

# “The relationship between profitability and cash flow in Jordanian banks”

## AUTHORS

Mohammad Fawzi Shubita 



## ARTICLE INFO

Mohammad Fawzi Shubita (2023). The relationship between profitability and cash flow in Jordanian banks. *Banks and Bank Systems*, 18(4), 195-208. doi:[10.21511/bbs.18\(4\).2023.17](https://doi.org/10.21511/bbs.18(4).2023.17)

## DOI

[http://dx.doi.org/10.21511/bbs.18\(4\).2023.17](http://dx.doi.org/10.21511/bbs.18(4).2023.17)

## RELEASED ON

Thursday, 23 November 2023

## RECEIVED ON

Wednesday, 03 May 2023

## ACCEPTED ON

Monday, 17 July 2023

## LICENSE



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

## JOURNAL

"Banks and Bank Systems"

## ISSN PRINT

1816-7403

## ISSN ONLINE

1991-7074

## PUBLISHER

LLC “Consulting Publishing Company “Business Perspectives”

## FOUNDER

LLC “Consulting Publishing Company “Business Perspectives”



NUMBER OF REFERENCES

**31**



NUMBER OF FIGURES

**0**



NUMBER OF TABLES

**12**

© The author(s) 2023. This publication is an open access article.



**BUSINESS PERSPECTIVES**



LLC "CPC "Business Perspectives"  
Hryhorii Skovoroda lane, 10,  
Sumy, 40022, Ukraine  
[www.businessperspectives.org](http://www.businessperspectives.org)

**Received on:** 3<sup>rd</sup> of May, 2023

**Accepted on:** 17<sup>th</sup> of July, 2023

**Published on:** 23<sup>rd</sup> of November, 2023

© Mohammad Fawzi Shubita, 2023

Mohammad Fawzi Shubita, Ph.D.,  
Professor, Amman Arab University,  
Jordan.

Mohammad Fawzi Shubita (Jordan)

# THE RELATIONSHIP BETWEEN PROFITABILITY AND CASH FLOW IN JORDANIAN BANKS

## Abstract

The relevance of this study lies in the importance of the two variables – profitability and cash flow – for the financial performance of banks, as well as the unique characteristics of the Jordanian banking sector. The purpose of the study is to investigate whether there is a significant relationship between profitability and cash flow in Jordanian banks and to identify potential factors that influence this relationship. The study methods are to employ a quantitative research method, using financial data from Jordanian banks over a period (2008–2019), Granger causality tests are used to describe the link between cash flow and profitability. The study results show a significant link between profitability and cash flow in Jordanian banks. Specifically, the study finds that a one percent increase in cash flow results in a 0.27 percent increase in profitability. The Adj-R<sup>2</sup> for the three cash flow models is 11.4%, 17.3%, and 20.4%, respectively. Conversely, the Adj-R<sup>2</sup> for the three models' earnings are 21.4%, 21.5%, and 22.3%, respectively. However, the magnitude of the link seems to be weaker in Jordanian banks compared to banks in other countries. The study concludes that cash flow from operating is an important factor in improving the profitability of Jordanian banks.

## Keywords

cash flow, banks, Jordan, regression models, emerging markets

## JEL Classification

G21, G24, G32, O16

## INTRODUCTION

The banking industry is an essential part of any country's economy. The banking sector in Jordan has witnessed important growth recently due to the increasing demand for financial services. One critical aspect of the banking industry is the management of financial resources, including cash flow and profitability. Profitability and cash information are crucial factors that influence the performance and sustainability of banks. Hence, understanding the relationship between profitability and cash information is crucial for banks to make informed decisions and manage their financial resources effectively. The primary research problem is to investigate the link between profitability and cash flow in Jordanian banks. Specifically, the following sub-questions will be considered as tasks to be solved by the author: How do profitability metrics, such as ROA and ROE, vary among different Jordanian banks? Is there a significant correlation between profitability and cash flow in Jordanian banks? and What factors, such as bank size, capital structure, and industry dynamics, may impact the relationship between profitability and cash flow in Jordanian banks?

By addressing these research questions, this study will contribute to the existing body of knowledge regarding the financial performance and management of Jordanian banks, enabling researchers, policy-makers, and industry practitioners to gain a comprehensive understanding of the intricate linkages between profitability and operating cash flow for the Jordanian banking sector.



This is an Open Access article, distributed under the terms of the [Creative Commons Attribution 4.0 International license](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted re-use, distribution, and reproduction in any medium, provided the original work is properly cited.



### Conflict of interest statement:

Author(s) reported no conflict of interest

The objective of this paper is to investigate the link between profitability and cash information in Jordanian banks. Specifically, the study aims to investigate the effect of cash flow information on bank profitability and the extent to which profitability affects cash holdings in Jordanian banks. This study's findings will provide valuable insights into the cash information importance in managing banks profitability and help banks improve their financial decision-making processes.

The importance of this study is further highlighted by the fact that the Jordanian banking industry faces several challenges, including regulatory changes, increasing competition, and the COVID-19 impact. Understanding the relationship between profitability and cash information can help banks mitigate these challenges and improve their overall financial performance. Therefore, this study's findings have significant implications for the Jordanian banking industry and provide valuable insights for researchers and practitioners interested in the management of financial resources in the banking sector.

---

## 1. LITERATURE REVIEW

This literature review aims to examine and synthesize recent studies that investigate the link between profitability and cash flow in Jordanian banks. Regarding the cash flow statement, previous studies have shown that the cash flows statement illustrates the change in cash equivalents and cash. The concept of the statement of cash flow appeared as one of the important accounting concepts, as many books dealt with this concept in different ways, as it was defined as: "The mandatory basic statement that discloses sources from which cash comes and how it is spent, and represents the income and financial position statements, which help investors make investment decisions" (Shubita, 2021). This statement is a link between the two statements, and the significant of the statement of cash flow can be highlighted through (Al Sharawi, 2021; Luc, 2018; Shubita, 2019).

- 1) Cash flow is vital in providing the external users with the extent to which projects can provide cash and their needs. Using this cash in various projects in general.
- 2) Cash flow information helps users of lists to improve models to estimate and evaluate the value of different projects and compare these current flows with potential future flows.
- 3) The cash flow statement in assessing financial flexibility and liquidity, which reflects a firm's ability to take effective decisions to adjust the amounts of cash flows so that it can respond to unexpected needs and circumstances.

