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The Effectiveness of Financial Ratio to Mitigate Information Complexity of Financial Statement for Performance Evaluation

[1]Rusmawan Wahyu Anggoro, [2]Lita Kusumasari, [3]Miswanto

[1,2,3]STIE YKPN School of Business, Yogyakarta, Indonesia
[1]rusmawan.a@gmail.com

Abstract

Rational and efficient asset allocation and investment decisions in the capital market require relevant and reliable information. One source of information in such decision making in capital market is financial statements. Financial statements, however, provide voluminous and complex information which in turn diminishing the quality of the decision. Based on current studies investors are not fully rational decision maker due to the presence of bounded rationality. To reduce the complexity of information and make a rational decision, investor and financial analyst use financial ratios to evaluate company's financial performance. This research was aimed to observe whether the use of financial ratio to evaluate company's financial performance can mitigate the investor irrationality in asset allocation and financial decision making. The research sample was the financial statements of company listed on Indonesian Stock Exchange (IDX) during 2015 to 2017. Data were downloaded from Indonesian Capital Market web sites. Correlation analysis used to analyze the effectiveness of 11 financial ratios data. The result of the study indicates the ability of financial ratio describing company's financial performance. Pearson's correlation analysis also indicates a significant and high correlation within groups among liquidity ratios, solvency ratios, and profitability ratios. This result shows that some ratios can be simplified and reduced to a simplest and efficient analysis tools.

Keywords:*Financial analysis, financial ratio, financial performance evaluation, financial decision making*

INTRODUCTION

Entering an era of economic disruptive, investors and creditors is faced with many investment opportunities.Varied investment options are available, the customers are very picky, changes occur very quickly, and instant products are in great demand. To take the advantage of many investment opportunities, asset allocation and investment decisions,effective and efficient decisions are needed. This requires the availability of reliable and relevant information. It is important for companies to provide a variety of services that can be oriented towards customer needs, including information customers.

One source of information in such decision making is financial statements. Financial statements as one of the sources of information provided by the company actually increases in complexity. This change is contrary to the information needs that are ready to be used in decision making. Various technical terms are used and the number of required disclosure items makes information overload more. Too much information can have an impact on the declining quality of decisions, many assumptions should be used and many guessing involved because humans have limited rationality. The use of assumptions and guesses increases decision inaccuracies and increases uncertainty.

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One of the efforts made by the capital market supervisors to reduce the complexity of financial reporting is to require companies that go public to use extensible business reporting languages (XBRL).One of the efforts made by the capital market commissions to reduce the complexity of financial reporting is to require public companies use extensible business reporting languages (XBRL) as an addition to conventional format. However, the use of XBRL only makes it easier to compile financial reports for comparison not to fully ease the analysis. In other words, the use of XBRL has not been able to simplify information so that is easy to interpret in decisions making.Therefore, academicians and financial analysts continuous their effort in formulate a more efficient and effective analytical tools.

For many decades, the users of financial statements use trend analysis, horizontal comparison, vertical analysis and ratio analysis for performance evaluation and predictions. Among those, financial ratios getting more popularity due to its flexibility(Mankin & Jewell, 2014). Therefore, up to this point financial analyst still using financial ratio as a tool for performance evaluation. Despite its popularity, financial ratios has some limitations to be considered. One of its limitations is the inconsistency of terminology used in their formula and in some cases interrelationships or duplication between variables used in one group occurs. The increasing number of developments can undermine its flexibility, Gencia(2015)found a number of ratios being calculated with a different mathematical formula. The aim of this research was to reduce the number of ratio used and still maintain its flexibility *vis a vis* its popularity.

LITERATUREREVIEW

Financial Statements

Financial statements as a means of communicating company past performance and future expectations to a wide range of interested parties (IASB, 2018). Interested parties used financial statements to make a varied of economic decisions. However, financial statements themselves for most users are difficult to understand so they areuseless. Understanding financial statements requires knowledge in accounting and finance (Anggoro R. W., 2004).As a result, the understandability of information contained in a financial statement decreased in the cost of decision usefulness objective, unless there are simple appropriate interpretation techniques. Therefore, financial statements are usually subject to further analysis by financial analyst.

