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Verifying the Role of Dividends as a Mediator in the Impact of Cash Flows on Bank Stock Returns on the Iraq Stock Exchange: An Empirical Analysis

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Abstract: This study aims to evaluate how the effect of COVID-19 and cash flows from operating, investing, and financing activities influence stock returns, with dividends acting as a mediator. Data were gathered from the quarterly financial reports of 20 banks listed on the Iraq Stock Exchange between 1 January 2015 and 31 December 2020. Panel data were analysed using ordinary least squares (OLS). Findings revealed that cash flows have a positive impact on stock returns. Additionally, cash flows from operating and investing activities enhanced dividends, while those from financing activities negatively affected them. Although relatively small, both effects were statistically significant at the 5% level. The analysis also showed that cash flows and dividends account for 51% of the variance in stock returns, indicating a positive yet minor relationship. The results demonstrated a weakly significant negative effect of COVID-19 on both the direct relationship between cash flows and stock returns and the direct relationship between dividends and stock returns. Cash flows and dividends positively influenced stock returns during the initial five years; however, the COVID-19 pandemic in 2020 inversely affected this relationship by 4%, which is a relatively minor impact. Consequently, this research suggests that banks should improve their cash flows by increasing deposits and investing cash reserves to boost profits and, in turn, increase stock returns. Moreover, dividend distributions should play a crucial role in investment strategies, as they attract investors, raise stock demand, and help stabilise the Iraq Stock Exchange.

Keywords: operating cash flows; investing cash flows; investment cash flows; dividends; stock returns; COVID-19



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1. Introduction

The Iraq Stock Exchange (ISE) has witnessed a remarkable development in recent years, driven by the high performance of trading indicators. According to the [Arab Monetary Fund \(2022\)](#), or what is known as the Arab Stock Exchange Council AFM, the Iraq Stock Exchange has made progress over other Arab stock exchanges by 3.33% in trading indicators during 2022 due to increases in banking sector performance indicators. Banks have played a major role in shaping the Iraqi financial market since its establishment in 2004 until today in terms of the number of companies and volume of investment, which reflects the state of the entire financial stock exchange due to its direct connection to monetary policy and interest rates in Iraq. In this evolving framework, understanding the variables within the banking sector in the Iraq Stock Exchange contributes to increasing profits and developing the stock returns of banks, as well as enhancing their competitiveness. This is of utmost importance,

especially during the period chosen for this research, which is characterised by many challenges, such as economic changes and the spread of the COVID-19 pandemic in 2020, which caused the closure of the stock exchange and the suspension of trade and executed contracts and affected the decline in bank stock prices ([Iraqi Securities Commission, 2024](#)).

However, despite this sector's prominence, banks could not use the increase in their capital to meet the requirements of economic development due to the link between the upper limits of lending and investment and the capital and cash reserves of these companies ([Monetary Policy Report of Central Bank of Iraq, 2022](#)). Moreover, the deposit development index in commercial banks was low due to the ineffectiveness of these companies in increasing the attraction of deposits. This was due to low awareness because of a preference for only keeping enough money to meet daily requirements and low interest rates due to the weak ability to adopt appropriate means to mobilise and attract these savings ([Ministry of Planning—Department of Economic and Financial Policy, 2023](#)). According to these data, understanding the complexities behind the increase in cash hedges and the decrease in the volume of deposits in the banks selected for this research leads to analysing the financial imbalance in these companies, which can weaken their profits and lead to a decrease in their stock returns due to the loss of investment opportunities because of the huge capital commitments in assets and the failure to continue trading. However, the [Iraqi Securities Commission \(2024\)](#) confirmed that some banks have stopped trading because they have not disclosed their financial data due to problems related to their financial performance.