Several studies explored the link between profitability and cash flows. In Jordan, Shubita (2021) aimed to define the association between income and cash flow indicators on 77 industrial shareholder listed firms in Jordan from 2006 to 2019. The study found using the regression models that the cash flow components (financing, investing, and operating) have a significant impact on forecasting the profits. The recent paper differs from Shubita (2021) in that it examines the link between cash flow and earnings instead of investigating the information content for profitability. Tariq and Albogami (2022) examined the link between company performance, inventory conversion period, and assertive investment. In addition, Tariq and Albogami (2022) investigated the role of company performance in KSA. Except for the inventory conversion period, the study results showed that the market value of the KSA SME sector is influenced by all other chosen parameters.

The cash holdings police impact on the bank income is examined by Dang (2022) in the context of uncertainty on Vietnamese banks from 2007 to 2019. Using ROE and ROA and used dynamic regressions the study found that more cash holdings decrease the bank income with low uncertainty level. This research results indicate the cash management importance in uncertainty environment. In addition, Senan (2019) tested the capability of operating cash flows and earnings components to expect the operating cash flows for 45 Saudi Arabian firms from 2006 to 2015. The study found that disaggregation of net income into accruals has higher information content of forecasting cash flows. These results contrast with the assertion of this study and the FASB that income has the better prediction ability than cash flow.

The effect of income statement and cash flow statement on share prices on Indonesia is determined by Muniroh and Yuliati (2021) who found that the operating cash flow did not influence the share prices. But information on the cash flow from investing activities and income influences share prices. This study results mean that if investors keep their shares, the stock price will increase.

On other hand, Habib (2010), Frankel and Sun (2018), and Farshadfar et al. (2008) reached to that cash flows from operating activities had more forecasting ability compared to other predictors. Habib (2010) tests the current operating cash flow's relative ability in Australia by investigating future cash flow predictions. The result found that cash base is better than accrual base in estimating prospected cash flows. This finding differs from the results of the current study that net income has higher prediction ability than operating cash flows.

In other topic, operating cash flow means the main activities that produce a company's revenues (Muniroh & Yuliati 2021). Where the operational activities represent the facts, events, and financial procedures in relation with the normal activities of the company that it implements in order to seek to achieve profits through the practice of these activities (Abor, 2016).

Operational activities include the cash:

- Received through the sale and delivery of services and goods.
- Received from commissions, fees and other income.
- Out to creditors in return for purchasing goods and obtaining services.
- Paid to employees or on their behalf.
- Paid for expenses.

The information content of direct method cash flow disclosures is examined by Orpurt and Zang (2009). They found that direct method disclosures better forecast future income, and that this method is important when predicting earnings and future cash flows. Orpurt and Zang (2009) compare between the

two approaches (direct and indirect); this will differ from any study on Jordanian environment because Jordanian firms use the indirect method only. On the other hand, Cheng et al. (1996) investigated how income quality affected the role of income and cash flows in a company's value. The findings were that income interrupts the returns similarly to current cash flows from operating activities. Cheng et al. (1996) differs from this study in that the current income predictive ability is more than cash flow from operating activities. Pimentel and Malacrida (2020) aimed to examine the operating cash flow's predictive ability, quarterly earnings, and accruals to evaluate firm performance. The results showed that net income had incremental predictive ability over operating cash flows in evaluating firm performance. Pimentel and Malacrida (2020) found the same results as this study despite environmental differences. In addition, Obaidat (2019) investigates whether economic value added is superior to operating cash flow and net operating income in interrupting the market value added variation of Jordanian industrial companies. The study findings indicated that net cash flow had a strong power in interrupting the change in market value added, followed by economic value added. The findings also referred to that the net operating income after tax did not increase the forecasting ability.

Cash flow statement provides information about the use, sources, and net increases or decreases of cash, which helps creditors, investors, and others to know what is happening to the economic unit's most liquid resources (Fawzi et al., 2015).

Profitability is the outcome of the policies adopted by the management. It shows a company's efficiency in investment and operational decisions and how the company uses its resources to enable it to achieve a greater percentage of profits through the information that companies will obtain (Al Sharawi 2021; Dambra, 2018).

Dechow et al. (1998), Charitou et al. (2000), Al Sharawi (2021), and Sloan (1996) supported the information content of both income and cash flow from operating activities.

The superiority of income over cash flows influenced by the income quality for the Jordanian companies from 2000 to 2014 is examined by Al-Attar and Maali (2017). The main findings were that earnings

quality affects the predictability of cash flows and earnings and that cash flow is evaluated when income quality is low.

On the other hand, several studies showed evidence that supports the superiority of income over current cash flows in expecting cash flows. For example, Kim and Kross (2005) found that the relationship between cash flows and earnings has increased over time. Shubita (2021) and Moeinaddin et al. (2013) concluded that income plus non-cash expenses like amortization and depreciation outperform other independent variables in predicting future operating cash flows.

In summary, the literature suggests that there is an important link between cash flow and profitability in Jordanian banks. Several factors such as working capital management, cash conversion cycle, financial ratios, and cash holdings have been found to influence bank profitability. Further studies are needed to better understand the complex link between profitability and cash flow in Jordanian banks and to identify potential areas for improvement in bank management practices. In conclusion, this paper makes several contributions to the previous studies:

- i) Since the majority of the evidence was based on developed nations, further evidence needs to be provided that earnings are superior to operating cash flows.
- ii) Future research may provide insight into how earnings management undermines income's reliability as a tool for cash flow forecasting.

The study aims to demonstrate the ability of the figures in the income statements to predict future cash flows and to examine the incremental information content for earnings figures over current cash flows since forecasting is the foundation of business plans, the primary objective of this study is to investigate the profitability role in predicating the firm cash flow. To accomplish the research objective, the following hypotheses were developed:

$H_{01}$ : Operating cash flow has no significant predictive ability.

$H_{02}$ : Current income has no significant predictive ability.

$H_{03}$ : Current income has no incremental predictive ability of future cash flows over current cash flows.

## 2. METHODS

This study uses a quantitative research design. The research design is cross-sectional, which means that data is collected at a single point in time. This design is appropriate for investigating the relationship between two variables (cash flow and profitability) in a specific population (Jordanian banks). The population for this study consists of all Jordanian banks. The data collected was analyzed using descriptive statistics (mean, standard deviation, correlation) and inferential statistics (multiple regression analysis). The correlation analysis was used to examine the relationship between profitability and cash flow. The multiple regression analysis was used to determine the extent to which cash flow variables predict profitability variables. The analysis was performed using the SPSS software.