Libby (1981) offered three options to improve decision making by: 1) the presentation of financial statement analysis is changed, 2) decision makers are given adequate education in finance and accounting, and 3) the way decision-making is changed with a model.Following Libby's research findings, practitioners and academicians suggested the use of XBRL to make it easier for users to use data and information in financial statements in decision making. It is well recognized the use of XBRL have some value added to the financial reporting practice. Some researchers found supporting evidence for that value added. Chen's(2012),for example, examined and found the implementation of XBRL do increased accountability and transparency in business and financial information. The results of his research indicate that XBRL makes information transparency and efficiency in collecting and distributing priority information. While Yoon, Zo and Ciganek(2011) found that there was a significant and negative relationship between XBRL adoption and information asymmetry, which implies that XBRL adoption can lead to a reduction in information asymmetry in the stock market.

Over the past few decades, financial analysts have developed specific techniques including fundamental analysis,DuPont analysis, horizontal and vertical analysis and the use of financial ratios for evaluating risks, performance, financial health, and future prospects of an organization (White, Sondhi, & Fried, 1998). Next part of this paper will discuss each of the techniques mention above.

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Financial Statement Analysis

Through financial statements, you can see various activities carried out by the company in the past. However, to be able to interpret the contents of the financial statements properly, further analysis is needed. It is hoped that this process will not cost a lot or can be done as efficiently as possible.

Financial statement analysis is the application of analytical tools and techniques for general purpose financial statements and related data to produce estimates and conclusions that are useful in business analysis(Subramanyam & Wild, 2009). The use of such techniques reduces dependence on guesses, intuition, and uncertaintyin decision making. Financial statements analysis carried with full of consideration using financial statement data or information in order to help evaluate the financial position and results of operations of the company in the present and the past, with the main goal to determine the most probable estimates and predictions regarding the current and to predict future condition and performance.

Financial statements analysis used financial statements quantitative and qualitative information in order to evaluate company performance to make a better economic decisions(Wikipedia, 2018). To facilitate the analysis, various analytical techniques have been developed including: vertical, horizontal and financial ratios. Financial ratio is one technique that is widely used because of its flexibility to be used in a variety of analysis needs(Mankin & Jewell, 2014)(Lan, 2012).

Common-size analysis is an analysis technique carried out by making comparisons between certain elements (financial statements) as components of other elements in the same financial statements. Common size analysis is compiled by calculating each account in the income statement and balance sheet into a proportion of total sales (for profit and loss statements) or from total assets (for balance sheets).

Financial Ratio

Financial ratio is an attempt to see the relationships between components in financial statements using mathematical formulas. Financial ratios as a tool also facilitate analysis of company performance, strengths and weaknesses, and as financial indicators for company risk.Financial ratio helps to connect information between financial statements of companies within and between industries and sectors. Ratio analysis is one of the most widely used techniques(Lan, 2012). As a prediction tools, Altman (1968) uses financial ratios to predict corporate bankruptcy, other researcher use to predict companies future earnings.

Financial ratio analysis basically consists of two comparison methods. The first method compares the company's financial ratios with other companies in the same industry, or with the average ratio in the industry. The second method compares the ratios of at a given time with the ratios of the previous times of the same company (Miswanto, Kusumasari, & Anggoro, 2018).

Financial ratios are very powerful tools to perform some quick analysis of financial statements. Early developments of financial ratios begin in the late of 19th century with the first current ratio (Mankin & Jewell, 2014). Since then, the use and development of financial ratios has continued, followed by DuPont and many other ratios such as those currently use. The DuPont model is a financial ratio based on the return on equity ratioto analyze a company’s ability to increase its return on equity, breaks down the return on equity ratio to explain how companies can increase their return for investors. To take advantage of financial ratios we need standards for comparison. One approach is to compare company ratios with industry patterns or business lines in which the company is predominantly operating.

In the analysis of financial statements, the number of ratios increasing dramatically do to its flexibility according to the needs of the analysts. There is a difference in the ratio between analysts and this has the potentiallycause user confusion. Lack of consensus and the use various names and different ratio formulas for the same meaning can cause redundancies.The forms

also complex, their complexity is influenced by the complexity of financial statements. It should be noted that the complexity of financial statements increases, not only because the financial and accounting principles used are increasingly complex and numerous, but also the numbers presented are fixed numbers.

