets, liabilities and capital of the company. In assessing corporate performance, ratio analysis is also performed to compare with other companies. Ratio is calculated, among others, liquidity ratio, profitability ratio, financial leverage, especially for the future financial development. The growth in company among 5 years also being calculates. In addition, the assessment also uses the state-owned scoring from Indonesia's State Ministry, Dupont Analysis and assessment of the global use of Moody's global pharmaceutical rating methodology.

Literature Review

According to Mautz et al (2006), Financial statements are prepared to help investors and creditors understand the financial history of a company and use that knowledge to predict the amount, timing and uncertainty of both future cash flows and price appreciation. Financial statement analysis is an attempt to answer four broad questions. These questions define the major dimensions of financial performance, referred to throughout the remainder of this article: profitability and market performance, liquidity, efficiency and capital structure.

According to Dennis, Michael C, (1995) there are several limitations in Financial Statement Analysis:

1. Past financial performance, good or bad, is not necessarily a good predictor of what will happen with a customer in the future.
2. The more out-of-date a customer's financial statements are, the less value they are to the credit department.

3. Without the notes to the financial statements, credit managers cannot get a clear picture of the scope of the credit risk they are considering.
4. Unless the customer financial statements are audited, there is no assurance they conform to generally accepted accounting principles. As a result, the statements may be misleading or even completely fraudulent.
5. To see the big picture, it is necessary to have at least three years of financial statements for comparison. Trends will only become apparent through comparative analysis.

Most Common Financial Ratios

According to Mautz et all (2006) there are 5 most common used financial ratio categories:
1.Profitability and Market Performance
The company's net income is the most obvious indicator of success.
A.Net Profit Margin = Net income/sales
The net profit margin reflects the impact of interest and income tax expense, cost of goods sold and operating expenses.
2.Liquidity
Liquidity means that the company either has sufficient cash to meet its short-term obligations or is capable of raising funds on short notice when necessary. Maintaining sufficient liquidity is an important issue for all companies.
A.Current Ratio = Current Asset / Current Liabilities
In theory, current assets are those assets that will be converted to cash (or consumed) within one operating cycle-typically a year. "Current liabilities" are defined as obligations that will consume current assets.
B.Quick Ratio = Current Ratio – Inventories / Current Liabilities
The quick ratio, excludes inventory from the numerator, because inventories may not be quickly sold and converted into cash. he quick ratio confirms the impression that, company has sufficient assets to meet its current obligations.
3.Efficiency
In addition to achieving profitability and maintaining liquidity, management is responsible for using company assets efficiently.
A.Total Asset Turnover = Sales/Average Total Assets
The calculation of this ratio indicates the whole investment efficiency by aggregating the joint impact of short and long term asset
B.Inventory Turnover = Cost of goods sold/ Inventories
“Measures the efficiency of the firm’s inventory management. A higher ratio indicates that the inventory does not remain in warehouse or on the shelves but rather turns over rapidly from time of acquisition to sale.” (White, Sondhi, Fried;2002; 120)
4. Capital Structure
Most companies use debt to finance a portion of their assets. Debt is the least costly individual source of funds for the company. However, it does increase the risk to investors in all securities of the company. Thus, the company must achieve a balance between the tax benefits and the added costs associated with the use of debt.
A.Debt Ratio = Total Liabilities / Total Asset
Financial leverage ratios (debt ratios) measure the ability of a company to meet its financial obligations when they fall due. Financial leverage ratios (debt ratio) indicate the ability of a company to repay principal amount of its debts, pay interest on its borrowings, and to meet its other financial obligations.
A.Debt to Equity = Total Liabilities / Total Equity
A measure of a company's financial leverage calculated by dividing its total liabilities by stockholders' equity. It indicates what proportion of equity and debt the company is using to finance its assets.
B.Equity Multiplier = Total Asset / Total Shareholders’ value

The equity multiplier is a financial leverage ratio that measures the amount of a firm's assets that are financed by its shareholders by comparing total assets with total shareholder's equity. In other words, the equity multiplier shows the percentage of assets that are financed or owed by the shareholders.

5. Dupont Analysis

While there is no universally accepted model for summarizing the results of a financial statement analysis, the DuPont analysis is a popular approach for focusing on the factors that determine profitability (Mautz et al. 2006). DuPont analysis decomposes the return on equity (roe) into three factors:

ROE = net profit margin × asset turnover × equity multiplier

(where: net profit margin = net income/sales; asset turnover = sales/assets; and equity multiplier = assets/equity)

BUMN Financial Scoring

As the one of State-Owned company, the financial scoring of PT Bio Farma is regarded to decision regulation of state-owned from ministry of BUMN. The financial scoring is based to the ministerial decree state-owned enterprises number: KEP-100/MBU/2002.

Based on the clause 3 subsection 1, the assessment of BUMN companies are classified into three categories in the table below.