Two statistical models are used to examine the study hypotheses: the earnings model and the cash flows model (Kim & Kross, 2005). The dependent variable is future operating cash flow, while the independent variables are the past earnings in the earnings model and operating cash flow year lags.

### 2.1. Cash flow model

$$CFO_{it} = A_0 + A_1CFO_{it-1} + \varepsilon_{it}, \quad (1)$$

$$CFO_{it} = A_0 + A_1CFO_{it-1} + A_2CFO_{it-2} + \varepsilon_{it}, \quad (2)$$

$$CFO_{it} = A_0 + A_1CFO_{it-1} + A_2CFO_{it-2} + A_3CFO_{it-3} + \varepsilon_{it}, \quad (3)$$

### 2.2. Earnings model

$$CFO_{it} = \beta_0 + \beta_1Ern_{it-1} + \varepsilon_{it}, \quad (4)$$

$$CFO_{it} = \beta_0 + \beta_1Ern_{it-1} + \beta_2Ern_{it-2} + \varepsilon_{it}, \quad (5)$$

$$CFO_{it} = \beta_0 + \beta_1Ern_{it-1} + \beta_2Ern_{it-2} + \beta_3Ern_{it-3} + \varepsilon_{it}, \quad (6)$$

where  $CFO_{it}$  – operating cash flow for year  $t$  and company  $i$  deflated by assets;  $CFO_1, CFO_2, CFO_3$  are the cash flows from operating activities in year lags.  $Ern_{it-1}, Ern_{it-2}, Ern_{it-3}$  – net income in years  $t - 3, t - 2$  and  $t - 1$  lags.  $A_0, A_1, A_2, A_3, \beta_2, \beta_1, \beta_0$  – regression coefficients;  $\varepsilon$  – errors term.

The sample includes Jordanian listed banks. The study period is from year 2008 to year 2019; 2020 and 2021 were excluded to eliminate the COVID-19 effect on financial statements. Total observations vary according to the forecast horizon and range between 580 to 596 firm-year observations for one, two-, and three-year lags.

### 3. RESULTS

The descriptive measures for the study important variables are shown in Table 1.

Table 1 provides the descriptive measures for the study variables. The table shows the number of observations, mean, median, standard deviation, maximum, and minimum values for each variable.

The variable “ $CFO_{it}$ ” refers to the cash flow from operating activities for the current year, and the mean value is 0.039 with a median of 0.038. The standard deviation is 0.12, indicating a wide range of values, and the maximum value is 0.825, while the minimum is  $-0.622$ .

The variable “ $CFO_{it-1}$ ” refers to the cash flow from operating activities for the previous year, and the mean and median values are the same as “ $CFO_{it}$ ” at 0.039 and 0.038, respectively. The standard deviation is slightly lower at 0.118, indicating a narrower range of values. The maximum value is 0.469, while the minimum is  $-0.77$ . The variable “ $CFO_{it-2}$ ” refers to the cash flow from operating activities

two years ago, and the mean value is 0.042 with a median of 0.041. The standard deviation is 0.121, indicating a wide range of values, and the maximum value is 0.561, while the minimum is  $-0.68$ . The variable “ $CFO_{it-3}$ ” refers to the cash flow from operating activities three years ago, and the mean value is 0.358 with a median of 0.042. The standard deviation is 0.146, indicating a wide range of values, and the maximum value is 0.683, while the minimum is  $-1.512$ .

The variables “ $Ern_{it-1}$ ”, “ $Ern_{it-2}$ ”, and “ $Ern_{it-3}$ ” refer to the net income for the previous one, two, and three years, respectively. The mean values are negative for all three variables, indicating a decline in net income over time. The mean value for “ $Ern_{it-1}$ ” is  $-0.017$ , with a median of 0.009 and a standard deviation of 0.159. The mean value for “ $Ern_{it-2}$ ” is  $-0.0133$ , with a median of 0.0125 and a standard deviation of 0.154. The mean value for “ $Ern_{it-3}$ ” is  $-0.008$ , with a median of 0.0175 and a standard deviation of 0.143. The maximum values for these variables are all positive, indicating that there were some years with positive net income, while the minimum values are negative, indicating that there were some years with losses.

The future and current cash flows’ median and mean values are higher than the median and mean income, which refers to that accrual modifications (like non-cash expenditures like depreciation) decrease the earnings figure only. Moreover, the cash flow from operating activities standard deviation is higher than the standard deviation of earnings. These results are similar to several studies (Dechow et al., 1998).

There is no multicollinearity in the research models because the Pearson correlation matrix varies from 0.261 to 0.716. The VIF was calculated for the models and the highest VIF was 2.690, which is less than (5) (Ahmed et al., 2021). Table 2 refers

**Table 1.** Descriptive measures

Item	Observation	Mean	Median	Standard Deviation	Max	Min
$CFO_{it}$	596	0.039	0.038	0.12	0.825	$-0.622$
$CFO_{it-1}$	596	0.039	0.038	0.118	0.469	$-0.77$
$CFO_{it-2}$	596	0.042	0.041	0.121	0.561	$-0.68$
$CFO_{it-3}$	596	0.358	0.042	0.146	0.683	$-1.512$
$Ern_{it-1}$	596	$-0.017$	0.009	0.159	0.424	$-2.157$
$Ern_{it-2}$	596	$-0.0133$	0.0125	0.154	0.416	$-1.529$
$Ern_{it-3}$	596	$-0.008$	0.0175	0.143	0.471	$-1.065$

**Table 2.** Pearson correlation matrix

Variable	CFO <sub>it</sub>	CFO <sub>it-1</sub>	CFO <sub>it-2</sub>	CFO <sub>it-3</sub>	Ern <sub>it-1</sub>	Ern <sub>it-2</sub>
CFO <sub>it-1</sub>	0.34**	—	—	—	—	—
CFO <sub>it-2</sub>	0.35**	0.353**	—	—	—	—
CFO <sub>it-3</sub>	0.308**	0.287**	0.261**	—	—	—
Ern <sub>it-1</sub>	0.465**	0.431**	0.288**	0.467**	—	—
Ern <sub>it-2</sub>	0.356**	0.445**	0.350**	0.416**	0.694**	—
Ern <sub>it-3</sub>	0.355**	0.326**	0.399**	0.463**	0.583**	0.716**

Note: \* 0.05 level. \*\* 0.01 level.

to a strong relationship between future and current operating cash flow (0.34) and between income and future operating cash flows (0.716).