Given the importance of the banking sector and its significant impact on the Iraqi economy, gross domestic product, and society as a whole, Iraqi banks work to finance investment projects and provide savings from individuals and companies, directing them toward the productive industrial and agricultural sectors in order to achieve economic stability. Iraqi banks also support the monetary policy of the Central Bank of Iraq and bolster the oil sector, which is the primary source of revenue for the Iraqi provinces. Given this significance, the main objective of this research was to verify the impact of cash flows as one of the factors associated with financial performance on the banks' stock returns in the Iraq Stock Exchange through dividend distributions during the period from 2015 to the end of 2020. This period is considered important for several reasons, including the fluctuations and global and regional economic events during this period that directly affected the Iraqi economy. These events caused major changes in the Iraq Stock Exchange in terms of trading activity, the performance of the listed sectors, and the level of interaction with economic variables. In addition, the impact of the COVID-19 pandemic, which caused major disruption in global financial markets, including the Iraq Stock Exchange, was a reason for the decline in market value and lack of liquidity due to investor fear and decreased confidence, as well as a decrease in bank profits, increased credit risks, and heightened operational challenges. While increasing capital and cash reserves provide the necessary protection from risks and increase the margin of safety for these companies, the decrease in deposits, which constitute a primary source of financing, leads to a reduction in incoming cash flows, affecting liquidity. Banks may be forced to lend less money to compensate for the decrease in profits, reducing dividends directly linked to stock prices, thus negatively affecting returns if investors realise that these companies suffer from liquidity problems. In the experimental context, [Rompotis \(2024\)](#) finds that investors looking for good investment opportunities in the market tend to evaluate all factors related to the companies targeted for investment. Cash flows are among the most important factors they consider when evaluating a company's financial stability and profits. Moreover, [Jansen \(2021\)](#) points out that the changes in cash flows and their growth occur and generate positive changes in expected stock returns. Cash flows are the most direct indicator of the value added to shareholders, not profits.

Jensen (1986) also claims in the free cash flow theory that when companies expect weak future cash flows, they may not pay dividends or profits may be low, which is not in their favour, as investors view companies with excess free cash flows as more beneficial because they are willing to discover large investment projects that meet their ambitions. Modigliani and Miller (1961) find in the theory of irrelevance of dividends that when companies invest their cash flows instead of distributing them as dividends to shareholders, it will lead to an increase in the prices of shares in the market, as the effective use of cash flows towards investment opportunities with sustainable growth can enhance the returns of shares in the long run because investors are not sensitive to dividends as much as they focus on the expected cash flows of the company. Accordingly, and in line with the specific objectives, the contribution of this research emerges in bridging the gap in the previous literature, as this research relies on a sample of Iraqi banks that reflects the specificity of the Iraqi market as an emerging market during a period full of regulatory and economic challenges. This allows for testing the assumptions of financial theories that may not have received wide support in an environment that has not been adequately studied in the previous literature, especially with the scarcity of Iraqi studies that do not take into account the recent developments related to the period of interest in this research on the profits and stock prices of the Iraqi banking sector. Thus, it is possible to measure the extent of the applicability of these assumptions and provide modifications or developments to these theories in the same context.

The actual contribution of this research is highlighted by its discussion of the relationship between cash flows and dividends as an intervening variable with stock returns in the Iraqi context, which has a rentier economy that depends on oil. This allows this research to provide a view on rentier challenges and how to manage them, with reference to other studies that have reviewed these topics in other financial markets, such as the studies by (Abdul et al., 2024; Al-Shahadah et al., 2023; Saad Hamada & Asad, 2018; Yeo, 2018; Liandu et al., 2023; Herman & Chaidir, 2023; Al Sawalqa, 2021; Putri & Puryandani, 2021). At the same time, providing supporting results, this research question is about the extent to which dividends can play a role as an intermediary variable in measuring the indirect effects of cash flows on stock returns instead of their ability to measure only the direct effects. This approach is a new addition that provides a different perspective to understand and analyse the complex dynamics between these variables, confront the contradictions in previous results, enhance the practical value of the research, and adapt to market specificity. Although previous studies have focused on the direct impact of dividends as an independent variable with stock returns, they have not addressed the effect of dividends as an intermediary variable that links other financial variables, such as cash flows, and enhances or reduces the indirect impact of this variable on stock returns, especially in emerging markets such as Iraq, where dividends are irregular. This irregularity makes the direct relationship unstable or insufficient to explain the dynamics of returns in Iraqi banks. On the other hand, this type of analysis adds a new dimension to financial theories that do not explain the complex relationship between dividends and stock returns and other variables, such as cash flows, which provides a deeper insight into how financial policies affect investor behaviour and the stock market in general. The research results also show a positive effect of cash flows on stock returns and indicate that cash flows through operating and investing activities positively affect dividends and negatively affect them through financing activities. The results also show that cash flows and dividends explain 51% of the variance in stock returns. This makes a valuable contribution to Iraqi banks, helping them improve strategies that enhance investment value that may not have been taken into account, in addition to guiding stakeholders and investors on how banks can

manage their cash flows in a way that produces profits and improves stock returns in the long term, thus enhancing confidence among them.