Table 1 .BUMN Scoring Rating

Healthy, consists of	
AAA	Total Score>95
AA	80<Total Score<95
A	65<Total Score<80
Less Healthy, consists of	
BBB	50<Total Score<65
BB	40<Total Score<50
B	30<Total Score<40
Less Health, consists of	
CCC	20<Total Score<30
CC	10<Total Score<20
C	C<Total Score<10

Table 2. BUMN Scoring Indicators

Indicators	Weight	
	Infrastructure	Non Infrastructure
1. Imbalan kepada pemegang saham (ROE)	15	20
2. Imbalan Investasi (ROI)	10	15
3. Rasio Kas (Cash Ratio)	3	5
4. Rasio Lancar (Current Ratio)	4	5
5. Collection Periods	4	5
6. Perputaran Persediaan (Inventory Turnover)	4	5

7. Perputaran Total Asset (Total Asset TurnOver)	4	5
8. Rasio Modal sendiri terhadap total asset (Equity Ratio)	6	10
Weight	50	70

1.ROE = Net income after Tax / Shareholders' Equity'
2. ROI = EBIT + Depreciation / Total Asset – Fixed Asset
3. Cash Ratio = Total Cash + Cash Equivalents + Short Term Marketable Securities / Current Liabilities * 100%
4. Current Ratio = Current Asset / Current Liabilities * 100%
5. Collection Periods (CP) = Account Receivables * 365 days / Sales
6. Inventory Turnover = Total Inventory * 365 days / Sales
7. Total Asset Turn Over (TATO) = Sales / Capital Employed
8. Equity Ratio = Total Shareholders' Equity / Total Assets

Moody's rating (Global Pharmaceutical Industries)

This rating methodology explains Moody's approach to assessing credit risk for companies in the pharmaceutical industry globally. This methodology includes a detailed rating grid and illustrating mapping examples that compare historical performance on factors in the grid to ratings of companies covered by this methodology. The purpose of the rating grid is to provide a reference tool that can be used to approximate credit profiles within the pharmaceutical sectors in most cases. The grid provides summarized guidance for most of the factors that are most important in assigning ratings to the companies (Moody's Global Pharmaceutical Industries Rating, 2012).

FIGURE 2
Global Pharmaceutical Industry

Broad Rating Factors	Factor Weighting	Rating Sub-Factors	Sub-Factor Weighting
Scale	25%	Revenue	25%
Business Profile	25%	Product and Therapeutic Diversity	15%
		Geographic Diversity	10%
Patents and Pipeline	16%	Patent exposures	8%
		Pipeline quality	8%
Leverage and Cash Coverage	24%	Debt/EBITDA	9%
		(Cash Flow from Operations)/Debt	9%
		Pharmaceutical Cash Coverage of Debt	6%
Financial Policy	10%	Financial Policy	10%
Total	100%	**Total**	100%

Figure 2 .Moody's Global Pharmaceutical Industry Grid Factors

Methodology

In this final project, PT. Bio Farma (Persero) is going to be main company to be analyzed. The first step the researcher has to do in this research paper is arranging several steps that will be implemented as the process on doing this final projects.

]In this final project, the author will apply several steps to assess the financial performance of the companies. The methods that will be used in this final project consist of most common financial statement analysis ratios, BUMN Scoring and Moody's Global Pharmaceutical Industry Rating.

The result from the assessment will be applied to compare the data between PT. Bio Farma (Persero) with other pharmaceutical firms. Additionally, the financial scoring rating will be used to analyze whether the corporations have robust financial performance or not.

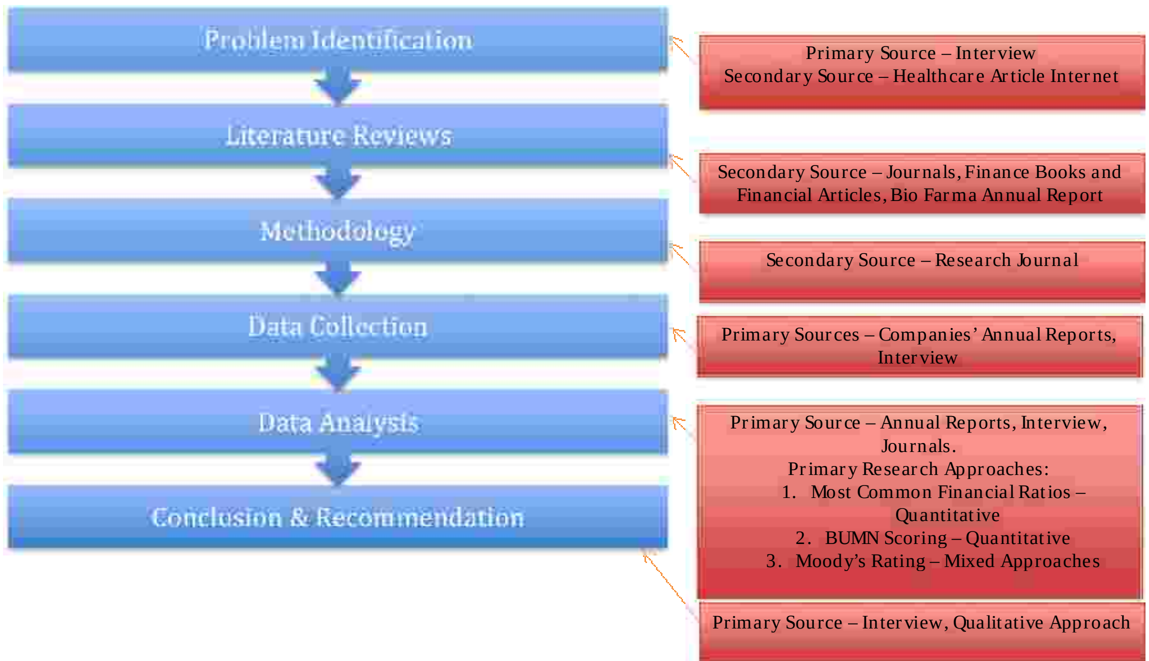

Figure 3. Research Design

Data Collection and Analysis

All necessary data are all obtained from company's annual report through manufacturer's official websites, from financial period in 2009 to 2013 and has been audited by CPA firms. The first analysis will be based on most common financial ratios according to Mautz et al, second will be BUMN Financial Scoring ratios and lastly is Moody's Global Pharmaceutical Rating.