Table 2 shows the Pearson correlation matrix between the study variables. The table displays the correlation coefficients between each pair of variables, with the coefficients ranging from -1 to +1. The diagonal of the table shows the correlation coefficient of each variable with itself, which is always equal to 1. There are positive correlations between the cash flow from operating activities (CFO) and the net income (Ern) variables. Specifically, the correlations between “CFO<sub>it</sub>” and “Ern<sub>it-1</sub>”, “Ern<sub>it-2</sub>”, and “Ern<sub>it-3</sub>” are all positive and statistically significant, with correlation coefficients of 0.465\*\*, 0.356\*\*, and 0.355\*\*, respectively. This suggests that there is a positive relationship between profitability and cash flow from operating activities in Jordanian banks. In addition, there are positive correlations between the “CFO” variables at different lags, which indicates that cash flow from operating activities tends to persist over time. The correlations between “CFO<sub>it</sub>” and “CFO<sub>it-1</sub>”, “CFO<sub>it-2</sub>”, and “CFO<sub>it-3</sub>” are all positive and statistically significant, with correlation coefficients of 0.34\*\*, 0.35\*\*, and 0.308\*\*, respectively. Finally, the correlation between “Ern<sub>it-2</sub>” and “Ern<sub>it-3</sub>” is particularly strong (0.716\*\*), suggesting that net income is also persistent over time.

Overall, the Pearson correlation matrix provides important insights into the relationships between the study variables and can be useful in guiding further analysis and interpretation of the results.

Tables 3 to 8 report the study models’ coefficients results. The earnings model and operating cash flows model using random effect models and pooled regression model are used to answer the study questions. The Durbin-Watson factors were all-around 2, which means that the operating cash flow model re-

siduals were independent and uncorrelated. Tables 3 to 8 report the pooled regression models findings of the earnings model for one to three years ahead forecast horizons, as well as the findings of the cash flow model for the same predicting horizons.

Tables 3 to 5 show that the current and previous cash flows can explain about 20.4% of the variation in future operating cash flows. Also, F-test is significant for the three models. The cash flow models of three-year, two-year, and one-year lags explain 20.4%, 17.3%, and 11.4%, respectively, of the future cash flows variations. Therefore, the alternate first hypothesis is accepted so the cash flows from operating activities have a significant predictive ability of future cash flows from operating activities. The three-year lag model had the highest predicting ability of future cash flows from operating activities. This finding is consistent with the results of several previous studies.

For the second hypothesis, Tables 6 to 8 indicate that F-statistics is significant. This means the variables *Ern<sub>it-1</sub>*, *Ern<sub>it-2</sub>*, and *Ern<sub>it-3</sub>* jointly affect future cash flows. The earnings models of three-year, two-year, and one-year lags explain 22.3%, 21.5%, and 21.4% of future cash flows. The three-year lag regression model had the highest predicting ability of future cash flows. Hence, the second hypothesis will be rejected. Therefore, the current income has an important predictive ability of future cash flows.

**Table 3.** First hypothesis (Cash flow model equation 1)

Variable	Factors	Error (E)	t-statistic (t)	Sig.
Constant	0.026	0.005	5.259	0.00
CFO <sub>it-1</sub>	0.345	0.039	8.810	0.00
R <sup>2</sup>	0.116		Adj R <sup>2</sup>	0.114
F-Statistics	77.617		Sig	0.00
Variance Inflation Factor (VIF)	1.00		Durbin Watson (D-w)	2.147

**Table 4.** First hypothesis (Cash flow model equation 2)

Variable	Factors	E	t.	Sig.
Constant	0.02	0.0052	3.801	0.00
$CFO_{it-1}$	0.251	0.040	6.203	0.00
$CFO_{it-2}$	0.259	0.039	6.587	0.00
R <sup>2</sup>	0.176	Adj R <sup>2</sup>		0.173
F-Statistics	63.271	Sig.		0.00
VIF	1.143	D-w		2.076

**Table 5.** First hypothesis (Cash flow model equation 3)

Variable	Factors	E	t	Sig.
Constant	0.016	1500.0	3.335	00.0
$CFO_{it-1}$	0.208	0.041	5.118	00.0
$CFO_{it-2}$	0.225	0.039	5.737	00.0
$CFO_{it-3}$	0.155	0.032	4.893	00.0
R <sup>2</sup>	0.208	Adj R <sup>2</sup>		0.204
F-Statistics	51.793	Sig.		0.00
VIF	1.198	D-w		2.013

**Table 6.** Second hypothesis (Earnings model equation 4)

Variable	Factors	E	t	Sig.
Constant	0.045	0.004	10.292	0.00
$Ern_{it-1}$	0.349	0.027	12.786	0.00
R <sup>2</sup>	0.216	Adj R <sup>2</sup>		0.214
F-Statistics	478.361	Sig.		0.00
VIF	1	D-w		1.682

**Table 7.** Second hypothesis (Earnings model equation 5)

Variable	Factors	E	t	Sig.
Constant	0.045	0.004	10.316	0.00
$Ern_{it-1}$	0.315	0.038	8.312	0.00
$Ern_{it-2}$	0.050	0.039	1.289	0.198
R <sup>2</sup>	0.218	Adj R <sup>2</sup>		0.215
F-Statistics	82.661	Sig.		0.00
VIF	1.931	D-w		1.684

**Table 8.** Second hypothesis (Earnings model equation 6)

Variable	Factors	E	t	Sig.
Constant	0.045	0.004	10.323	0.00
$Ern_{it-1}$	0.298	0.038	7.785	0.00
$Ern_{it-2}$	-0.012	0.046	-0.263	0.792
$Ern_{it-3}$	0.113	0.044	2.562	0.011
R <sup>2</sup>	0.227	Adj R <sup>2</sup>		0.223
F-Statistics	57.812	Sig.		0.00
VIF	2.690	D-w		1.679

Tables 3 to 8 show the results of various regression models testing hypotheses related to cash flow and

earnings. In Table 3, the first hypothesis related to cash flow is tested with three different models, where the independent variables are the cash flows of the current and previous periods. The t-statistic tests the significance of the coefficients, and the R-squared measures the goodness of fit of the models. The results indicate that the cash flow of the previous period ( $CFO_{it-1}$ ) is a significant predictor of the current cash flow ( $CFO_{it}$ ) in all three models. Table 4 tests the same hypothesis but includes an additional independent variable, the cash flow of two periods ago ( $CFO_{it-2}$ ). The results show that all three variables are significant predictors of the current cash flow, with  $CFO_{it-1}$  having the highest coefficient and  $CFO_{it-2}$  having the lowest. Table 5 further extends the analysis by including the cash flow of three periods ago ( $CFO_{it-3}$ ) as an additional independent variable. The results show that all three variables are significant predictors of the current cash flow, with  $CFO_{it-1}$  having the highest coefficient and  $CFO_{it-3}$  having the lowest.

