> RESEARCH ARTICLE

COMPANIES' OPERATING CASH FLOW RATIOS AND THE PERFORMANCE OF THEIR STOCKS: EVIDENCE FROM PHILIPPINE STOCK EXCHANGE

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ABSTRACT

The law of supply and demand and principle of risks and rewards are fundamentals to realization of extraordinary profits in stock investing and trading. The same complex business opportunities are present in the Philippine Stock Market. The increase in stock market participants has become significant in the recent years. This study is essentially conducted to identify specific patterns within the Philippine stock market to ultimately improve models for profitable stock investing and trading. This study has purposively selected three industrial classifications and took all companies operating within these industries, able to provide needed information during 2017-2021, as samples. This study analyzed the capability of operating cash flow to predict the behavior of stocks within the context of the Philippine stock market. Additionally, the differences in stock movement was studied between groups of companies according to industrial classification and firm size. It was found that computed operating cash flow ratios cannot predict stock price and stock volatility. Also, difference in stock price are found significant between companies according to firm size.

Keywords: *Operating cash flow ratios, stock price, stock volatility.*

INTRODUCTION

The economy can be significantly impacted by changes in the stock market. Market forces, such as seller supply and buyer demand, determine stock prices. Stock prices are influenced by fundamental factors such as a company's earnings and profitability from creating and selling goods and services (Harper, 2021). A firm's stock price represents its worth to investors; if a company's stock price is high, then its value to investors is high, and vice versa; thus, the share price is significant for the company (Purnomo, 2008). A written article by Hong, Bian and Lee (2021), stated that the movement of the stock prices makes the stock market volatile. As the stock prices move up and down, their volatility can have a positive or negative impact on the economy. That is why knowing how to analyze and predict the movement of stock prices will be beneficial to the market participants.

Stocks with high levels of volatility are more attractive to investors (Iqbal et al., 2015). High volatility is preferred by short term investors, while long-term investors are more attracted to stocks with low volatility rate. Company profits make a better determinant than economic performance (Almeida, 2016). If a company's net income goes up, the stock price will probably increase (Adkins, 2017). Matar et al. (2018) provided a correlation between company size and profitability, showing that larger businesses can profit more. It cannot, on the other hand, be related to market to book value (MBV), which is crucial since firm size is frequently more strongly tied to basic and core values than to market value. The company's profitability will improve as a result of this.

In this study, the researchers determined the potential effect of operating cash flows on the corresponding stock price of Philippine Stock Exchange (PSE) listed companies. According to Laksitaputri (2012), in an effective capital market, stock prices reflect all important information, and if the stock price changes, the market will react. The question is, whether the entities' profiles and operating cash flows wield significant effect on their stocks' performances. There are several debates arising on the relationship between cash flows and stock price, which is the driving force behind this research. Some find a significant causal relationship between the two; others do not find any substantial relationship especially in the context of developing countries. These debates are the reasons for undertaking this research and to innovatively assess the relationship between cash and stock performance of the companies in the context of PSE.

MATERIALS AND METHODS

Research Design

This study utilized descriptive-predictive research design. Regression analysis was used to determine if cash flow ratios exert influence on stock prices and volatility.

Research Instrument

As this study thrived through documentary review, no survey was conducted for data gathering. Needed and used information in analyzing the relationship under study are retrieved from the public financial statements of the companies. Throughout this study, a total of 37 corporations were studied: nine (9) from construction, infrastructure, and allied services

industry, 19 from food and beverage services industry, and nine (9) from transportation services industry. Having a different nature and design, this study did not utilize survey questionnaires. Collected data consist of information covering 2017 to year 2021.This study captured information on the financial statements of PSE-listed companies from Market Watch – a website where such data are held available.

Data Collection

The researchers retrieved the data on the companies' respective industrial classifications; worth of periodic (annual) total assets – to measure of firm size; proceeds of annual operating cash flows, and value of assets, liabilities, equity, and net income – which were used to determine cash flow ratios; and year-end and monthly valuation of related stock price. The website offers comprehensive financial statements including the balance sheet, income statement, statement of cash flows, and stock price charting from which needed data are captured accurately. Retrieved data is consolidated into a dataset through Microsoft Excel useable for analysis.

Data Analysis

Produced dataset through Microsoft Excel are analyzed by the statistician using IBM SPSS version 23. Frequency and percentage distributions are also used in presenting the profile of the companies, while the mean and standard deviation is employed to describe the cash flows ratios and stock price behavior. Moreover, multiple regression analysis is used to determine which of the operating cash flow ratios can predict stock price and volatility. One-way analysis of variance is used to determine the significant difference in independent variables between industries and firm sizes.

RESULTS

The breakdown of the 37 publicly listed companies under study according to their industrial classification and firm size. It shows that most of the companies studied belong to Food and Beverage service having 51.40% while the two remaining industries equally have 24.30% of population [Table 1].

Table 1. Profile of the companies (n=37).

