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Working Capital Turnover on Profitability Evidence on Manufacturing Firms in ASEAN

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Abstract

This research aims to find out the effect of working capital turnover on profitability as measured by return on assets, return on equity, and net profit margin using the firm size control variable due to the inconsistency of results and the lack of related research. 5980 observations from manufacturing companies in five ASEAN countries that published financial reports on their respective stock exchanges in the 2012-2016 period were the sample for this research. This sample was then tested for multicollinearity and heteroscedasticity first and then the multiple regression method with a fixed effect model was used to find out the influence of the independent variable on the dependent variable. The research results found that working capital turnover did not affect the profitability of manufacturing companies in ASEAN. Thus, it is recommended that companies use other liquidity strategies that can be proven to influence profitability. It is recommended that further research be carried out using other variables or in different countries and research periods.

Keywords: Working Capital Turnover, Liquidity, Profitability, Manufacturing Firms, ASEAN

1. Introduction

The background to the establishment of a company can vary. Some companies were established initially to meet the personal needs of a certain group of people, some were founded to help the community, or perhaps for other reasons [1]. However, the most important goal for a company or business is to make a profit [2]. Moreover, companies that obtain funds from investors must ensure the welfare of their investors and one of them is by maximizing the profits they can obtain [3]. Apart from that, the company strives to continue to gain profits to support daily operational activities [4]. Imagine if the company does not make a profit, then the company must take out loans to fulfill other obligations [5]. If it's only for a while, it won't be a problem. However, if you haven't made a profit for a long time, then this will be a problem for the company [6]. Companies will have difficulty financing operational activities, and paying bills and obligations, so in the end they will experience bankruptcy. This is certainly not expected by all companies. Thus, company management strives to continue to create various policies and strategies to generate profits [7].

Talking about daily operational activities cannot be separated from the company's working capital. Companies need to continue to maintain the availability and adequacy of working capital because it is related to liquidity which is the lifeblood of a company [8]. In fact, working capital management is very important because it impacts a company's liquidity and profitability [9]. It is said that companies need to maintain a balance between liquidity and profitability because high liquidity can mean low risk and low profitability, and vice versa [10]. So, studying working capital and its impact on profitability is an interesting thing to do considering that the availability of working capital means the company can meet its short-term obligations and, on the other hand, can impact the company's profitability.

However, there are still inconsistencies regarding the impact of working capital management on profitability. Several studies have found a positive impact and quite a few have found the opposite. A study found a negative relationship between profitability and accounts receivable days, while the cash conversion cycle and current ratio positively and significantly influenced profitability [11]. Meanwhile, in his study, A feef found no relationship between the current ratio and profitability [12]. However, a study found that the current ratio had a positive influence, while the quick ratio had a negative influence on profitability [13]. Furthermore, working capital turnover has a negative effect on profitability as measured by return on assets, but the opposite where working capital turnover had a positive impact on return on assets [14]. The existence of inconsistencies makes studies regarding working capital and profitability still interesting things to explore [15]. In addition, of the many ratios to measure working capital management and its effect on profitability, one that is still rarely used is Working Capital Turnover (WTO). So, based on these things, the researcher wants to research The Effect of Working Capital Turnover on Profitability: Evidence from Manufacturing Companies in ASEAN. The research questions to be answered are Is there an influence of

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working capital turnover on the profitability of manufacturing firms in ASEAN?. Are there differences in the effect of working capital turnover on profitability across countries?.

The scope of this research is financial data of manufacturing companies in ASEAN in relation to working capital turnover and profitability [16]. Profitability will be measured using Return on Assets (ROA), Return on Equity (ROE), and Net Profit Margin (NPM) with the control variable namely Firm Size. Furthermore, this research is limited to manufacturing companies in five ASEAN countries with stock exchanges: the Philippines, Indonesia, Malaysia, Singapore, and Thailand. Apart from that, it is also adjusted to the availability of financial data for manufacturing companies for five years, starting from 2012-2016.