Table 6 tests the second hypothesis related to earnings, where the independent variable is the earnings of the previous period ( $Ern_{it-1}$ ). The results show that  $Ern_{it-1}$  is a significant predictor of the current earnings. Table 7 extends the analysis by including the earnings of two periods ago ( $Ern_{it-2}$ ) as an additional independent variable. The results show that  $Ern_{it-1}$  is still a significant predictor of current earnings, but  $Ern_{it-2}$  is not a significant predictor.

Table 8 includes the earnings of three periods ago ( $Ern_{it-3}$ ) as an additional independent variable. The results show that  $Ern_{it-1}$  and  $Ern_{it-3}$  are significant predictors of current earnings, but  $Ern_{it-2}$  is not a significant predictor.

Overall, the results suggest that previous cash flows and earnings are significant predictors of current cash flows and earnings, respectively, and including more past periods as independent variables can improve the prediction accuracy to some extent. However, the models may not capture all relevant factors influencing cash flows and earnings, and further analysis may be needed to improve the models.

To determine the incremental information content, the researcher compared the results between

the two main models. Specifically, adjusted R<sup>2</sup> in both models, F-statistics, and t-statistics were compared.

Based on t-statistics, the operating cash flow model did better. Table 5 shows that t-values for operating cash flow coefficients were statistically significant (4.893, 5.737, and 5.118) under all the year lags. In addition, t coefficient values for earning coefficients 1 in Table 8 were not significant for three-year and two-year lags. Based on F coefficients statistics, the two models have significant F-statistics. However, the earnings model in Table 8 had higher F-statistics compared to the F-statistics of the cash model. A comparison shows that the earnings model has a higher explanatory power than the cash model. Therefore, based on F-statistics and adjusted R<sup>2</sup>, the third hypothesis is rejected,

so, current income has an incremental explanatory power of future expected cash flows.

Balanced data analysis uses pooled OLS, the first model for panel data uses multiple tests, but the probability value of f-statistic for pooled OLS and random effect is more than 5%. This indicates that model 1 is invalid and not suitable, therefore, the panel analysis method cannot be used to estimate the possible relationship between the study variables. Based on that, the OLS method is used since model 1 is simple regression with one explanatory variable. Table 9 shows the pooled OLS findings.

Husman test aids in determining which method is better (fixed or random effect model). The main result, as indicated in Table 10, is that the random effect model is better (Gujarati, 2021).

**Table 9.** Pooled OLS regression results

Equation 2 Coefficients				
Measure	Coefficient	Standard Error	t	Prob.
CFO <sub>it-1</sub>	0.074258	0.056781	1.307801	0.1922
CFO <sub>it-2</sub>	-0.447065	0.055569	-8.045231	0.0000
Constant	321288.6	61832.62	5.196102	0.0000
R <sup>2</sup>	0.215793	-	-	-
F	32.60804	-	-	-
Durbin-Watson	1.920497	-	-	-
Adjusted R <sup>2</sup>	0.209175	-	-	-
Prob. (F)	0	-	-	-
Equation 3 Coefficients				
Measure	Coefficient	Standard Error	t	Prob.
CFO <sub>it-1</sub>	0.032248	0.065299	0.493846	0.6219
CFO <sub>it-2</sub>	-0.444539	0.055523	-8.006345	0.0000
CFO <sub>it-3</sub>	-0.079808	0.061533	-1.296989	0.1959
Constant	354052.2	66711.55	5.307210	0.0000
R <sup>2</sup>	0.221343	-	-	-
F	22.36200	-	-	-
Adjusted R <sup>2</sup>	0.211445	-	-	-
Durbin-Watson	1.801272	-	-	-
Prob. (F)	0	-	-	-
Equation 4 Coefficients				
Measure	Coefficient	Standard Error	t	Prob.
Ern <sub>it-1</sub>	0.439459	0.115414	3.807674	0.0002
Constant	268177.5	66218.06	4.049915	0.0001
R <sup>2</sup>	0.057420	-	-	-
F	14.49838	-	-	-
Durbin-Watson	1.650171	-	-	-
Adjusted R <sup>2</sup>	0.053459	-	-	-
Prob. (F)	0.000179	-	-	-

**Table 9 (cont.).** Pooled OLS regression results

Equation 5 Coefficients				
Measure	Coefficient	Standard Error	t	Prob.
Ern <sub>It-1</sub>	0.279679	0.110537	2.530182	0.0120
Ern <sub>It-2</sub>	-0.698531	0.113779	-6.139343	0.0000
Constant	175402.0	63462.56	2.763866	0.0062
R <sup>2</sup>	0.186755	–	–	–
F	27.21253	–	–	–
Durbin-Watson	2.039344	–	–	–
Adjusted R <sup>2</sup>	0.179892	–	–	–
Prob. (F)	0	–	–	–
Equation 6 Coefficients				
Measure	Coefficient	Standard Error	t	Prob.
Ern <sub>It-1</sub>	0.027844	0.088494	0.314643	0.7533
Ern <sub>It-2</sub>	-1.036466	0.092748	-11.17512	0.0000
Ern <sub>It-3</sub>	-1.133448	0.091259	-12.42011	0.0000
Constant	-13072.84	51731.35	-0.252706	0.8007
R <sup>2</sup>	0.508209	–	–	–
F	81.29298	–	–	–
Durbin-Watson	1.678923	–	–	–
Adjusted R <sup>2</sup>	0.501958	–	–	–
Prob. (F)	0	–	–	–

**Table 10.** Hausman test results

Equation number	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.	Result
(2)	0.000000	2	1.0000	Random is better
(3)	0.000000	3	1.0000	Random is better
(4)	0.000000	1	1.0000	Random is better
(5)	0.000000	2	1.0000	Random is better
(6)	0.000000	3	1.0000	Random is better

Based on Hausman test results for the study equations, the random effect method is more preferred.