In order achieve the desired outcome, PT Bio Farma's Financial statement will be compared by three segment categories within the industries; 1. Indonesia National Pharmaceutical Companies 2. Developing Nation Pharmaceutical Companies 3. Top Market Share Vaccine Manufacturer Companies. For Indonesia National Pharmaceutical Companies, the author pick the only two public State Owned Enterprise Pharmaceutical Companies which are Kimia Farma and Indo Farma and the biggest South East Asia Pharmaceutical Companies which is Kalbe Farma. For the second segment, the author take 3 public companies that become part of Developing Countries Vaccine Manufacturers Networks (DCVMN) which also provided annual report on its websites; Panacea Biotech from India, Zydus Cadila from India and Sinovac from China. The last segment is based on WHO 2013 vaccine report regarding to top 3 vaccine manufacture market share (serial): 1.Glaxosmithklein 2. Sanofi Pasteur 3. Pfizer.

Most Common Financial Ratios

Based on Table 3 it is clear in overall, from profitability, liquidity, efficiency and capital structures, it could be concluded that Bio Farma is performed above global pharmaceutical industries average.

The only ratios which put Bio Farma below global average is the efficiency indicator, Total Asset Turn Over (TATO), with 5% below average. Bio Farma's Dupont Analysis also 6% above average, which is 22% to 16%. Looking into national average, Bio Farma is outperformed another three national pharmaceutical companies in exception of TATO (77% to 149%) and Inventory Turnover (330% to 426%). Comparing to developing countries manufacturers, Bio Farma leads all of the financial ratios in the average. It is also the same trend when comparing to the leading pharmaceutical industries average with the exception of Dupont Analysis. Bio Farma has 6% below from 28% in terms of Return of Equity for the leading industries average.

Table 3 Most Common Financial Ratios Result

	BIO FARMA	KIMIA FARMA	INDO FARMA	KALBE FARMA	GSK	Pfizer	Sanofi Pasteur	Panacea Biotec	Sinovac	Zydus Cadila	National Average (exclude Bio Farma)	Leading Industries Average	Developing Countries Manufacturers Average	Global Pharma Industries Average
1. Net Profit Margin	24%	4%	1%	13%	16%	22%	16%	-10%	-5%	19%	6%	18%	1%	8%
2. Current Ratio	380%	248%	160%	346%	118%	208%	170%	142%	47%	159%	251%	165%	116%	178%
3. Quick Ratio	312%	157%	118%	232%	88%	179%	124%	55%	20%	108%	169%	130%	61%	120%
4. TATO	77%	185%	121%	141%	65%	31%	35%	48%	31%	83%	149%	44%	54%	82%
5. Inventory Turnover	330%	512%	456%	308%	198%	155%	176%	116%	183%	357%	426%	176%	219%	274%
6. Debt Ratio	17%	33%	52%	27%	81%	56%	41%	61%	48%	38%	37%	59%	49%	49%
7. Debt to Equity	21%	49%	113%	35%	446%	128%	69%	165%	91%	65%	66%	214%	107%	129%
8. Equity Multiplier	121%	149%	213%	129%	546%	228%	169%	265%	181%	165%	164%	314%	204%	227%
Dupont Analysis (ROE)	22%	12%	2%	23%	59%	16%	10%	-7%	5%	26%	12%	28%	8%	16%

Net Profit Margin

Throughout 5 year period, Bio Farma has constant increase of net profit margin each year, from 19% in 2009 to 31% in 2013, with average of 24%. This is happened to mainly to the low cost of good sold that has same trend with another high net profit margin companies. In contrast the low net profit margin companies has more higher operating cost to revenue. For example in average Bio Farma has COGS/Revenue ratio 40% whereas Indo Farma 71%.

Current Ratio

Bio Farma has twice global average current ratio and third times from developing manufacturers average (380%). In average, more than 50% of Bio Farma current asset are cash and cash equivalent. From 2009-2012 the current liabilites are not having any significant improvement before in the 2013 the company decided to increase the short term liabilities to 1.97 increase.

Quick Ratio

Bio Farma's quick ratio still outperformed others, almost three times global industries average and five times of developing manufacturers average (312%). The significant low developing average was happened mainly to Panacea that more than 60% of its current ratio are inventories and the same trend applied to Sinovac.

Total Asset Turnover (TATO)

In overall, Bio Farma's TATO was in lower position only in the national pharmaceutical average. All Indonesian manufacturer samples were above 100 percentage with the highest come from Kimia Farma (185%). One reason was due to higher Bio Farma capital expenditure in 5 year period comparing to the national companies (Comparing from 2009 to 2013: Bio Farma 54% increased, Kimia Farma 37%, Indo Farma 44%, and Kalbe Farma 43%).

Inventory Turnover
In global comparison, Bio Farma has near 60% above average inventory turnover ratio. However in the national scale average, the company ratio has almost 100% ratio below. As a benchmark, leading manufacturers could maintain the average turnover ratio below 200%.