For information regarding the variables, WTO is found by subtracting a company's Short-term Assets from Short-term Liabilities to get the Working Capital, then dividing Sales by Working Capital to get WTO [17]. ROA can be found by dividing Net Income by Average Total Assets and it shows how effectively a company uses existing assets to generate profit [18]. Meanwhile, ROE is found by dividing Net Income with Average Equity which shows the effectiveness of invested capital in generating profits because it measures the return on each of their investments in the company [19]. As for NPM, this variable is found by dividing Net Income by Sales then times 100% and it measures the percentage of money earned by a company after deducting all costs and expenses [20].

2. Research Method

In this research, two methods will be used, namely causal and descriptive. Some of the activities that will be carried out are collecting secondary data, processing data using statistical analysis tools, and presenting the research results obtained. The research sample was taken from secondary data from the database provider company, namely Thomson Reuters. This research uses a purposive sampling technique, which requires relevance between the sample and the research objectives, and the sample must have special characteristics so that it can represent the population. Based on this method, it was determined that the sample companies were companies in the manufacturing industry in five ASEAN countries, namely: Indonesia, Malaysia, the Philippines, Singapore, and Thailand whose financial data was available from 2012-2016. Secondary data was used in collecting data for this research. The number of observations from a sample of manufacturing companies in the five countries totaled 5980. This number was obtained after sorting and using the windsorize technique, which involved pulling outlier data so that it could be used in research. Of the many financial information that can be used as research variables, this research specifically takes WTO as the independent variable and profitability which consists of ROA, ROE, and NPM as the dependent variable. Furthermore, one control variable is also used, namely firm size, as one of the independent variables.

The financial data that has been collected is then sorted and tested using the classic assumption test. The two classical assumption tests used are the multicollinearity test and the heteroscedasticity test. The results of the first test found that the VIF value was 1.04, which means it was reasonable so that no multicollinearity problems were found. Meanwhile, the heteroscedasticity test with the White heteroscedasticity test found a heteroscedasticity problem ($p < 0.05$). To overcome this, robust mode is used in multiple regression analysis in Stata software. Multiple regression analysis was then used to test the influence of the independent variables on the dependent variables, both ASEAN as a whole and each of the five countries in the sample. Meanwhile, because this study uses panel data, it was decided to use the fixed effect (fe) model as the best model based on the LM test, Hausman test, and Chow test.

3. Result and Discussion

The results of descriptive statistical tests for manufacturing companies in ASEAN can be seen in Table 1. The WTO manufacturing companies in ASEAN have the lowest value of -86.73, the highest value is 144.60 and the average value is 4.16, meaning that the average manufacturing company in ASEAN using $1 of short-term assets can generate sales of $4.16. The highest ROA value for manufacturing companies in ASEAN during the research period was 0.31, the lowest value was -0.68, and the average value was 0.0233. This means that for the average manufacturing company in ASEAN, every $1 invested in assets can provide a return of 2.33%. Further, the highest ROE value during the research period for manufacturing companies in ASEAN was 1.196 and the lowest value was -1.41 with an average value of 0.0494, meaning that on average for manufacturing companies in ASEAN, every $1 invested by shareholders can provide a return of 4.94%. Furthermore, the highest NPM value is 76.44% the lowest value is -313% and the average value is -1.97%. This means that the average net profit for manufacturing companies in ASEAN is -1.97% of total sales from that period.

Table 1. Descriptive Analysis of WTO, ROA, ROE, NPM, dan Firmsize - ASEAN

ASEAN	n	Mean	SD	Min	Max
WTO	5980	4.160	21.897	-86.731	144.608
ROA	5980	0.023	0.127	-0.689	0.318
ROE	5980	0.049	0.283	-1.416	1.197
NPM	5980	-0.019	0.438	-3.137	0.764
Firm size	5980	14.421	3.306	9.711	23.863

In Table 2, in overall during the research period, manufacturing companies in ASEAN had the highest WTO average value for the Philippines with a value of 5.106. This value shows that among ASEAN countries, manufacturing companies in the Philippines have the highest efficiency in using short-term assets to generate sales. In other words, manufacturing companies in

ASEAN using $1 of short-term assets can generate sales of $5.106. The lowest average WTO value is owned by manufacturing companies in Malaysia at 3.185. This shows that on average manufacturing companies in Malaysia are less efficient in managing their current assets. This can be caused by too much trade receivables and inventory to support sales. This means that every $1 of short-term assets used can only generate sales of $3.185.