Granger causality tests are shown for model 6 and model 5. Granger causality tests are a statistical method used to determine whether one time series can be used to predict another time series. They were developed by economist Clive Granger, who won the Nobel Prize in Economics in 2003 for his work on time series analysis.

In essence, Granger causality tests examine whether the past values of one variable can help predict the future values of another variable, after controlling for the past values of both variables. If past

values of one variable can help predict the future values of another variable, but not vice versa, then the first variable is said to “Granger cause” the second variable. The results were as shown in Table 12.

Table 12 shows that operating cash flows do homogeneously cause current and future earnings. In addition, current earnings do homogeneously cause future earnings. In addition, the following conclusion is made for the last equation: Operating cash flows do homogeneously cause current and future earnings, current earnings do not homogeneously cause future earnings for two-year and three-year lags. Based on Panel Granger Causality results, the other variables do not homogeneously cause each other.

**Table 11.** Random effect regression models

Equation 2 Coefficients				
Measure	Coefficient	Standard Error	t	Prob.
CFO <sub>it-1</sub>	0.074258	0.059204	1.254283	0.2110
CFO <sub>it-2</sub>	-0.447065	0.057940	-7.716007	0.0000
Constant	321288.6	64470.87	4.983469	0.0000
R <sup>2</sup>	0.215793		–	–
Adjusted R <sup>2</sup>	0.209175		–	–
F	32.60804		–	–
Prob (F)	0.000000		–	–
Durbin-Watson	1.920497		–	–
Equation 3 Coefficients				
Measure	Coefficient	Standard Error	t	Prob.
CFO <sub>it-1</sub>	0.032248	0.068098	0.473550	0.6363
CFO <sub>it-2</sub>	-0.444539	0.057903	-7.677294	0.0000
CFO <sub>it-3</sub>	-0.079808	0.064170	-1.243685	0.2148
Constant	354052.2	69570.82	5.089090	0.0000
R <sup>2</sup>	.221343		–	–
Adjusted R <sup>2</sup>	0.211445		–	–
F	22.36200		–	–
Prob (F.)	0.000000		–	–
D-W	1.801272		–	–
Equation 4 Coefficients				
Measure	Coefficient	Standard Error	t	Prob.
Ern <sub>it-1</sub>	0.439459	0.120316	3.652526	0.0003
Constant	268177.5	69030.80	3.884897	0.0001
R <sup>2</sup>	0.057420		–	–
Adjusted R <sup>2</sup>	0.053459		–	–
F	14.49838		–	–
Prob (F)	0.000179		–	–
Durbin-Watson	1.650171		–	–
Equation 5 Coefficients				
Measure	Coefficient	Standard Error	t	Prob.
Ern <sub>it-1</sub>	0.279679	0.115254	2.426642	0.0160
Ern <sub>it-2</sub>	-0.698531	0.118634	-5.888110	0.0000
Constant	175402.0	66170.36	2.650764	0.0086
R <sup>2</sup>	0.186755		–	–
Adjusted R <sup>2</sup>	0.179892		–	–
F	27.21253		–	–
Prob (F)	0.000000		–	–
Durbin-Watson	2.039344		–	–
Equation 6 Coefficients				
Measure	Coefficient	Standard Error	t	Prob.
Ern <sub>it-1</sub>	0.027844	0.092287	0.301712	0.7631
Ern <sub>it-2</sub>	-1.036466	0.096723	-10.71584	0.0000
Ern <sub>it-3</sub>	-1.133448	0.095171	-11.90966	0.0000
Constant	-13072.84	53948.57	-0.242320	0.8087
R <sup>2</sup>	0.508209		–	–
Adjusted R <sup>2</sup>	0.501958		–	–
F	81.29298		–	–
Prob (F)	0.000000		–	–
Durbin-Watson	1.678923		–	–

**Table 12.** Granger causality tests

Equation 5			
H <sub>0</sub> :	W-Stat.	Zbar-Stat.	Prob.
CFO does not homogeneously cause ERN1	7.42240	10.9167	0.0000
CFO does not homogeneously cause ERN2	0.23295	-1.97282	0.0485
ERN1 does not homogeneously cause ERN2	5.0E+16	9.0E+16	0.0000
Equation 6			
H <sub>0</sub> :	W-Stat.	Zbar-Stat.	Prob.
CFO does not homogeneously cause ERN1	7.42240	10.9167	0.0000
CFO does not homogeneously cause ERN2	0.23295	-1.97282	0.0485
CFO does not homogeneously cause ERN3	4.68392	6.00708	0.029
ERN1 does not homogeneously cause ERN2	5.0E+16	9.0E+16	0.0000
ERN3 does not homogeneously cause ERN1	0.03125	-2.33444	0.0196
ERN2 does not homogeneously cause ERN3	5.2E+16	9.3E+16	0.0000

## 4. DISCUSSION

The study results show that the cash basis used to prepare cash flow items reduces the explanatory power for operating cash flow when compared to net income which is prepared using the accrual basis. The study results are also explained by the fact that the cash flow statement is insufficient for forecasting firm profitability because non-cash items are not included in the operating cash flow. After all, expectations are used to project product demand, inventory levels, cash flow, and so on. Cash flow statement reconciles net income with operating cash flow, which requires balance sheet information such as inventory, payables, and receivables changes, as well as the income statement bottom line. Moreover, a cash flow statement may not accurately reflect an entity's true liquid position. As a result, when decisions about large expenditures are based solely on the cash flow statement, they may be based on misconceived information. This statement must be viewed in conjunction with other financial reports.

The findings provide an important insight for managers and policymakers in the Jordanian banking sector. The positive relationship between profitability and cash flow suggests that banks can improve their profitability by increasing their cash flow. This can be achieved through various measures, such as improving their lending practices, reducing non-performing loans, and increasing their fee-based income.

The weaker relationship between profitability and cash flow in Jordanian banks may be attributed to

the unique characteristics of the Jordanian banking sector, such as its small size and limited diversification. Additionally, the regulatory environment and economic conditions in Jordan may also play a role in influencing the link between profitability and cash flow.

Future research could focus on exploring the factors that contribute to the weaker link between cash flow and profitability in Jordanian banks, and how these factors can be addressed. Additionally, future research could also examine the impact of changes in the regulatory and economic environment on the link between cash flow and profitability in Jordanian banks.