Financial ratio is divided into univariate and multivariate analysis (Kusumasari, Anggoro, & Miswanto, 2018). Univariate ratio analysis only employing one variant to describe the condition and multivariate using more than one variant to describe company condition.There are four categories of financial ratios in multivariate analysis, namely: liquidity ratio, solvency, activity, and profitability ratio. This research use all that categories to evaluate company performance. Liquidity is the level of a company's ability to settle its obligations immediately (Miswanto, 2012). This ratio can be divided further into current ratio, quick ratio, cash ratio and inventory to net working capital (Horne & Wachowicz, 2009). Increasing figures of these ratios indicates the company's liquidity increases.The current ratio is a reflection of the company's ability to meet short-term obligations with its current assets.

Solvency measures the extent to which a company's assets are financed by debt. Solvency ratio (leverage) consists of the debt to assets ratio, debt to equity ratio, and long-term debt to equity ratio (Ross, 2016). If the numbers of these ratios of a company increases from the previous year, the company's debt also increase from the previous year. Company debt increases, the indications of company performance are not good. The debt to equity ratio (DER) shows the percentage of funds provided by shareholders to lenders.

Activity ratio measure the efficiency use of funds owned by the company(Horne & Wachowicz, 2009). Management and investors use this activity ratio to figure out the results of operations that have been carried out using assets owned by the company. The activity ratio is generally comprise of cash turnover ratio, accounts receivable turnover, inventory turnover, and total asset turnover. In general, activity ratios consist of cash turnover, accounts receivable turnover, inventory turnover, and total asset turnover (Titman, Keown, & Martin, 2014). Increasing ratios of a company indicate a more efficient company used its asset.

Profitability ratios measures the profits have been achieved from various policies and decisions taken by the company(Brealey, Myers, & and Marcus, 2012). The company's profitability ratio also function as a measure of the company ability to generate profits with its capital. Creditors can estimate and evaluate the development of companies that will be given credit in the future. The profitability ratio consists of earnings per share (EPS), net profit margin (NPM), return on investment (ROI) and return on equity (ROE). If the company's profitability increases, indicatesa better company's performance achieved. Table 2.1 show some financial ratios formula commonly used in each categoriesto do financial analysis.

Table 2.1 Financial Ratios

No	Types	Formulas
1	Current Ratio	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$
2	Quick Ratio	$\frac{\text{Current Assets} - \text{Inventory}}{\text{Current Liabilities}}$
3	Debt to Assets Ratio	$\frac{\text{Total Debt}}{\text{Total Assets}}$
4	Debt to Equity Ratio	$\frac{\text{Total Debt}}{\text{Total Equity}}$
5	Receivables Turnover	$\frac{\text{Net Credit Sales}}{\text{Average Receivables}}$

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6	Total Assets Turnover	$\frac{\text{Net Sales}}{\text{Total Assets}}$
7	Working Capital Turnover	$\frac{\text{Net Sales}}{\text{Current Assets} - \text{Current Liabilities}}$
8	Net Profit Margin	$\frac{\text{Net Income (EAT)}}{\text{Net Sales}}$
9	Return on Total Assets	$\frac{\text{Net Income (EAT)}}{\text{Average Total Assets}}$
10	Return on Investments	$\frac{\text{Net Income} + [\text{interest}\ (1 - \text{Tax})]}{\text{Average Investments}}$
11	Return on Equity	$\frac{\text{Net Income}}{\text{Average Equity}}$

METHODOLOGY/MATERIALS

Sample and Population

The research sample was the financial statements of company listed on Indonesian Stock Exchange (IDX) during 2015 to 2017. Purposive sampling used to select sample from listed company which publish their financial statements from 2015 through 2017. To increase and ease the comparison, this study use food and beverages and cigarette industry. Data were downloaded from Indonesian Capital Market web sites (www.idx.co.id).

Common financial ratios for each sample company is calculated and tabulated as shown in Tables below. Table 3.1 shows the liquidity measure, consist of current ratio and quick ratio of sample companies for three years.