2. Literature Review and Research Hypotheses

[Modigliani and Miller \(1961\)](#) find that companies' stock prices and investors' profits are directly linked to their cash flows. When these flows decrease or disappear, it affects investment decisions because the lack of cash flows leads to a decrease in internal funds and, thus, a decline in profits, which negatively affects the market value and investors' decisions due to the company's weak ability and efficiency in managing its assets. [Jensen \(1986\)](#) supports that cash flows negatively affect investment decisions if the excess cash surplus is used to finance projects with low returns or shareholder returns. [Myers and Majluf \(1984\)](#) also find that cash flows as internal sources of finance profits and shares avoid companies' transaction costs associated with debt and issuing shares. In addition, reducing the lack of information to enhance clarity, when a company borrows or sells new shares to increase its capital, investors may understand that the company is facing financial difficulties. This perception may affect profits and stock prices because the information the company has about increasing profits and market value will be unclear to investors.

This empirical study expanded the application of these ideas to verify the relationship among cash flows, distributed dividends, and stock returns in different companies and sectors. However, the results and discussions are still inconclusive. For example, [Hamshari \(2020\)](#) investigated the impact of operating cash flows on the profitability of bank, insurance, and education stocks in the Amman Stock Exchange. The results showed that cash flows in Jordanian banks, insurance, and education companies have a positive relationship with earnings per share, which is in line with the results of [Al-Shahadah et al. \(2023\)](#), who confirmed a positive and strong correlation among return on investment (ROI), earnings per share (EPS), and earnings management. [Saad Hamada and Asad \(2018\)](#) investigated whether corporate governance and operating cash flows affect dividend payouts of non-financial companies on the Pakistan Stock Exchange. The study found that board size, CEO duality, ownership structure, and operating cash flow significantly impact dividend payout. In another study, [Liandu et al. \(2023\)](#), who conducted a study on the impact of operating cash flow and earnings management on PT Baturaja Multi Usaha's profitability and asset growth rate from 2019 to 2021, showed that operating cash flow has a significant positive impact on profitability, while earnings management has a significant impact on company growth.

[Yeo \(2018\)](#) used generalised least squares (GLS) regressions to explore the effect of cash flow on investment levels and profits in freight transport companies, which are available in the Factiva database for 2009–2014. The results indicate that excess cash flows lead companies to increase investment and reduce profits. However, free cash flow is a critical factor for investment and profits. In Indonesia, [Abdul et al. \(2024\)](#) sought to examine the impact of sales growth and operating cash flow on stock prices of corporate property, real estate, and construction companies on the Indonesia Stock Exchange for the period of 2017–2019. The results showed that sales growth and operating cash flow significantly affect stock prices individually. The results also found that sales growth and operating cash flow together explain approximately 45.5% of the observed variance in stock prices.

In contrast, [Herman and Chaidir's \(2023\)](#) study on the impact of cash flows (operating, investing, and financing) on the value of technology companies in the Indonesia Stock Exchange during the period from 2019 to 2022 showed that cash flows were not a factor affecting the price-to-earnings ratio and book value of stock prices in Indonesian technology companies. [Al Sawalqa's \(2021\)](#) study on the impact of cash flows per share and capital structure on the shareholder value of Jordanian banks and insurance companies listed on

the Amman Stock Exchange from 2011 to 2019 found that shareholder value positively relates to cash flows from operating activities per share and is negatively related to cash flows from investing and financing activities per share. Putri and Puryandani (2021) sought to measure the impact of cash flows and financial leverage on investment decisions in Indonesian companies listed on the Indonesia Stock Exchange that suffered from financial distress during the period from 2017 to 2019. The results indicated no effect of cash flows and financial leverage on the investment decisions of companies suffering from financial distress, in contrast to profitability, which has a positive impact on investment decisions. According to the abovementioned discussions, the research hypotheses are as follows:

H1. *Cash flows affect banks' stock returns on the Iraq Stock Exchange.*

H2. *Cash flows affect banks' dividends on the Iraq Stock Exchange.*

H3. *Dividends mediate the effect of cash flows on banks' stock returns on the Iraq Stock Exchange.*

To clarify the relationship among the independent variable cash flows, the mediating variable dividends, and the dependent variable stock returns, the research model was designed as shown in Figure 1.