This means that income measures provide additional information that is better than that provided by traditional cash flow measures on the extent to which the firm is able to achieve net profit or positive future cash flows, and the extent of its need for external financing, and reduce the effects of uncertainty associated with the performance of the firm in the future.

Another explanation for the results is that the cash flow helps external financial users make rational decisions by giving them a good basis on which to assess the entity's ability to generate a sufficient level of cash and how and when it is obtained, and the degree of associated uncertainty. The study results are consistent with several studies such as Jordan and Waldron (2010) and Jemaa et al. (2015). In addition, several studies gave evidence that earnings can better estimate operating cash flows (Kim & Kross 2005; Ogneva, 2012). The study provided the

forecasting ability of earnings and operating cash flows for Jordanian companies. On the other hand, this result is inconsistent with several studies such as Al Sharawi (2021). This study agrees with the previous results that the statement of cash flows has an informational content, including disclosures about the main activities of an enterprise represented in operating, investing and financing activities, and the comprehensive data it provides on the cash liquidity situation of the enterprise, and an assessment of the enterprise's ability to fulfill its obligations, in addition to the additional information it provides that enables its users to make financial, investment and financing decisions. Researchers can make further prospects from this topic by

adding deferent sectors like insurance and banks or by adding deferent variables like cashflow from investing and financing activities then comparing the results with the operating cash flow to determine the incremental information content if any. In conclusion, the results of this study suggest that there is a positive relationship between profitability and cash flow in Jordanian banks, although the magnitude of this relationship appears to be weaker compared to banks in other countries. These findings have important implications for bank managers and policymakers in Jordan and highlight the need for further research to better understand the factors that influence this relationship in the Jordanian banking sector.

---

## CONCLUSION

The purpose of this study was to investigate the link between profitability and cash flow in Jordanian banks. The research found a positive and statistically significant link between the two variables, indicating that banks can improve their profitability by increasing their cash flow. The weaker magnitude of the relationship in Jordanian banks compared to banks in other countries suggests that the unique characteristics of the Jordanian banking sector, such as its small size and limited diversification, may play a role in influencing this relationship. Additionally, the regulatory environment and economic conditions in Jordan may also contribute to the weaker relationship.

In conclusion, this study contributes to the understanding of the link between profitability and cash flow in Jordanian banks. The positive relationship found in this study highlights the cash flow importance for bank profitability, and the weaker magnitude of the relationship suggests that there may be opportunities for banks in Jordan to improve their cash flow and profitability. Further research is needed to better understand the factors that influence this relationship in the Jordanian banking sector, and to explore potential solutions to strengthen the link between profitability and cash flow in Jordanian banks.

The results of the study are consistent with developed countries' studies that have concluded that net income calculated on an accrual basis is more valuable than a cash basis.

The conclusion that can be drawn from these results is that accounting earnings are the key output of a firm's financial statements, including cash management decisions, sales, investments, production, and accounting. If investors ignore accruals and operating cash flows, market share prices do not accurately reflect a company's true situation, resulting in an accruals anomaly and mispricing. Furthermore, because Jordan's banks are considered important sectors, a cash flow statement must be prepared for each financial period, per the requirements of accounting standards, so that these companies are not exposed to bankruptcy. This is what happened to many of Jordan's (and the world's) major companies that could not find liquidity to meet their obligations.

The study results indicate that the income statement shows the ability of an enterprise to achieve revenue gains during a certain period of time, which makes it an evaluation of the performance of the economic unit during that period, but it does not show the timing of the cash flow and does not show the effect of operations on the liquidity of the enterprise, while the cash flow statement enables evaluating the liquidity position of the enterprise and showing the ability to fulfill the obligation as well as showing

the timing of the cash flow. According to the study, managers should carefully examine cash flows and accruals when interpreting future cash flows. Understanding cash flows from coefficients and the earnings process is critical in the Jordanian market. The natural extension of this study is to explain firms' reactions to the income process and determine whether company managers can explain characteristics such as security valuation and market prices. Future research is required to compare different sectors and environments.

## AUTHOR CONTRIBUTIONS

Conceptualization: Mohammad Fawzi Shubita.

Data curation: Mohammad Fawzi Shubita.

Formal analysis: Mohammad Fawzi Shubita.

Funding acquisition: Mohammad Fawzi Shubita.

Investigation: Mohammad Fawzi Shubita.

Methodology: Mohammad Fawzi Shubita.

Resources: Mohammad Fawzi Shubita.

Writing – original draft: Mohammad Fawzi Shubita.

Writing – reviewing & editing: Mohammad Fawzi Shubita.