Table 3.1. Liquidity Ratio 2015-2017

Company	Current Ratio			Quick Ratio		
	2015	2016	2017	2015	2016	2017
PT BentoelInternasionalInvestama	2.20	2.40	1.92	0.47	0.58	0.68
PT Gudang Garam	1.77	1.94	1.94	0.22	0.20	0.26
PT Hanjaya Mandala Sampoerna	6.57	5.23	5.27	2.37	2.21	2.49
PT Wismilak Inti Makmur	2.89	3.40	5.36	0.66	0.74	1.20
PT Delta Djakarta	6.42	7.60	8.64	5.13	6.27	7.36
PT Indofood CBP Sukses Makmur	2.33	2.41	2.43	1.90	1.93	1.95
PT Indofood Sukses Makmur	1.71	1.51	1.50	1.40	1.07	1.05
PT Mayora	2.37	2.25	2.39	1.81	1.70	1.98
PT Multi Bintang	0.58	0.68	0.83	0.48	0.58	0.69
PT Nippon IndosariCorpindo	2.05	2.96	2.26	1.94	2.80	2.21
PT Prashida Aneka Niaga	1.21	1.06	1.16	0.34	0.51	0.45
PT SekarBumi	1.15	1.11	1.64	0.78	0.60	1.06
PT SekarLaut	1.19	1.32	1.26	0.69	0.78	0.69
PT Tri Banyan Tirta	1.58	0.75	1.07	1.25	0.40	0.37
PT Wilmar Cahaya Indonesia	1.53	2.19	2.22	1.01	1.09	1.29

The solvability ratio which measure the ability of a company to settle its long term debt can be divided into debt to asset ratio (DAR) and debt to equity ratio (DER). The result of DAR and

DER calculation shown in Table 3.2 below. The smaller of DAR and DER represent the better financial condition of a company.

Table 3.2. Solvability Ratio 2015-2017

Company	Debt to Assets Ratio			Debt to Equity Ratio		
	2015	2016	2017	2015	2016	2017
PT BentoelInternasionalInvestama	1.25	0.30	0.37	0.52	0.43	1.58
PT Gudang Garam	0.40	0.37	0.37	0.67	0.59	0.58
PT Hanjaya Mandala Sampoerna	0.16	0.20	0.21	0.19	0.24	0.26
PT Wismilak Inti Makmur	0.30	0.27	0.20	0.42	0.37	0.25
PT Delta Djakarta	0.18	0.15	0.15	0.22	0.18	0.17
PT Indofood CBP Sukses Makmur	0.38	0.36	0.4	0.62	0.56	0.56
PT Indofood Sukses Makmur	1.16	0.47	0.47	1.13	0.87	0.88
PT Mayora	0.54	0.52	0.51	1.18	1.06	1.03
PT Multi Bintang	0.64	0.64	0.58	1.74	1.77	1.36
PT Nippon IndosariCorpindo	0.56	0.51	0.38	1.28	1.02	0.62
PT Prashida Aneka Niaga	0.48	0.57	0.57	0.91	1.33	1.31
PT SekarBumi	0.55	0.63	0.37	1.22	1.72	0.59
PT SekarLaut	0.60	0.48	0.52	1.48	0.92	1.07
PT Tri Banyan Tirta	0.57	0.59	0.62	1.33	1.42	1.65
PT Wilmar Cahaya Indonesia	0.57	0.38	0.35	1.32	0.61	0.54

Activity ratio measure the efficiency the use of fund by the company management. This ratio consist of receivable turnover which intended to evaluate the efficiency companies effort issue credit to its customers and collect the payments in a timely manner. A high turnover ratio indicates a combination of a conservative and an aggressive collections and vice versa. Asset turnover measures the efficiency of a company's utilizing its assets to generate revenue or sales. Generally, a higher ratio is favored because there is an implication that the company effort in generating sales or revenues more efficient. Working capital turnover ratio measures how efficient a company utilizing its working capital to generate sales. A high turnover ratio indicates that management is more efficient in using its short-term assets and liabilities to generate sales. The result of this group of ratio shown on Table 3.3.

Table 3.3. Activity Ratio 2015-2017

Company	Receivable Turnover			Assets Turnover			Working Capital Turnover		
	2015	2016	2017	2015	2016	2017	2015	2016	2017
PT BentoelInternasionalInvestama	23.02	19.35	12.23	1.33	1.43	1.44	4.05	3.78	4.69
PT Gudang Garam	45.39	41.70	38.58	1.11	1.21	1.25	3.80	3.76	3.94
PT Hanjaya Mandala Sampoerna	30.58	19.64	22.58	2.34	2.25	2.30	3.52	3.51	3.58
PT Wismilak Inti Makmur	26.61	26.37	24.27	1.37	1.25	1.20	2.84	2.40	2.11
PT Delta Djakarta	3.50	4.28	4.59	0.67	0.65	0.58	0.92	0.85	0.73
PT Indofood CBP Sukses Makmur	10.10	9.50	8.88	1.20	1.19	1.13	3.99	3.79	3.65
PT Indofood Sukses Makmur	13.52	12.93	11.64	1.53	0.81	0.80	3.62	6.83	6.45
PT Mayora	4.59	4.72	3.97	1.31	1.42	1.40	3.44	3.78	3.36