The highest average ROA value is in Thailand at 5.4%. This shows that manufacturing companies in Thailand are the most effective in using their assets to generate profits. The lowest ROA value is owned by a manufacturing company in Singapore at -1.58%. This shows that manufacturing companies in Singapore have the lowest level of effectiveness when compared to manufacturing companies in ASEAN.

Thailand has the highest average ROE value with a value of 5.4%. This value shows that manufacturing companies in Thailand are the most effective in using capital from investors to generate profits. The lowest average ROE value is in Singapore with a value of -0.0031, which means that the rate of return on profits from each capital used is very ineffective. Meanwhile, four ASEAN countries have negative average NPM values except Thailand. This shows that Thailand outperforms the other four countries in terms of the net rate of return from each sale obtained.

Table 2. The Comparison of Mean Value of WTO, ROA, ROE, NPM, Firmsize-Each Country

	ASEAN e (mean)	ID e (mean)	MY e (mean)	PH e (mean)	SI e (mean)	TH e (mean)
WTO	4.160	4.763	3.186	5.106	4.717	4.708
ROA	0.0234	0.039	0.020	0.035	-0.016	0.054
ROE	0.0495	0.091	0.038	0.041	-0.003	0.096
NPM	-0.019	-0.005	-0.011	-0.014	-0.115	0.046
Firmsize	14.421	21.230	12.668	16.093	12.520	14.942

Meanwhile, to answer question No. 1 whether WTO has an effect on profitability, then the regression results can be seen in Table 3. It shows that the WTO has no effect on ROA, ROE, and NPM for manufacturing companies in five ASEAN countries ($p > 0.05$), only company size (firm size) has a positive effect on ROA and NPM. Next Statistical Results of the Effect of WTO on Profitability of ASEAN Manufacturing Firms on Table 3.

Table 3. Statistical Results of the Effect of WTO on Profitability of ASEAN Manufacturing Firms

ASEAN	ROA	ROE	NPM
WTO	0.00000148	0.000278	0.000113
	(0.02)	(1.05)	(0.73)
firmsize	0.0281***	-0.0342	0.109**
	(3.57)	(-1.27)	(3.26)
Cons.	-0.382***	0.542	-1.590***
	(-3.37)	(1.39)	(-3.30)
N	5980	5980	5980
Adjusted R2	0.0104	0.0027	0.0113
F-stat	6.41	1.53	5.56
Probability	0.0017	0.2164	0.004

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Furthermore, to answer the influence of the WTO on ROA, ROE, and NPM in each country, a regression test was carried out for each country which can be seen in Table 4, Table 5, Table 6, Table 7, and Table 8 as follows.

Table 4. Statistical Results of The Effect of WTO on Profitability of Indonesia's Manufacturing Firms

Indonesia	ROA	ROE	NPM
WTO	0.00000853	0.0009641	0.00000621
	(0.09)	(1.49)	(0.04)
firmsize	0.0044558	-0.0332769	0.0798867*
	(0.33)	(-0.92)	(2.06)
Cons.	-0.0552311	0.7932587	-1.700615*
	(-0.19)	(1.03)	(-2.07)
N	778	778	778
Adjusted R2	0.0005	0.0131	0.008
F-stat	0.06	1.53	2.5
Probability	0.9446	0.2207	0.085

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

In Table 4, it shows that the WTO has no influence on profitability as measured in ROA, ROE, and NPM in manufacturing companies in Indonesia. Only firm size has a positive influence on NPM. This means that the efficient use of working capital in obtaining sales will not directly impact the company's profitability.

Table 5. Statistical Results of The Effect of WTO on Profitability of Malaysia's Manufacturing Firms

Malaysia	ROA	ROE	NPM
WTO	0.0000528	0.0001212	0.0000933
	(0.79)	(0.6)	(0.7)
firmsize	0.0386774***	-0.0554793	0.1554222*
	(3.3)	(-1.25)	(2.42)
Cons.	-0.4696236**	0.7402616	-1.979898*
	(-3.16)	(1.32)	(-2.44)
N	2,253	2,253	2,253
Adjusted R2	0.0212	0.0066	0.0212
F-stat	5.8	0.97	3.15
Probability	0.0032	0.3806	0.0439

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Likewise, Table 5 shows that the WTO also does not affect the profitability of manufacturing companies in Malaysia, only firm size as a control variable has an influence on ROA and NPM.

