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Article: **Cash Flows or Profitability Measures: Which are Better Stock Return Predictors?**

Author(s): Ahmed Noor-Ud-Din¹, Burhan Rasheed², Zohair Farooq Malik², Syed Taha Fraz Haider Kazmi², Amer Shakeel²

Affiliation: ¹Lahore Business School, The University of Lahore, Pakistan
²School of Commerce and Accountancy, University of Management and Technology, Lahore, Pakistan

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Ahmed Noor-Ud-Din



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Cash Flows or Profitability Measures: Which are Better Stock Return Predictors?

Ahmed Noor-Ud-Din^{1*}, Burhan Rasheed², Zohair Farooq Malik²,
Syed Taha Fraz Haider Kazmi² and Amer Shakeel²

¹The University of Lahore, Lahore, Pakistan

²University of Management and Technology, Lahore, Pakistan

Abstract

In this article, we examine the relative ability of cash flows and profitability measures to predict stock returns; whereas, the primary objective of this study is to identify which among the aforementioned predictors have a better stock prediction ability. For this purpose, we used five-year data (from 2014 to 2018) of 50 non-financial firms listed on the Pakistan Stock Exchange. We used cash flow from operations and cash flow after financing activities as cash flow measures and gross profit, operating profit, and earnings per share as profitability measures. The technique of panel regression was used in this study. We found that for stock return predictions, profitability measures provide better prediction results than cash flows.

Keywords: cash flow from operations (CFO), cash flow after financing activities (CFAF), predictions, profitability, stock returns

Introduction

A wide range of research focuses on investigating the possible capability of cash flows and earnings as predictors for future stock returns. Although different studies show different results, still financial analysts, regulators, and scholars continue to explore better predictors for predicting the stock returns of firms (Nallareddy et al., [2018](#)). In a like manner, the primary objective of this study is to find the better, more accurate, and most suitable predictors for future stock returns.

The main objective of financial statements is to provide financial information about the concerned businesses including their profitability, financial position, changes in equity, and cash flows. These statements are also helpful for stakeholders with different backgrounds as it helps them to

*Corresponding Author: ahmadnooruldin@gmail.com

understand a company's financial position and make rational decisions. These statements help investors to make all kinds of investment decisions based on the financial information provided by a company. Most of the financial statements are accrual-based and do not show the actual cash flows, although most people are interested in knowing the cash inflows and outflows as well as the success and failure of operational activities. These help the investors to check cash flows and intrinsic equity worth to predict the expected returns of a company's stock (Zhao et al., [2017](#)). There are four major financial statements issued by any company: profit and loss statement, balance sheet, statement of changes in equity, and cash flow statement. The cash flow statement gives information about cash inflows and outflows in an organization during a particular time frame. This statement provides information regarding three different aspects: operations, investment, and financing. Furthermore, operating cash flows can also be presented through two different methods: direct and indirect. Each method yields specialized financial information that has its importance and consequences.

International Financial Reporting Standards (IFRS) strive to encourage the firms to apply the direct method for presenting their operating cash receipts and payments. Unfortunately, most firms use the indirect method in which cash receipts and payments are not presented. The indirect method provides non-cash items by adjusting entries that do not provide cash such as depreciation, change in account receivable or payable, and taxes from the operating activities including net income (Hardan et al., [2016](#)).

There are different methods used to predict stock returns. Hou and Van Dijk ([2018](#)) argued that better stock returns can be achieved by small companies as compared to large companies by using profitability measures. Akbas et al. ([2017](#)) claimed that profitability is the best measure used for predicting the stock returns of any firm. Chiah et al. ([2016](#)) argued that leading firms have higher estimated returns as compared to those firms who are struggling for profits. Novy and Marx ([2013](#)) claimed that gross profit is the most suitable financial measure of profitability to predict the stock returns of any company. Ball et al. ([2015](#)) used the operating profitability method for the prediction of stock returns. Given the various methods and their uses, our study focuses on profitability, cash flow statements, and the

cash offered to shareholders to draw a clear picture of the stock returns of a firm.

Bouchaud et al. (2019) used the profitability anomaly theory in their model for predicting future stock returns. They also suggested that the cash flow method should be used for the prediction of future stock returns. Theoretically, there should be no discrepancy between the information derived from the income statement or the cash flow statement. However, if the source of the financial data of these statements is different, then both statements would reveal varied information. This inconsistency makes it harder for the investors to check the firm's profitability and compare it with the industry standard.