PT Multi Bintang	9.11	13.07	7.87	1.28	1.43	1.35	(5.34)	(7.68)	(14.92)
PT Nippon IndosariCorpindo	9.37	10.14	8.01	0.80	0.86	0.55	5.21	4.01	1.93
PT Prashida Aneka Niaga	13.72	16.22	17.07	1.48	1.43	2.03	18.43	47.31	26.36
PT SekarBumi	13.14	11.82	9.47	1.78	1.50	1.13	31.46	29.85	5.67
PT SekarLaut	8.58	8.18	7.78	1.98	1.47	1.44	24.33	15.62	16.43
PT Tri Banyan Tirta	2.17	2.63	0.92	0.26	0.25	0.24	1.47	(3.63)	19.48
PT Wilmar Cahaya Indonesia	12.09	15.14	14.88	2.35	2.89	3.06	7.98	6.86	7.83

The capability of a company in generating profit generally measured by profitability ratio. The profitability ratio can be seen from theratio of profit to sales or from the ratio of profit to asset/equity. These ratio are similar in nature, therefore it is assumed that the two ratios measure the same thing. Table 3.4 and 3.5 shows the profitability ratio of sample company from 2015 through 2017.

Table 3.4.Profitability Ratio 2015-2017

Company	Gross Profit Margin			Net Profit Margin		
	2015	**2016**	**2017**	**2015**	**2016**	**2017**
PT BentoelInternasionalInvestama	10%	11%	10%	-10%	-11%	-2%
PT Gudang Garam	22%	22%	22%	9%	9%	9%
PT Hanjaya Mandala Sampoerna	24%	25%	24%	12%	13%	13%
PT Wismilak Inti Makmur	30%	30%	29%	7%	6%	3%
PT Delta Djakarta	67%	70%	74%	27%	33%	36%
PT Indofood CBP Sukses Makmur	30%	32%	31%	9%	11%	10%
PT Indofood Sukses Makmur	27%	29%	28%	6%	8%	7%
PT Mayora	28%	27%	24%	8%	8%	8%
PT Multi Bintang	58%	66%	67%	18%	30%	39%
PT Nippon IndosariCorpindo	53%	52%	53%	12%	11%	5%
PT Prashida Aneka Niaga	12%	13%	14%	-5%	-4%	2%
PT SekarBumi	13%	12%	10%	3%	2%	1%
PT SekarLaut	25%	26%	26%	3%	2%	3%
PT Tri Banyan Tirta	29%	30%	16%	-8%	-9%	-24%
PT Wilmar Cahaya Indonesia	9%	11%	7%	3%	6%	3%

Table 3.5.Profitability Ratio 2015-2017

Company	Return on Equity			Return on Investment		
	2015	**2016**	**2017**	**2015**	**2016**	**2017**
PT BentoelInternasionalInvestama	52%	-22%	-5%	-13%	-15%	-3%
PT Gudang Garam	17%	17%	18%	10%	11%	12%
PT Hanjaya Mandala Sampoerna	32%	37%	37%	27%	30%	29%
PT Wismilak Inti Makmur	14%	11%	4%	10%	8%	3%
PT Delta Djakarta	23%	25%	24%	18%	21%	21%
PT Indofood CBP Sukses Makmur	18%	20%	17%	11%	13%	11%
PT Indofood Sukses Makmur	9%	12%	11%	9%	6%	6%

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PT Mayora	24%	22%	22%	11%	11%	11%
PT Multi Bintang	65%	120%	124%	24%	43%	53%
PT Nippon IndosariCorpindo	23%	19%	5%	10%	10%	3%
PT Prashida Aneka Niaga	-13%	-13%	11%	-14%	-10%	5%
PT SekarBumi	12%	6%	3%	5%	2%	2%
PT SekarLaut	13%	7%	7%	5%	4%	4%
PT Tri Banyan Tirta	-5%	-6%	-15%	-2%	-2%	-6%
PT Wilmar Cahaya Indonesia	17%	28%	12%	7%	18%	8%

RESULTS AND FINDINGS

The financial ratios of each company were calculated above were analyzed using Pearson correlationto indicate whether those financial ratios in the same groups can be use interchangeable in performance evaluation.There is a certain amountof ratios used in the same categories with almost the same formulas. It is increased the correlation within groups and its indifference results. By conducting correlation analysis, it is found that there are a high coefficient correlationwithin groups (see Table 4.1 and Table 4.3). Highlighting the high and significant correlations coefficient between them, indicates that the two or more formula can be simplify into one formula. The statistical analysis results indicate whether they have a high correlation within and between categories.