Debt Ratio
Bio Farma has quite low debt ratio compared to the global ratio (17% to 49%). One company which has highest outliers was Glaxosmithklein with 81% debt ratio. In 2013, most of liabilities generated from long term borrowings (45%) and trade and other payables (20.83%). Glaxosmithklein has stable total liabilities in 5 year period in the average of 56 billion USD..

Debt to Equity
Bio Farma has the lowest debt to equity ratio with one to six ratio comparing to global average. There also has been decreased trend in the ratio with 27% in 2009 to 19% in 2013. The leading vaccine market manufacturer which is Glaxosmithklein has the highest debt to equity ratio, which is 446%. Generally, it also being increased throughout the period, reaching the highest in 2013 with 598% before decreasing to 490% one year after.

Equity Multiplier
Bio Farma has the lowest equity multiplier ratio with 121%, almost twice below the global average. The highest debt to equity ratio which is Glaxosmithklein have the similar highest equity multiplier with 546% or almost twice above from the average. This means that GSK majorly uses debt to finance its asset.

Dupont Analysis
Mautz et al use the three-step Dupont analysis as the summarization of the most common financial analysis, as the investor would highly rely to this ratio to measure the return gain of their capital investment. According to Rajasthan *et al* (2013), the three-step Dupont model measures Management's effectiveness at generating profits (net profit margin), managing assets (asset turnover) and finding an optimal amount of leverage (equity multiplier).

Bio Farma has higher Return on Equity on the Global average, with 6% above the average. Bio Farma only lower than leading industries average (28%). It has significance impact from Glaxosmithklein, with 58% ROE, far above from other leading manufacturer, Pfizer 16% and Sanofi Pasteur 10%. The high ROE result of GSK has much effect from the equity multiplier. As mentioned above, GSK rely much on debt to finance its asset that resulted in high equity multiplier. On the other hand Bio Farma has the lowest equity multiplier from all industries, which also give minimum ROE result. From the asset turnover / efficiency perspective, the 5% lower TATO than global average also become another influence. However when it comes to generating profits, Bio Farma leads all of the global pharmaceutical industries representatives. In overall, Bio Farma's ROE (22%) are under these manufacturers: GSK 59%, Zydus Cadilla 26% and Kalbe Farma 23%.

BUMN Financial Scoring

There are 8 ratios used in analyzing the financial performances using this tool, they are Return on Equity, Return on Investments, Cash Ratio, Current Ratio, Collection Periods, Inventory Turnover, Total Assets Turnover Ratio, and Equity Ratio. After the researcher doing all the analysis toward each ratio, the analysis result can be summed up to become a summary or big picture of the analyzed company. Generally, through analysis by using BUMN Financial Scoring, there will be three categories to summarized the analysis results which are healthy, less health, and less healthy. The end result will be decided based on the analysis toward all the ratios that need to be analyze in this financial scoring. The analysis is based on the outcome resut which come from Table 4.

Table 4 BUMN Financial Scoring Result

BUMN Scoring	BIO FARMA	KIMIA FARMA	INDO FARMA	KALBE FARMA	GSK	Pfizer	Sanofi Pasteur	Panacea Biotec	Sinovac	Zydus Cadila	Global Average	National Average	Leading Average	Developing Average
1. ROE	20.0	16.0	4.0	20.0	20.0	20.0	14	0	7	20	13.44	13.33	18.00	9.00
2. ROI	15.0	6.0	2.0	13.5	9.0	5.0	5	0	3	13.5	6.33	7.17	6.33	5.50
3. Cash Ratio	5.0	5.0	4.0	3.0	5.0	5.0	5	0	5	2	3.78	4.00	5.00	2.33
4. Current Ratio	5.0	5.0	5.0	5.0	4.0	5.0	5	5	0	5	4.33	5.00	4.67	3.33
5. Collection Periods (days)	5.0	5.0	5.0	5.0	4.5	4.5	4.5	5	3	4	4.50	5.00	4.50	4.00
6. Inventory Turnover (days)	5.0	5.0	5.0	4.5	5.0	5.0	4.5	3.5	4.5	5	4.67	4.83	4.83	4.33
7. TATO	3.5	5.0	5.0	5.0	3.0	2.0	2	2.5	2	3.5	3.33	5.00	2.33	2.67
8. Equity Ratio	7.0	8.0	9.0	7.5	6.0	9.0	8.5	10	8.5	8	8.28	8.17	7.83	8.83
Total Score	65.5	55.0	39.0	63.5	56.5	55.5	48.5	26	33	61	48.67	52.50	53.50	40.00
BUMN Scoring Rating	94%	79%	56%	91%	81%	79%	69%	37%	47%	87%	70%	75%	76%	57%
Alphabet Rating	AA	A	BBB	AA	AA	A	A	B	BB	AA				
Consider as	Healthy	Healthy	Less Healthy	Healthy	Healthy	Healthy	Healthy	Less Healthy	Less Healthy	Healthy				
Quantitative Result														
1. ROE	22.08%	12.00%	1.63%	22.93%	59.09%	15.59%	9.70%	-6.79%	4.98%	25.62%	16.08%	12%	28%	8%
2. ROI	18.24%	8.12%	0.94%	17.82%	10.70%	6.85%	5.74%	-2.21%	2.03%	16.19%	7.35%	9%	8%	5%
3. Cash Ratio	190.63%	48.74%	32.29%	15.49%	43.58%	103.20%	48.50%	6.41%	230.38%	14.57%	60.35%	32%	65%	84%
4. Current Ratio	380.32%	248.02%	159.99%	345.56%	117.70%	207.60%	169.54%	141.86%	47.12%	159.29%	177.41%	251%	165%	116%
5. Collection Periods (days)	50	42	59	13	72	80	79	41	157	99	71	38	77	99
6. Inventory Turnover (days)	45	51	58	60	52	53	64	146	81	57	69	56	56	95
7. TATO	77.36%	184.90%	121.17%	140.74%	65.36%	31.17%	34.88%	47.89%	30.65%	82.68%	82.16%	149%	44%	54%
8. Equity Ratio	82.61%	67.17%	47.68%	77.62%	18.91%	43.82%	59.12%	38.88%	55.52%	61.87%	52.29%	64%	41%	52%