The direct cash flow model is presented in this research. Using this model, investors can enhance their understanding of a firm's past, current, and expected stock returns. In this paper, we focus on how investors can predict better stock returns through the direct cash flow method using financial ratios including gross profit and net profit ratios.

Literature Review

Several studies have been conducted to predict stock returns using different research models. Previously, the researchers used accruals and cash flows aggregated models for predicting stock returns. Afterwards, the researchers concluded that by disaggregating cash flows and accruals, they can make more accurate predictions for stock returns (Farshadfar & Monem, 2013). Some studies also suggested that the earnings of a firm are a better predictor of stock returns than cashflows, such as Lorek and Willinger (1996) showed that earnings have a better stock return prediction power than cashflows. On the contrary, another research showed that cash flows of a company have better predictive power than its earnings (Lorek & Willinger, 2009; Hammerschmid & Lohre, 2018). The main difference between these two methods is their different measurements, data collection methods, and research designs (Kim & Kross, 2005). Profitability measures do not show the whole picture of stock returns because it may include estimates such as depreciation, accruals, and amortization. Moreover, cash flows cannot be determined using profitability measures. On the other hand, cash flows provide the necessary information required for making any financial

decision. Cash flow measures also provide the necessary information regarding the cash balance of a company to the investors, market analysts, scholars, and investment banks (Pyun, [2019](#)).

Cash flow statements can be separated into three basic components or activities: operating, investing, and financing activities. IAS 7 explains each activity by its characteristics: operating activities comprise revenues generated from daily business activities, the purchase or sale of long-term assets constitute investing activities, and any change in a company's equity or borrowing comes under the heading of financing activities (Hirshleifer et al., [2009](#)). Cash Flow from Operations (CFO) shows how a firm generates cash inflows and manages cash outflows during its operations. There are two methods used to show CFO: direct cash flow method and the indirect cash flow method. The direct cash flow method provides information about cash receipts and cash payments. Furthermore, cash flow information can be used to gauge a company's ability to pay its debt, give dividends, and fulfill the cash-based needs of its operational activities (Lorek & Willinger, [2009](#)).

Livnat and Zarowin ([1990](#)) analyzed companies in the United States and concluded that disaggregating profitability into cash flows and accruals provides incremental figures from the simple income. Orpurt and Zang ([2009](#)) found that stock market prices are more accurately predicted by the direct method of cash flows. In their research, they also used the future earnings response coefficient to justify their results. Based on these results, we can easily predict better outcomes using the direct method. Clacher et al. ([2013](#)) examined Australian firms and concluded that the information provided by the direct cash flow method has more value as compared to profitability components. Novy-Marx ([2013](#)) described that prediction with gross profit to assets provides better results. On the other hand, Ball ([2015](#)) used operating profitability factors and assets as denominators and found that operating profitability provides better results. Based on the above discussion, the following hypothesis is drawn:

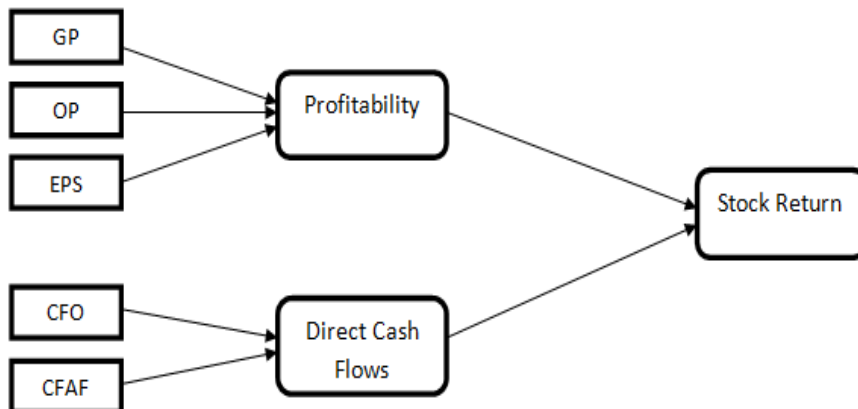
H1: Profitability measures are better predictors of stock returns than direct cash flows.