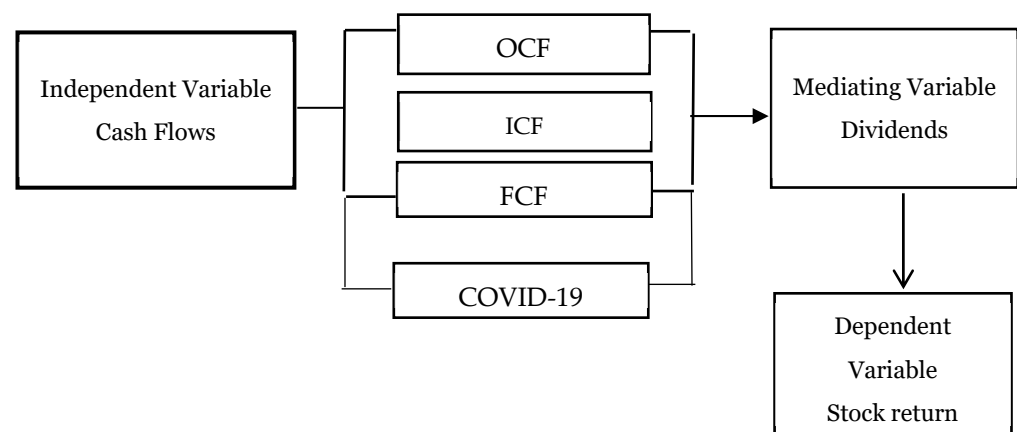


Figure 1. Conceptual model.

3. Methodology

In this research, the experimental approach was adopted using linear regression according to the least squares method to analyse the effect of the independent variable, cash flows, on the dependent variable, stock returns, via dividends as an intermediary variable. The data were estimated according to the fixed-effects model based on the results of the Hausman test using Eviews-23 software.

3.1. Data and Source

The database was selected to collect all balance sheets, income statements, cash flow statements, and trading reports on the Iraq Stock Exchange platform, which already displays reclassified and easily comparable financial data. The main advantage of using the financial data available on this platform is that they are certified by official government bodies. The sample selection includes objective and replicable criteria, including the fact that the selected companies should be active and listed on a regulated market in addition to being in Iraq. Therefore, 44 banks were obtained, and the criteria used to select the sample were accurate regarding the availability of financial data. For this reason, 24 banks were excluded, and the basic data covering the quarterly periods from 1 January 2015 to 31 De-

cember 2020 were unavailable. Due to the suspension of trading, a non-probability sample of 20 banks was selected, covering 480 observations to cover the research requirements.

3.2. Data Analysis and Variable Measurement

This research uses descriptive analysis, including mean, standard deviation, maximum, and minimum, as well as skewness and kurtosis in the Jarque–Bera test for normal distribution. This research also used least squares regression to examine the impact of cash flows on earnings and stock returns. Panel data were estimated using a fixed-effects model based on Hausmann specifications. Table 1 presents the independent variable, cash flows, was measured through operating, investing, and financing cash flows, following the study by Hamshari (2020). The first dependent variable, dividends, was measured using dividends-to-net income after tax and interest, as in the study by Dragotă et al. (2019). The second dependent variable, stock returns, was measured using the actual return rate = current period closing price—previous period closing price/previous period closing price, as in the study by Robbyah et al. (2021).

Table 1. Variables Construction.

Variables		Symbols	Measures
Stock returns	Dependent variable	SR	the current period closing price for bank (i) at the period (t)—the previous period closing price at the period (t)/previous period closing price at the period (t) over the period 2015–2020
Cash flows	Independent variable	CFs	Total cash flows of the bank (i) in period (t) resulting from operating, investing, and financing activities over the period 2015–2020
Operating Cash Flows	Independent variable	OCF	Operating cash flows in—Operating cash flows out of bank i at the period t over the period 2015–2020
Investing Cash Flows	Independent variable	ICF	Investing cash flows in—Investing cash flows out of bank i at the period t over the period 2015–2020
Financing Cash Flows	Independent variable	FCF	Financing cash flows in—Financing cash flows out of the bank (i) at the period (t) over the period 2015–2020
COVID-19	Independent variable	Covi	It takes a value of (0) for the period from 2015 to 2019 (before the pandemic), and it takes a value of 1 for the period 2020 (during the pandemic)
Dividends	Mediating variable	DP	dividends—net income after tax and interest of bank (i) at the period (t) over the period 2015–2020

3.3. Model Specification

$$y_{it} = \alpha_0 + \alpha_1 x_{1it} + \alpha_2 x_{2it} + \alpha_3 x_{3it} + \alpha_4 x_{4it} + e_i$$

Model 1:

$$SR_{it} = \alpha_0 + \alpha_1 OCF_{it} + \alpha_2 ICF_{it} + \alpha_3 fCF_{it} + \alpha_4 Covi_{it} + e_i$$