Return on Equity

Compared to the Industry Average and National average of pharmaceutical industries, PT. Biofarma has a higher Return on Equity which are 6% and 10% higher consecutively. Meanwhile, compared to the Leading average and Developing Countries Average of pharmaceutical industries, PT. Biofarma has a smaller Return on Equity which are about 5% and 10% smaller sequentially. Although the ROE in BUMN Scoring has different formula than Dupont Analysis, they have same result generated.

Return on Investment

Compared to all the averages of Industry, National, Leading, and Developing Countries scale average of pharmaceutical companies, PT. Biofarma shows a higher amount compared to those averages. The Return on Investment amount of PT. Biofarma shows the amount of 18,24% which is about 11% higher than Industry scale average, 10% higher than National scale average, 9% higher than Leading scale average, and 7% higher than Developing Countries scale average. From this result, it means that PT. Biofarma shows a better efficiency of an investment rather than another companies in the same industry. Panacea Biotec has the negative ROI has it has negative average net profit in 5 year period.

Cash Ratio

Compared to Industry, National, Leading, and Developing Countries scale average, PT. Biofarma has a higher Cash Ratio which is 190,63%. This condition is far higher than those averages, which is on Industry average, the Cash Ratio is 60,35%; National average is 32,17%; Leading average is 30,45%; and Developing Countries average that is only 30,45%. The closer to the 100% of the cash ratio, the better the company liquidity is. Through cash ratio analysis, it shows that PT. Biofarma is very liquid since the cash ratio is beyond 100%. This means that PT. Biofarma can repay its short-term debt quickly and it benefits PT. Biofarma when PT. Biofarma is willing to extend the debt payment to the creditors.

Current Ratio

PT. Biofarma's Current Ratio is 380.32%, so much higher if it is compared to Industry average which is 177.41%; National average which is 251.19%; Leading average which is 207.75%; and Developing Countries average which is 223,62%. According to the theory, the healthy businesses are considered to have current ratio between 1.5 to 3. However, for PT. Biofarma the current ratio is around 3.8 which is considered too high. This result of current ratio may be a good indication that indicates PT.

Biofarma has enough resources to pay its debts or a poor indication that indicates PT. Biofarma may not be efficiently using its current assets or its short-term financing facilities that leads to the problems in working capital management.

Collection Periods

According to the analysis result, PT. Biofarma Collection Periods ratio is 50 days. Therefore, PT. Biofarma has more efficiency in collecting trade debts compared to Industry scale average and Developing Countries scale average that have Collection Periods of 71 days and 55 days consecutively. Whereas, if PT. Biofarma is compared to the National scale average and Leading scale average, PT. Biofarma is considered to be less efficient since the National average only needs 38 days and Leading average needs 48 days in collecting the trade debts.

Inventory Turnover Period

According to the analysis result, it shows that PT. Biofarma has the smallest number of days in Inventory Turnover Period ratio which is only 45 days compared to another averages. Industry average needs 69 days to sell the inventory; National average needs 56 days; Leading average needs 57 days; and Developing Countries average needs 55 days. This shows that PT. Biofarma's inventory is liquid and inventory in PT. Biofarma is considered fast moving rather than another.

Total Asset Turnover

According to the analysis result, Total Asset Turnover of PT. Biofarma is 77,36%. The amount of PT. Biofarma's Total Asset Turnover is smallest among another averages from Industry, National, Leading, and Developing Countries scale averages. Industry scale average's Total Asset Turnover is 82,16%; National scale average is 148,94%; Leading scale average is 109,09%; and Developing Countries scale average is 79,09%. This could be noted as all sample national manufacturers have above 100% TATO.
Equity Ratio

Equity Ratio

Based on the Equity Ratio analysis in this study, PT. Biofarma's Equity Ratio is 82,61% which is the highest rate among Industry average which is only 52,29%; National average which is 64,16%; Leading average which is 48,07%; and Developing Countries average which is 46,79%. The Equity Ratio rate of 82,61% shows that PT. Biofarma financed its asset majorly from equity rather than debt, which gives the company less risk.

Moody's Global Pharmaceutical Rating

There are 5 categories and 9 ratings in total in Moody's Rating and those are mixed quantitative and qualitative approach. Quantitative approach in Moody's rating are consist of Scale and Leverage/Cash Coverage while the qualitative are business profile, patents and pipeline and Financial Policy. Although Moody's set the rating description for each qualitative approach, still what considered as good and substandard will be differ from one researcher to another. The red and green mark which shows in Table 5, indicates the outlier result from each companies Moody's rating, that considered as 2 point above the company's rating. The author is not using the stable, positive or negative marks like in the original Moody's rating as it is not clearly described in the guideline, to prevent more subjective valuation.