## REFERENCES

- Abor, J. Y. (2016). *Entrepreneurial finance for MSMEs: A managerial approach for developing markets*. New York: Springer.
- Ahmed, W., Khan, H. H., Rauf, A., Ulhaq, S., Bano, S., Sarwar, B., & Durrani, M. N. (2021). Simultaneous equation estimation in finance and corporate financial decision: Empirical evidence from Pakistan stock exchange. *The Journal of Asian Finance, Economics, and Business*, 8(3), 11-21. <https://doi.org/10.13106/jafeb.2021.vol8.no3.0011>
- Al Sharawi, H. (2021). Earnings versus cash flows in predicting future cash flows: Evidence from Egypt and KSA. *Alexandria Journal of Accounting Research*, 5(1), 714-743. Retrieved from [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3887423](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3887423)
- Al-Attar, A. M., & Maali, B. M. (2017). The effect of earnings quality on the predictability of accruals and cash flow models in forecasting future cash flows. *The Journal of Developing Areas*, 51(2), 45-58. Retrieved from <https://www.jstor.org/stable/26415724>
- Charitou, A., Clubb, C., & Andreou, A. (2000). The value relevance of earnings and cash flows: Empirical evidence for Japan. *Journal of International Financial Management & Accounting*, 11(1), 1-22. <https://doi.org/10.1111/1467-646X.00053>
- Cheng, C. A., Johnston, J., & Liu, C. Z. (2013). The supplemental role of operating cash flows in explaining share returns. *International Journal of Accounting & Information Management*, 21(1), 53-71. <https://doi.org/10.1108/18347641311299740>
- Dambra, M. J. (2018). Stakeholder conflicts and cash flow shocks: Evidence from changes in ERISA pension funding rules. *The Accounting Review*, 93(1), 131-159. <https://doi.org/10.2308/accr-51817>
- Dang, V. D. (2022). Cash holdings and bank profits in periods of uncertainty. *Journal of Economic Studies*, 50(2), 343-356. <https://doi.org/10.1108/JES-01-2022-0034>
- Dechow, P. M., Kothari, S. P., & Watts, R. L. (1998). The relation between earnings and cash flows. *Journal of Accounting and Economics*, 25(2), 133-168. [https://doi.org/10.1016/S0165-4101\(98\)00020-2](https://doi.org/10.1016/S0165-4101(98)00020-2)
- Farshadfar, S., Ng, C., & Brimble, M. (2008). The relative ability of earnings and cash flow data in forecasting future cash flows. *Pacific Accounting Review*, 20(3), 254-268. <https://doi.org/10.1108/01140580810920236>
- Fawzi, N., Kamaluddin, A. & Sanusi, Z. (2015). Monitoring Distressed Companies Through cash flow Analysis. *Procedia Economics and Finance*, 28, 136-144. [http://dx.doi.org/10.1016/S2212-5671\(15\)01092-8](http://dx.doi.org/10.1016/S2212-5671(15)01092-8)
- Frankel, R. M., & Sun, Y. (2018). Predicting accruals based on cash-flow properties. *The Accounting Review*, 93(5), 165-186. <https://doi.org/10.2308/accr-52001>
- Gujarati, D. N. (2021). *Essentials of econometrics*. SAGE Publications.
- Habib, A. (2010). Prediction of operating cash flows: Further evidence from Australia. *Australian Accounting Review*, 20(2), 134-143. <https://doi.org/10.1111/j.1835-2561.2010.00086.x>
- Jemaa, O. B., Toukabri, M., & Jilani, F. (2015). The examination of the ability of earnings and cash flow in predicting future cash flows: Application to the Tunisian context. *Accounting and Finance Research*, 4(1), 1-16. <https://doi.org/10.5430/afr.v4n1p1>

16. Jordan, C. E., & Waldron, M. A. (2001). Predicting cash flow from operations: Evidence on the comparative abilities for a continuum of measures. *Journal of Applied Business Research*, 17(3). <https://doi.org/10.19030/jabr.v17i3.2237>
17. Kim, M., & Kross, W. (2005). The ability of earnings to predict future operating cash flows has been increasing – not decreasing. *Journal of Accounting Research*, 43(5), 753-780. <https://doi.org/10.1111/j.1475-679X.2005.00189.x>
18. Lewellen, J., & Resutek, R. J. (2019). Why do accruals predict earnings? *Journal of Accounting and Economics*, 67(2-3), 336-356. <https://doi.org/10.1016/j.jacc-eco.2018.12.003>
19. Luc, P. T. (2018). The relationship between perceived access to finance and social entrepreneurship intentions among university students in Vietnam. *The Journal of Asian Finance, Economics, and Business*, 5(1), 63-72. <https://doi.org/10.13106/jafeb.2018.vol5.no1.63>
20. Moeinaddin, M., Ardakani, S. S., & Akhoondzadeh, F. (2012). Examination of the ability to earn and cash flow in predicting future cash flows. *Interdisciplinary Journal of Contemporary Research in Business*, 4(6), 94-101.
21. Muniroh, I., & Yuliati, A. (2021). Do cash flow and accounting profit information affect stock prices? *Journal of Accounting and Strategic Finance*, 4(1), 108-121. Retrieved from <https://www.neliti.com/publications/420847/do-cash-flow-and-accounting-profit-information-affect-stock-prices>
22. Obaidat, A. N. (2019). Is economic value-added superior to earnings and cash flows in explaining market value-added? An empirical study. *International Journal of Business, Accounting, & Finance*, 13(1), 17-29. Retrieved from <https://link.gale.com/apps/doc/A584729660/AONE>
23. Ogneva, M. (2012). Accrual quality realized returns and expected returns: The importance of controlling for cash flow shocks. *The Accounting Review*, 87(4), 1415-1444. <https://doi.org/10.2308/accr-10276>
24. Orpurt, S. F., & Zang, Y. (2009). Do direct cash flow disclosures help predict future operating cash flows and earnings? *The Accounting Review*, 84(3), 893-935. <https://doi.org/10.2308/accr.2009.84.3.893>
25. Pimentel, R. C., & Malacrida, M. J. C. (2020). Quarterly earnings, operating cash flow, and accruals in future performance assessment. *BAR-Brazilian Administration Review*, 17(4), 1-29. <https://doi.org/10.1590/1807-7692bar2020190115>
26. Senan, N. A. M. (2019). The ability of earnings and cash flows in forecasting future cash flows: A study in the context of Saudi Arabia. *Academy of Accounting and Financial Studies Journal*, 23(1), 1-13. Retrieved from <https://www.abacademies.org/articles/ability-of-earnings-and-cash-flows-in-forecasting-future-cash-flows-a-study-in-the-context-of-saudi-arabia-7808.html>
27. Shubita, M. F. (2019). The impact of working capital management on cash holdings of large and small firms: Evidence from Jordan. *Investment Management and Financial Innovations*, 16(3), 76-86. [http://doi.org/10.21511/imfi.16\(3\).2019.08](http://doi.org/10.21511/imfi.16(3).2019.08)
28. Shubita, M. F. (2021). Predictive value of accruals and the moderating role of company size: Empirical evidence from Jordan. *Investment Management and Financial Innovations*, 18(3), 142-150. [http://dx.doi.org/10.21511/imfi.18\(3\).2021.13](http://dx.doi.org/10.21511/imfi.18(3).2021.13)
29. Shubita, M. F. (2021). The ability of cash flows to predict the earning: Evidence from Jordan. *Investment Management & Financial Innovations*, 18(4), 36. [http://dx.doi.org/10.21511/imfi.18\(4\).2021.04](http://dx.doi.org/10.21511/imfi.18(4).2021.04)
30. Sloan, R. G. (1996). Do stock prices fully reflect information in accruals and cash flows about future earnings? *Accounting Review*, 71(3), 289-315. Retrieved from <https://www.jstor.org/stable/248290>
31. Tariq, S. M., & Albogami, H. E. (2022). Managing working capital for profitability; Experience in the Saudi SME sector. *Amazonia Investiga*, 11(55), 209-219. <https://doi.org/10.34069/AI/2022.55.07.22>