Methodology

The objective of this quantitative research is to compare the prediction of stock returns using cash flows and profitability measures. For this purpose, the data of 50 non-financial companies was collected from Pakistan Stock Exchange (PSX). The data of closing share prices was obtained from PSX for the period 2014-2018 and the data of CFO, CFAF, Gross Profit (GP), and Operating Profitability (OP) was collected from the selected companies' annual reports. To normalize the above mentioned data, we used total assets as the denominator. Furthermore, this research is related to (Ball et al. [2015](#); Novy-Marx, [2013](#)). In his research, Novy-Marx ([2013](#)) claimed that prediction with gross profit to assets ratio provides better results. On the contrary, Ball ([2015](#)) used operating profitability factors and assets as denominators and found that operating profitability provides better results.

$$1. \text{ Stock Return}_{it} = \alpha_0 + \beta_1 \text{CFO}_{it} + \beta_2 \text{CFAF}_{it} + \beta_3 \text{GP}_{it} + \beta_4 \text{OP}_{it} + \beta_5 \text{EPS} + \varepsilon_1$$

Research Model



CFO = Cash flow from operations	ε = Error term
CFAF	i = No. of firms
= Cash flow after financing activities	t = No. of years
GP = Gross profit	α = Constant
OP = Operating profitability	β = Coefficient
EPS = Earning per share	

Results and Discussion

Table 1 shows the descriptive statistics. It shows the general behavior of the variables used in the data.

Table 1

Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Stock returns	250	0.1862	0.6471	-0.9820	3.0036
CFO	250	0.1209	0.1626	-0.5981	1.00
CFAF	250	-0.2421	0.1424	-0.6473	0.7782
GP	250	0.2592	0.3704	-0.3841	4.2482
OP	250	0.1002	0.1173	-0.4963	0.7984
EPS	250	22.1065	38.0610	-24.07	322.86

Table 2

Pairwise Correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) CFO	1.000					
(2) CFAF	-0.3623	1.000				
(3) GP	0.2127	-0.1371	1.000			
(4) OP	0.6745	-0.4270	0.2780	1.000		
(5) EPS	0.2615	-0.2599	0.1745	0.3302	1.000	
(6) Stock return	0.6115	0.5599	0.4974	-0.3302	-0.4001	1.000

These statistics provide basic information about the variables, such as the mean value, standard deviation, minimum, and maximum values. To check the correlation between the variables, a pairwise correlation matrix was used. Table 2 shows that there is no issue of multicollinearity in the data. This issue was also checked through the variance inflation factor (VIF). All the values remained less than 2.0 and there was found no issue of multicollinearity.

Table 3*Panel Regression*

VARIABLES	(1) Stock returns Random Effect	(2) Stock returns Fixed Effect
CFO	0.7807** (0.3299)	1.0073** (0.4115)
CFAF	0.1644 (0.3100)	0.1142 (0.4265)
GP	0.4899*** (0.1110)	0.7140*** (0.2080)
OP	-0.9335** (0.4845)	-0.0447** (0.9380)
EPS	-0.0016 (0.0011)	-0.0079** (0.0035)
Constant	0.0984 (0.0577)	0.0619 (0.1336)
R-sq	0.0991	0.0697
Wald chi2 / F-Test	26.84***	4.39***
Observations	250	250
Number of Companies	50	50

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Using simple regression is not appropriate for longitudinal data, so panel regression was used in this research. Since we have the option of using either fixed effect or random effect model in panel regression, therefore, Hausman test was applied to select the suitable regression model. This test showed insignificant results which indicated the appropriateness of the

random effect model for this research. Table 3 shows that the cash flow measures CFO and CFAF yielded positive coefficients, that is, 0.7807 and 0.1644, respectively. However, CFAF had an insignificant p -value. On the other hand, profitability measures including gross profit yielded a positive coefficient, while operating profit and earnings per share yielded negative coefficients. Consequently, gross profit showed a highly significant p -value, while operating profit showed a less significant p -value, although EPS showed a negative and insignificant result. The overall R^2 value of the model is 9% which is a bit low. It means that 9% change in the dependent variable is explained through the independent variables. The chi-square value of the model is 26.84 and overall, the model is fit. Hence, it was proved that profitability measures provide better prediction results than cash flows, so H1 is accepted.

Conclusion

The main objective of this research is to show how better stock returns can be predicted using either profitability or cash flow measures. For this purpose, five-year data of 50 non-financial companies listed on PSX was collected. As cash flow measures, we used cash flow from operation (CFO) and cash flow after financing activities (CFAF). For profitability measures, we adopted (Novy-Marx, 2013; Ball, 2015) operating profits and earnings per share. The results of our study showed that profitability measures provide better results as compared to the cash flow measures. The limitations of our study stem from data restrictions since we used the data of only 50 non-financial firms for the period 2014-2018. Future research can be conducted on the financial sector. In this research, we used only three measures of profitability; however, future researchers may include more measures in the analysis to further explore this area. In this research, we used the direct measure of cash flows, while the indirect measure or accruals were not analyzed and can be used in future research.

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