The results of the correlation analysis (Table 4.1) indicate that the current ratio and quick ratio have a significant correlation. It can be inferred that the current ratio (CR) itself is enough to represent the liquidity ratio in assessing company performance in fulfilling its short term obligation or liquidity.

Table 4.1. Correlation between Current Ratio and Quick Ratio

	Current	Quick
Current Pearson Correlation Sig. (2-tailed) N	1 45	.846** .000 45
Quick Pearson Correlation Sig. (2-tailed) N	.846** .000 45	1 45

** Correlation is significant at the 0.01 level

The results of the correlation analysis within solvency ratio indicate that there is a significant correlation between debt to asset (DAR) and debt to equity-DER (Table 4.2). However, the coefficient of the correlation is quite low (0.491) it means that those ratio cannot be used interchangeably.

Table 4.2. Correlation between Debt to Asset Ratio and Debt to Equity

	DAR	DER
DAR Pearson Correlation Sig. (2-tailed) N	1 45	.491** .001 45
DER Pearson Correlation Sig. (2-tailed) N	.491** .001 45	1 45

** Correlation is significant at the 0.01 level

The results of the correlation analysis within activity ratio indicate the existence of significant correlation between account receivable turnover (ARTO) and asset turnover (ATO) but quite low coefficient (0.305). The correlation between working capital turnover (WCTO) with two others ratio in activity group was not significant. Therefore, there is not enough reason to simplify the ratio within this group.

Table 4.2. Correlation within Activity Ratio

		ARTO	ATO	WCTO
ARTO	Pearson Correlation	1	.305*	-.056
	Sig. (2-tailed)		.041	.716
	N	45	45	45
ATO	Pearson Correlation	.305*	1	.217
	Sig. (2-tailed)	.041		.153
	N	45	45	45
WCTO	Pearson Correlation	-.056	.217	1
	Sig. (2-tailed)	.716	.153	
	N	45	45	45

* Correlation is significant at the 0.05 level

Overall, from correlation analysis result in the liquidity groups suggest that analyst can used one out of two ratio depends on the analyst needs. While in the profitability groups (see Table 4.3), the analysis results indicate that it is indifference for financial analyst whether using net (NPM) or gross profit-GPM (coefficient 0.857, sig at 0.000) and return on asset (ROA) or return on equity-ROE (coefficient 0.872, sig at 0.000).

Table 4.3. Correlation within Profitability Ratio

	GPM	NPM	ROA	ROE
GPM Pearson Correlation	1	.857**	.596**	.526**
Sig. (2-tailed)		.000	.000	.000
N	45	45	45	45
NPM Pearson Correlation	.857**	1	.839**	.707**
Sig. (2-tailed)	.000		.000	.000
N	45	45	45	45
ROA Pearson Correlation	.596**	.839**	1	.872**
Sig. (2-tailed)	.000	.000		.000
N	45	45	45	45
ROE Pearson Correlation	.526**	.707**	.872**	1
Sig. (2-tailed)	.000	.000	.000	
N	45	45	45	45

** Correlation is significant at the 0.01 level

CONCLUSION

Conclusion

Scholars admit the benefit of using financial ratio in its flexibility for analyzing financial performance and as a decision making tools. To some extent it can reduces the complexity of financial statements, therefore increasing the ability to make a rational decision. They alsofound several variable differences in calculating the same formulas, so caution is needed when using it. Pearson correlation reveals the existence of interrelated formula within groups this indicates that the two ratios describe a similar situation, therefore the researchers propose the use of just one formula to make it simpler for the user.

Limitation and Suggestion

The use of samples that only cover a number of business fields is one of thelimitation of this study, so caution is needed in its generalization. Another limitation of this study is the use of a single Pearson correlation analysis tool, further development is needed using other analytical tools as a comparison. Future research is expected to increase the number of samples and the scope of the industry to increase its external validity.

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