Table 5 Moody's Rating Result

Moody's Grid Factors	Weight	Bio Farma		Kimia Farma		Indo Farma		Kalbe Farma		GSK		Pfizer		Sanofi Pasteur		Panacea Biotec		Sinovac		Zydus Cadilla	
1. Revenue Average 5 year (USD Billion)	25%	Ca	5.00	Ca	4.50	Ca	5.00	B	3.75	Aa	0.75	Aa	0.75	Aa	0.75	Ca	5.00	Ca	5.00	Caa	4.5
2. Business Profile	25%																				
a. Product Therapeutic Diversity	15%	Ba	1.80	Aa	0.45	Aa	0.45	Aa	0.45	Aa	0.45	Aa	0.45	Aa	0.45	A	0.9	Caa	2.7	Aa	0.45
b. Geographic Diversity	15%	Aaa	0.15	Caa	2.7	Caa	2.7	Ba	1.8	Aaa	0.15	Aaa	0.15	Aaa	0.15	A	0.9	Ba	1.8	Aa	0.45
3. Patents and Pipeline	16%																				
a. Patent Exposures	8%	Aa	0.24	A	0.48	A	0.48	Aa	0.24	A	0.48	Baa	0.72	A	0.48	Ba	0.96	Ba	0.96	A	0.48
b. Pipeline Quality	8%	Ba	0.48	Baa	0.72	B	1.2	A	0.48	Baa	0.72	Baa	0.72	Baa	0.72	Baa	0.72	Ba	0.96	Baa	0.72
4. Leverage and Cash Coverage (Average 5 year)	24%																				
a. Debt/EBITDA	9%	Aaa	0.09	Aa	0.27	Ca	1.8	Aa	0.27	Baa	0.81	B	1.35	Ba	1.08	Ca	1.8	A	0.54	Ba	1.08
b. CFO/Debt	9%	Aaa	0.09	Baa	0.81	Ca	1.8	Aa	0.27	Ba	1.08	Ba	1.08	Ba	1.08	B	1.35	Caa	1.62	A	0.54
c. Pharmaceutical Cash Coverage of Debt	6%	Aaa	0.06	A	0.36	Baa	0.54	B	0.9	Ba	0.72	Baa	0.54	Ba	0.72	Ca	1.2	Aaa	0.06	B	0.9
5. Financial Policy	10%	Aaa	0.01	A	0.6	Ba	1.2	Aa	0.3	A	0.06	A	0.06	A	0.06	Caa	1.8	Ba	1.2	Aa	0.3
Moody's Rating		Baa1	7.92	Ba1	10.89	B2	15.17	Baa1	8.46	A1	5.22	A2	5.82	A1	5.49	B2	14.63	B2	14.84	Baa2	9.42

Scale

Based on Table 4.3, the leading manufacturers are all have Aa rating. Pfizer is the highest one with the 5 year average of 59.16 billion USD, followed by GSK 43.90 and Sanofi Pasteur 43.51. In the national market, Kalbe Farma is the only one company which has more than 1 billion USD 5 year average revenue (1.21) while the rest are below 0.5 billion USD (Kimia Farma 0.36, Bio Farma 0.14 and Indo Farma 0.12). In another developing countries manufacturer, all of them are in below of 1 billion, Cydus Cadilla 0.65, Panacea Biotec 0.16 and Sinovac 0.07. Moody's set the scale rating into 25%, which makes it as the highest single factor of the rating.

Business Profile

Almost all sample companies have very well diversified products across theurapetics, ratings from A to Aa. For instance Kimia Farma has more than 200 brand products consist of either generic and branded, while also offer less traditional product types such as inhalers, injectables and ointments. Bio Farma and Sinofac has the lowest rating (Bio Farma with Ba, Sinofac with Caa), as those two companies still selling only vaccines. The differences between them are Bio Farma has more products range, 17 product with well distributed revenue rather than Sinovac that relies more than 70% of its revenues to 3 vaccine products. All of the leadings manufacturers get the highest rating which is Aaa, as their products are well distributed throughout countries in every continents. Bio Farma is the only one developing countries manufacturer which receives Aaa rating as most of the revenues are generated from the export, more than 70% and sold to 127 countries. The highest scale national pharmaceutical, Kimia Farma has expanded to ASEAN countries, but still the revenues generated from Indonesia with more than 70%. Kimia Farma generated its revenues from export 2,5% while Indo Farma 2%.

Patents and Pipeline

Bio Farma and Kalbe Farma is the highest rating for this category, as vaccine has no generic products, however have high barriers to entry due to high requirements of product from WHO prequalification. As the one of the 30 WHO prequalified vaccine manufacturer in the world and was the first in ASEAN, make low challenge for the company in the near future. Kalbe Farma also get the highest rating as the company continually to become the first mover in the generic medicines in Indonesia. Kalbe Farma also cooperate with some branded companies for the patent cooperation. The two Indian companies which are Zydus Cadilla and Panacea Biotec have different ratings. Zydus Cadilla, A rating, has 1075 cumulative patents with various across theurapetics, while Panacea Biotec, Ba rating, has only 34 patents worldwide with limited categories. Sinovac has the same rating as Panacea Biotec due to the very tight patents in China and high of infringement (Sinovac

Annual Report, 2013). Majorly, the global industries have either Ba or Baa ratings, with the exception of Kalbe Farma (A) and Indo Farma (B). Indo Farma only launched a few product, if any, every year while there was a recall for Indo Farma products in 2012, which indicates low pipeline quality. Kimia Farma, on the other hand, succesfully launched many products every year in different categories and have great impact to the revenues, reflecting in continously revenue growth in 5 year period.