Model 2:

$$DP_{it} = \alpha_0 + \alpha_1 OCF_{it} + \alpha_2 ICF_{it} + \alpha_3 fCF_{it} + \alpha_4 Covi_{it} + e_i$$

Model 3:

$$SR_{it} = \alpha_0 + \alpha_1 OCF_{it} + \alpha_2 ICF_{it} + \alpha_3 fCF_{it} + \alpha_4 DP_{it} + \alpha_5 Covi_{it} + e_i$$

where

DP_t = Dividends in banks in the period t ;

OCF_t = Operating cash flows in banks in the period t ;

ICF_t = Investment cash flows in banks in the period t ;

FCF_t = Financing cash flows in banks in the period t ;

SR_t = Stock returns in banks in the period t .

4. Results and Discussion

4.1. Descriptive Statistics

The descriptive results reveal the basic characteristics of the research variables and highlight their practical effects within the banking sector. It is noted from the results of Table 2 below that the independent variable cash flows achieved the highest arithmetic mean in OCF, amounting to 1.24×10^9 , among 480 observations. This indicates that banks' funds are more concentrated in operational activities than other activities. It recorded the lowest standard deviation in FCF, at 3.55×10^9 . This is because, for many periods, the banks selected for this research did not have cash flows (zero). Meanwhile, the mean of the mediating variable dividends is 0.434, with a standard deviation rate of 0.364. This means that there is a difference in dividends in comparison to the specified net income of banks; however, this difference was not significant. The observed range in the dependent variable, SR, also shows that the mean was negative, with a value of -0.0749 and a standard deviation of 0.4687. This indicates that the selected banks are experiencing significant declines and volatility in stock returns. Looking at the Jarque–Bera normal distribution test results, we notice that the data follow a normal distribution where the p -value for all variables was greater than 5%, regardless of the value of skewness and kurtosis. This means that the data follow a normal distribution.

Table 2. Descriptive statistics of the results.

	OCF	ICF	FCF	DP	SR
Mean	1.24×10^9	1.09×10^9	1.36×10^8	0.434294	-0.07494
Median	35,828,334	$-2,335,031$	0	0.39	-0.152
Maximum	1.10×10^{11}	5.38×10^{10}	6.57×10^{10}	2.95	3.929
Minimum	-6.18×10^{10}	-9.36×10^{10}	-2.75×10^{10}	-1.917	-0.889
Std. Dev.	9.52×10^9	8.30×10^9	3.55×10^9	0.364586	0.468757
Skewness	5.178002	-6.17073	12.29128	0.826568	2.832127
Kurtosis	59.7577	63.42818	25.32372	14.44392	18.71431
Jarque–Bera	66,572.09	76,077.53	126,445.9	26,738.76	55,804.66
Probability	0.183525	0.230013	0.114827	0.138436	0.092586
Observations	480	480	480	480	480

4.2. Stationarity Test

According to the Fisher ADF test, the results presented in Table 3 show that the p -values for all variables were less than the 0.05 significance level, so the null hypothesis was rejected. This means that the data do not contain a unit root; in other words, they do

not contain long-term fluctuations or unstable trends, so the regression model was suitable for analysis.

Table 3. Results of individual root Fisher ADF test.

Variable	At Level/Individual Intercept		
	Statistic	Prob.	Decision
OCF	164.723	0	Stationary
ICF	217.485	0	Stationary
FCF	190.201	0	Stationary
DP	239.573	0	Stationary
SR	115.035	0	Stationary

4.3. Autocorrelation Test

The Durbin–Watson test was used to check the extent of autocorrelation between the errors in the residuals of the models. The results in Table 4 show that the Durbin–Watson values for Model 1 cash flows and stock returns were 1.93; in Model 2, the cash flows and dividends were 1.87; and in Model 3, the cash flows and dividends with stock returns were 1.81. All the values of the models are close to 2, which means that the assumption of no autocorrelation in the residuals is generally acceptable. Also, the model’s data do not suffer from bias or underestimation of variance.

Table 4. Measure of Durbin–Watson autocorrelation between financial flexibility dividends and actual return rate.