Company Profile	Frequency	Percentage
Industrial Classification		
Construction, infrastructure, and allied service	9	24.30
Food and beverage service	19	51.40
Transportation service	9	24.30
Firm Size		
Small	13	35.13
Medium	17	45.95
Large	7	18.92

The results show the companies' operating cash flow ratios observed during the 5-year period studied. These ratios include operating cash flow to total assets ratio, operating cash flow to total liabilities ratio, operating cash flow to total equity ratio, and operating cash flow to net income ratio [Table 2] and average stock price and volatility of the studied companies for 2017-2021 [Table 3].

Table 2. Mean and standard deviation of operating cash flow ratios from 2017 to 2021.

Cash Flow Ratios	Year	Mean	SD
Operating Cash Flow to Total Assets Ratio	2017	0.056	0.079
	2018	0.058	0.072
	2019	0.081	0.068
	2020	0.065	0.080
	2021	0.041	0.067
	5-year Average	**0.061**	**0.054**
Operating Cash Flow to Total Liabilities Ratio	2017	0.173	0.342
	2018	0.152	0.273
	2019	0.108	0.580
	2020	0.162	0.190
	2021	0.141	0.233
	5-year Average	**0.146**	**0.247**
Operating Cash Flow to Total Equity Ratio	2017	0.127	0.239
	2018	0.140	0.202
	2019	0.387	0.911
	2020	0.103	0.589
	2021	0.155	0.358
	5-year Average	**0.182**	**0.268**
Operating Cash Flow to Net Income Ratio	2017	-4.204	26.609
	2018	4.082	14.023
	2019	0.540	4.522
	2020	1.871	11.226
	2021	11.556	45.340
	5-year Average	**2.769**	**6.663**

Table 3. Observed average stock price and volatility of the studied companies for 2017-2021.

Variable	Year	Mean (PhP)	SD
Stock Price	2017	30.29	55.69
	2018	30.28	59.29
	2019	25.26	44.05
	2020	23.18	40.70
	2021	29.66	55.04
	5-year Average	**27.73**	**49.89**

		Stock Price			
	2017	0.14	0.09
	2018	0.13	0.08
Stock Volatility	2019	0.16	0.12
	2020	0.15	0.08
	2021	0.14	0.15
	5-year Average	**0.14**	**0.07**

The results shows that the food and beverage services companies had the highest average stock price (PhP 33.42 ±61.74), followed by transportation services (PhP 29.32±43.79), while construction, infrastructure, and allied services had the lowest (PhP 14.13±20.41). Moreover, on stock volatility, construction, infrastructure, and allied services industry is most volatile (0.17±0.08), followed by transportation services (0.14±0.09), while food and beverage had the lowest average volatility (0.13±0.05). Furthermore, it showed that there were no significant differences among the three different industry classification both for stock price [$F_{(2,34)}$ = 0.449, p= 0.642], and stock volatility [$F_{(2,34)}$ = 1.468, p= 0.245] [Table 4].

Table 4. Differences in stock price and stock volatility in terms of industrial classification and firm size.

Variable	Stock Price				Stock Volatility			
I. Industry Classification	Mean	SD	$F_{(2,34)}$	p-value	Mean	SD	$F_{(2,34)}$	p-value
Construction, infrastructure, and allied service	14.13	20.41			0.17	0.08		
Food and beverage services	33.42	61.74	0.449	0.642	0.13	0.05	1.468	0.245
Transportation services	29.32	43.79			0.14	0.09		
II. Firm Size								
Small	10.39	20.03			0.18	0.08		
Medium	12.51	11.75	14.577	<0.001	0.13	0.05	3.602	0.038
Large	96.92	82.87			0.10	0.03		

Legend: p-value > 0.05 not significant; ≤ 0.05 significant

The model derived from the results of multiple regression analysis performed to determine which among the cash flows ratios predict stock price and stock volatility is presented in Table 5.

Table 5. Regression analysis for cash flows predicting stock price and stock volatility.

Variable	B	T	p-value	R^2	F	p-value
Stock Price						
(Constant)	6.44	0.493	0.625			
Cash flows to assets ratio	278.677	1.289	0.207			
Cash flows to liabilities ratio	2.631	0.061	0.952	0.133	1.226	0.319
Cash flows to equity ratio	18.642	0.537	0.595			
Cash flows to net income ratio	0.175	0.141	0.889			
Stock Volatility						
(Constant)	0.146	8.599	0.00			
Cash flows to assets ratio	0.299	1.063	0.296			
Cash flows to liabilities ratio	-0.136	-2.417	0.022	0.449	2.024	0.115
Cash flows to equity ratio	-0.046	-1.009	0.320			
Cash flows to net income ratio	0.002	0.983	0.333			

DISCUSSIONS

According to the findings of the study, 20% of the companies were classified as large firms. This means that out of every 5 corporations in the industries under study, one company has total assets of more than 100 billion pesos. This indicates that a significant portion of the industry is dominated by these large companies. Most of the companies studied were medium-sized firms, comprising 45.95% of the total. This suggests that medium-sized companies are an essential part of the industry, and they play a vital role in the economy.