Leverage and Cash Coverage
Debt/EBITDA. Indicator of debt serviceability. Bio Farma get the highest rating, with 0.71 ratio. Bio Farma total liabilities increased in 2010, then decreased until 2012 before rising to 35 million USD in 2013. However the 2013 ratios declining, 0.56, due to the high liabilities results in 2013, 83% increased from 2012, from 24 million USD to 36 million in 2013. The lowest one are Indo Farma and Panacea Biotec, with Ca ranking. Cash flow from Operations / Debt. Provides an indicator for a company's financial flexibility to repay debt and de-lever. Bio Farma is the highest one, Aaa rating, with 0.09 while the global industry average was 1.07. Bio Farma CFO reached its peak in 2013, majorly from expansion to the private sector market and dollar to rupiah strengthen currency exchange as 70% of Bio Farma products are exported. However the higher debt resulted in declining ratio to 144% while in 2012 was 158%, with the 5 year average 117%.

Pharmaceutical Cash Coverage of Debt. Maintaining high cash of coverage of debt helps buffer many of the operating risks of the industry. Bio Farma and Sinovac has the highest cash coverage with 164% and 117%. Although has low CFO/Debt, Sinovac's cash, cashequivalent and long term fixed investment is quite high, exceed its own debt. Sinovac reached its cash coverage in 2010 resulted from paying more than half of its debt. decreased 54%, from 145 to 67 million USD, before continually increased its debt to 97.05 million USD in 2013. Bio Farma reached its 2 cash coverage ratio from 2012, 2.09 with continue in 2 range in 2013, 2.04. This happened to the high increased of the cash equivalent of Bio Farma, 2013 32% and 2014 78% increased. The cash coverage in 2013 got lower due to the 83% higher liability from 2012.

Financial Policy
In average, the industries are in the A ratings, with Bio Farma in the highest rating Aaa, and Panacea in the lowest with Caa. Bio Farma was given the Aaa rating due to the very good improving financial metrics throughout the year and strong management governance. Panacea got its lowest rating due to the unstable and below average metrics, delayed payments in the last year, using the short term fundings and poor shareholders returns. All leading manufacture received A rating all of them are much in the stable and above average performance. Sinovac received Ba due to the unstable metrics and unstable funding policy. Indo Farma received Ba due to the unstable metrics especially loss in 2013. While others in the range of A or Aa due to the above average metrics, stable performance and stable financial and funding policy.

Interview
Author did an interview with Marketing Director of Bio Farma, Mr. Mahendra Suhardono in 24 December 2014 to ask questions about the methodology quantitative results especially the outlier one,. Author asked regarding to the considered too high cash and current ratio of PT Bio Farma, low TATO and non listed Bio Farma as public company. Mr. Mahendra Suhardono said that in state owned enterprises especially the full ownership one, there are some rules and regulations made by government which is stated in national laws (legal reason) according to investment or buying assets. It gives significant impact for the management to do further investment for the company due to the long process time of tender and purchasing. Those cash actually has been projected as investment for new product facility and further research and development, but the realization was actually far from the target which was 20-30%.

Regarding to the unlisted Bio Farma as public company like Indo Farma and Kimia Farma, He said that Bio Farma's core product which is vaccine is considered as strategic industries which need full ownership by the Indonesia government for fulfilling the main objective for the major Indonesian people's health. Because of the Indonesian government full ownership, Bio Farma could gain international cooperation from many international institutions such as technology partnership and others. In the future, the management will form subsidiaries that its purposes solely seeking profit for the company and it would be possible to gain its funding through Initial Public Offering. As for the low TATO, Bio Farma has a few effort to invest in new asset to generate more revenue in the future, but the laws gave prohibition to do such quick action. Because of that, many investment realization was delayed and could not produced more effective revenue maker. Another thing was the tight WHO vaccine regulation system which has long process to produce new vaccine product for each company.

Conclusion and Recommendation

Conclusion

According to the analysis conducted in this study, there are several conclusions summarized the research's result:

1. Based on the analysis using Most Common Financial Ratios, in general although by the scale/revenue is categorized on the below, Bio Farma's financial ratios is all above the global average. The only underperformed average indicator is TATO (Total Asset Turnover). PT. Bio Farma shows the lack of asset efficiency in utilizing assets for generating revenue especially in the national sector, although it is in the range of leading industries and other developing countries average. Another highlight is current and quick ratio, although it is considered as above average, Bio Farma has the potential to invest the current asset to real asset or financial investment to generate more revenue in the future. Furthermore, Equity Multiplier is one indicator in measuring Return on Equity (ROE), which PT Bio Farma has a lack ratio of. Since debt utilization is low, thus the risk will be lower also. Despite the fact Bio Farma has much lower ROE , still is consider better than Glaxosmithkline which shows the high number of Return on Equity due to high debt used. The higher risk will be arise since Glaxosmithkline used too much debt capitalization.
2. According to BUMN Financial Scoring, Total Asset Turnover and Equity Ratio of PT. Biofarma is considered not optimum yet. From the analysis result, Cash Ratio shows too high result, indicates that PT. Biofarma is not optimally utilizing asset to generate revenue. Equity Ratio of Bio Farma is not really optimum according to BUMN Financial scoring. However it would be depend on two side perspective which lowest debt give best company stability or more debt give more leverage to generate revenue in the future and for surviving the competition.
3. According to Moody's Biofarma is belong to the middle range, below the leading pharmaceutical companies, because the revenue of Biofarma is considered low which is 0.2 billion. Pharmaceutical companies with high revenue could control the suppliers, market price, and generate Research and Development cost which is vital for pharmaceutical long term viability. Based on Moody's scoring, according to quantitative measurement, financial ratios and financial policies of PT. Biofarma is considered very good. Meanwhile according to qualitative measurement, product diversity of PT. Biofarma is still considered low although it is not being the lowest. The reason behind this condition is because PT. Biofarma only sells vaccine and antisera. This result in the high risk, if such a big incident happens in regards to vaccine news, for instance the incident experienced by Sinovac in China that was assumed to be killed three people for its vaccine that resulted in the decreasing revenue up to half amount of previous. PT. Biofarma has prevented this condition by expanding its export products to about 140 countries worldwide, which have been minimized the geographic risk. Nowadays, vaccine is still being trusted. However, it will be high influence for Bio Farma if such big incident experienced by Sinovac happened.

Recommendation

For Entity PT. Bio Farma:
(This recommendation has been approved in presentation conducted by author to Bio Farma management in January 15th 2015).

1. PT. Bio Farma has to enhance the efficiency and effective of its asset especially its current asset by investing through financial asset especially low risk investment one such as government bond or real asset such as machinery purchase to generate more revenue. The current regulation made by Indonesia government give responsibility of loss of investment to Board of Directors which prevent such high risk investment to be occurred.
2. It is recommended for Bio Farma to launch new product beside vaccine and antisera to increase more revenue and minimize the product risk. Although Bio Farma has vast vaccine products, still those all are considered as vaccine which all will be influenced if such negative news regarding to vaccination happened. The current reputable and diverse geographic name of Bio Farma will be beneficial and become huge potential to expand its product. However, the obstacle would be governance with another BUMN companies such as Kimia Farma and Indo Farma and the Indonesian government itself as each state owned enterprise company have its own distinguished products and function. The possible way is to commence new pharmaceutical products which Kimia Farma or Indo Farma has not launched yet.
3. Adding new liabilities would be possible as the current indicator considered still safe, below 20%. Adding leverage will be leap impact for the company to invest it in real asset or adding it to Research and Development cost to make it faster or develop new product as it is considered vital in pharmaceutical industries. According to BUMN Financial Scoring, the optimum ratio is 70-80% of debt.
4. As the whole state owned enterprise, it is not an obligation for Bio Farma to publish its own annual report to the public. Such future strategies, detailed governance and detailed financial statement which Bio Farma provided in its annual report in the company's website are perceived by author are too open and even not all listing companies which author read are provided that information. It is recommended for Bio Farma stated only the general information to prevent the company's strategic information exposed especially for market competition sake.
5. Invest the free current asset or any unproductive liabilities for the new Bio Farma subsidiaries capital
6. Utilize the unused current asset especially the cash and cash equivalent as further marketing tools to expand Bio Farma's product either private sector in the Indonesia or other countries to generate more revenue in the future or for human resources investment.
7. Increased efficiency by selling other global pharmaceutical products to increase revenue with existing assets to increase total asset turnover.

For Investors

1. Since PT. Biofarma is considered very liquid and could be concluded as one of the best performing pharmaceutical companies in financial assessment, if such Initial Public Offering happened, investors are really recommended to invest in this entity.

For Indonesia Government

1. Reform new laws or regulations for state owned companies to give more flexibility to the management especially the tender and purchasing option to fulfill the company strategic purposes.
2. BUMN Financial Scoring did not state any upper limit for each indicator, as there are some indicators which too high are considered also not well performed such as current and cash ratio.

3. Change the existing ROI formula in BUMN Scoring to more objective one as the existing formula did not reflect the actual return for investment itself, give the high score to underperformed companies. Change into Net Profit / Total Asset for example.

For Next Researches

1. The next research is expected to add more samples to give more factual industries average especially global pharmaceutical and vaccine private companies like Serum Institute of India which considered as one of major vaccine manufacture but not published its own annual report which author could not obtain it.
2. Qualitative method such as interview to the management for Moody's rating will be beneficial as using company's annual report will be not enough as many of them are not stated the information needed clearly.
3. The next research Return on Equity ratio is expected to use another formula that does not use debt or the debt has low implication to Return on Equity to give more valid perspective of return for the shareholders.
4. Utilized another indicator like management future strategies, corporate governance or another financial ratios indicators that could give more objectivity for pharmaceutical industries.
5. Further research need to validate each variable/ratio indicator that the used variable will be appropriate to be used in pharmaceutical industries and has been proven to reflect the factual condition . In addition give the optimum value for each variable which considered as good or negative like BUMN Scoring or Moody's rating that based on the factual research.

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