Table 6. Statistical Results of The Effect of WTO on Profitability of the Philippines Manufacturing Firms

Philippines	ROA	ROE	NPM
WTO	-0.0002448	-0.0004805	0.0004245
	(-0.82)	(-0.5)	(0.74)
firmsize	0.0134699	0.0278527	0.1571852
	(1.55)	(1.23)	(1.16)
Cons.	-0.1807814	-0.4047446	-2.545846
	(-1.29)	(-1.11)	(-1.17)
N	249	249	249
Adjusted R2	0.007	0.0056	0.0245
F-stat	1.53	1.13	1
Probability	0.226	0.3301	0.3742

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

In the Philippines, it was also found that the WTO had no effect on ROA, ROE, and NPM (see Table 6), the same as in Singapore and Thailand (see Table 7 and Table 8). So, it can be concluded that in the five ASEAN countries studied, it was found that the WTO had no influence on company profitability as measured through ROA, ROE, and NPM. This means that there are other variables that can influence the company's

profitability. Because there was no influence of the WTO on ROA, ROE, and NPM, then question No. 2 of this research that is to answer whether there is a difference in the influence of working capital turnover (WTO) on profitability across countries cannot be addressed further.

Table 7. Statistical Results of the Effect of WTO on Profitability of the Singapore's Manufacturing Firms

Singapore	ROA	ROE	NPM
WTO	0.0000227	0.0006783	0.0003442
	(0.08)	(0.56)	(0.43)
firmsize	0.0606385**	-0.0635464	0.2055066*
	(2.63)	(-0.88)	(2.84)
Cons.	-0.775304**	0.7892804	-2.690152*
	(-2.69)	(0.88)	(-2.97)
N	1,309	1,309	1,309
Adjusted R2	0.0273	0.0057	0.0252
F-stat	3.48	0.66	4.15
Probability	0.0323	0.5187	0.0168

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Table 8. Statistical Results of The Effect of WTO on Profitability of the Thailand's Manufacturing Firms

Thailand	ROA	ROE	NPM
WTO	-0.000025	-0.0000306	-0.0000125
	(-0.38)	(-0.14)	(-0.18)
firmsize	-0.0052349	0.0024334	-0.0690882
	(-0.5)	(0.05)	(-1.68)
Cons.	0.1324384	0.0595859	1.078637
	(0.84)	(0.08)	(1.76)
N	1,391	1,391	1,391
Adjusted R2	0.0007	0	0.0153
F-stat	0.22	0.01	1.43
Probability	0.8056	0.9874	0.2412

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

The research results show that the WTO has no influence on ROA, ROE, and NPM. Found a positive influence of the WTO on profitability. However, found that the WTO did not affect profitability. Wibowo and Rohyati explained that this could happen if the company did not rely on existing working capital turnover to increase the company's profitability. It can be said that no matter how efficiently a manufacturing company uses existing working capital, it still does not affect the company's profitability if the company goes for other strategies, such as the current ratio or cash conversion cycle. So, companies can use other strategies that are proven to influence company profitability, such as maximizing the current ratio or reducing days of inventory to increase profitability.

4. Conclusion

This research aims to find out how the WTO influences profitability as measured through ROA, ROE, and NPM. With a total of 5,980 observations from manufacturing companies in five ASEAN countries that reported their financial reports and were listed on the stock exchanges in each country in the 2012-2016 period. In conclusion, the first question of the study addressed that there is no effect of WTO on the ROA, ROE, and NPM of manufacturing firms in ASEAN. Because of that, the second question of the study cannot be addressed. However, regardless of the results, this study can be a reference for other researchers and other parties to look at other independent variables that have the potential to influence profitability. Apart from that, future research can use samples from different countries and periods which could find other results that could enrich the research that has been carried out. Despite the existing limitations, it is hoped that this research can provide input and additional references for parties interested in the variables studied as well as expand scientific insight regarding the impact of the WTO on ROA, ROE, and NPM.

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