In contrast, small-sized firms represented only 35.13% of the companies studied. This indicates that small companies are not as prevalent in the industry, and they may face more significant challenges compared to larger firms. Furthermore, the study reveals that 2 out of every 3 corporations studied have less than 100 million pesos in total assets, indicating that most of the companies are relatively small in size.

As presented in Table 2, the average CFLR for 2017-2021 of the companies studied is 14%. This implies that for every 100-peso liability incurred, the companies are generating around 14 pesos. Meanwhile, CFER has a five-year average of 18%. Meaning, there is 18-peso cash inflow for every 100-peso investment by the owners. Moreover, it can be noticed that CFLR was lowest during 2019. This may indicate that companies were incurring high cost of liabilities that year and that creditors are also willing to lend financial resources. This is supported by the 2020 observation where CFLR has risen which may indicate that creditors were hesitant in lending during the pandemic, and the inverse observations in CFER.

While the recorded highest CFAR was during 2019, the CFAR in 2021 may not conclusively indicate that the companies failed to operate efficiently recently as this may also have been caused by relative significant increase in assets owned due to the global pandemic. Ultimately, the 6% average CFAR for the 5-year observation indicates that during 2017-2021, companies studied have generated 6-peso cash inflow for every PhP 100 asset owned. While this may

indicate disturbingly low returns on investment it must be noted that the operating cash flow was compared with the accumulated total assets of the companies throughout their operating lives, not the worth of asset increase for the particular year.

A CFLR which is greater than one implies that a company has generated more cash in a period than what is needed to pay off its current liabilities. On the other hand, a high CFER would naturally be more attractive to investors as it may be a good indication that their investments in a company yield favorable returns. Consequently, the CFLR and CFER will have an inverse relationship.

The adverse effect of the global economic recession caused by the global pandemic (The World Bank, 2020) is evident in the Philippine stock market, the 2021 CFLR and CFER may imply that the Philippine service industry is again operating on a profitable level.

Furthermore, as seen in Table 2, 2021 recorded the highest CFNIR of 110.56%. While the lowest CFNIR is recorded in 2017 with -420.40%. Although this study cannot conclusively indicate whether this implies good economic conditions or good investing opportunities, the table may imply that the net income for 2021 was significantly high or that some of the companies are significantly operating better than they did before the pandemic. It should be noted that one of the industries studied is the Transportation service industry. While consumption for public transportation has been significantly and adversely affected, the shipping services may have benefited greatly from the recent surge in demand for eCommerce. By participation of 73 million online active users, the Philippine eCommerce market earned 17 billion dollars during 2021 (ECommerce, 2022).

The analysis focuses on the period from 2017 to 2021, revealing trends in average stock prices and volatility. It is noted that the stock market in the Philippines appears to have rebounded in 2021, despite earlier impacts from the global economic recession. However, this overall recovery masks variations in stock prices for specific companies, some of which have seen higher stock prices during and after the pandemic than before. It indicates fluctuations in stock volatility, with a decrease in 2021 compared to 2020 but an increase compared to 2018. The five-year average suggests improved market stability compared to the turbulent year of 2020. The result emphasizes that stock prices are influenced by various factors, both internal and external to individual companies, and are driven by supply and demand dynamics, reflecting investor perceptions of profitability. Across different industries, the study finds no significant differences in stock prices and volatility, suggesting that investors approach various sectors similarly. Analysis examines the influence of firm size on stock performance, showing significant differences among small, medium, and large companies in terms of stock price and volatility. Multiple regression analysis indicates that only the operating cash flow to total liabilities ratio significantly predicts stock volatility. However, the model derived from the regression analysis is also non-significant.

This multiple regression analysis indicates that the stock price and stock volatility of companies in the Philippine stock market cannot be predicted with the proposed model based on operating cash flow ratios. This implies that the demand-supply which ultimately dictates the movement of stocks cannot be predicted by these specific financial attributes (cash flow ratios) of the companies (with the exception of operating cash flow to liability ratio). While

operating cash flow is a good measure of how much cash can a business undertaking generate through its operations, it may not be specifically considered by investors and traders whose interests affect stock price. With the rise of stock market participants in recent years (Dumalao-Abadilla, 2021), mostly contributed by hirelatively younger investors, to earn extraordinary yields from investing in stocks would ultimately require calculated risk-taking with consideration of external economic conditions and internal financial conditions of these publicly-held companies.

CONCLUSIONS

The study explores publicly listed companies in construction, infrastructure, food and beverage, and transportation industries in the Philippines. Many of these firms are financially stable, and this abundance suggests a favorable climate for investment. Cash flow ratios appear low, but when considered in relation to total assets, liabilities, and equity, they indicate the Philippine stock market's recovery from the pandemic-induced recession. Average stock prices from 2017-2019 are reasonable, and the 14% stock volatility is suitable for risk-averse investors. Operating cash flow to liabilities predicts stock volatility, but operating cash flow ratios do not forecast stock price movements. Stock prices and volatility do not significantly differ across industries but do vary with firm size. Larger firms have higher stock prices and less stock price volatility.

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