Dependent Variable	Model	F	Durbin–Watson Autocorrelation
Stock return with Cash Flows	1	4.403203	1.93
Stock Return with Dividends	2	3.934843	1.87
Stock return with Cash Flow and Dividends	3	3.561951	1.81

4.4. Hausman Test

To identify and select the optimal model for the panel data used in this research, the Hausman test was used to measure whether the unobserved effects in this difference between units, such as bank management, regulatory policies, and market reputation, are related to the independent variable, cash flows, whether they affect the dependent variable returns, and if the independent variable affects the mediating variable profits. Based on the test results, the null hypothesis (H0) for the chi-squared test was that if the probability value was greater than 0.05, then the random effect model was optimal, while the alternative hypothesis (H1) for the chi-squared test was that if the probability value was less than 0.05, then the fixed effect model was optimal for testing. According to the results of Table 5 below, it is clear that the chi-squared value is significant, and the alpha value is less than 5%, which means that there is a significant difference between the two models, thus rejecting the null hypothesis. The fixed-effects model was chosen to estimate the data of Models 1 and 2, as it is more reliable in estimation.

Table 5. Hausman test results in determining the model.

Test Summary	Chi-Sq. Statistic	DF	Prob.			
Cross-section random Model 1	10.448	3	0.015			
Cross-section random Model 2	5.778	1	0.016			
Variable	Model	Variable	Fixed	Random	Prob.	Prob.

Table 5. Cont.

Test Summary	Chi-Sq. Statistic	DF	Prob.			
Cash flows × Stock Return	1	OCF	3.35×10^{-12}	2.51×10^{-12}	0.249	0.391
		ICF	9.74×10^{-13}	2.54×10^{-12}	0.761	0.435
		FCF	5.93×10^{-12}	6.16×10^{-12}	0.381	0.364
Cash flows × Dividends	2	OCF	6.00×10^{-12}	4.91×10^{-12}	0.007	0.03
		ICF	1.57×10^{-12}	3.55×10^{-12}	0.522	0.156
		FCF	-1.28×10^{-11}	-1.04×10^{-11}	0.014	0.046

4.5. Multiple Regression Analysis

4.5.1. Model 1: The Effect of Cash Flows and COVID-19 on Stock Returns

The regression analysis of Model 1 in Table 6 on the relationship between the selected banks' second dependent variable (SR) and the set of independent cash flow variables shows that the cash flow coefficients were positive for all three indicators. Their probability value was less than the 5% level. However, the values were minimal, indicating a small statistically significant positive effect on stock returns. The findings indicated that COVID-19 had a negative effect on stock returns in 2020. The effect is evident in the beta coefficient of -2.1410 , which is accompanied by a probability value of 0.0012 . The explanation coefficient, R-squared, also indicates that cash flows explain 0.49 variances in banks' stock returns. The F-value of 2.403203 confirms the model's accuracy in estimating the results and is supported by the p -value of 0.004 . Considering the Durbin–Watson value of 1.897818 , which is close to 2 , there is no autocorrelation between the model's residuals. The model was, therefore, suitable for the analysis. Accordingly, the null hypothesis was rejected.

Table 6. Coefficient results for the effect of cash flows on stock return (fixed-effects model).

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.076125	0.021009	3.623493	0.0003
OCF	2.52×10^{-12}	2.93×10^{-12}	2.861450	0.0389
ICF	4.53×10^{-12}	3.25×10^{-12}	1.779304	0.0136
FCF	6.10×10^{-12}	6.78×10^{-12}	0.899926	0.0368
Covi	-2.1410	4.5611	-4.68103	0.0012
R-squared	0.493694	F-statistic		2.403203
Adjusted R-squared	0.060546	Prob (F-statistic)		0.000414
S.E. of regression	1.454344	Durbin–Watson stat		1.897818

4.5.2. Model 2: The Effect of Cash Flows and COVID-19 on Dividends

The regression analysis of Model 2 in Table 3 below provides valuable insights into the relationship between the selected banks' first dependent variable (DP) and the set of independent variables of cash flows. The coefficients of cash flows show a positive coefficient, except for FCF, which indicates a small negative impact on the DP. However, all of the coefficients were statistically significant at the specified 5% level. The results, as shown in Table 7, indicate that the impact of COVID-19 was negative in 2020 on the DP. This impact is slightly pronounced in the beta coefficient of -1.7610 , with a p -value of 0.0014 . The explanation coefficient, R-squared, also indicates that cash flows explain 49% of banks' stock returns variance. The F-value of 2.934843 confirms the model's accuracy in estimating the results and supports the p -value of 0.000 . Furthermore, the Durbin–Watson value of 1.993010 indicates no autocorrelation among the model residuals; hence, the model is suitable for the analysis. Therefore, the null hypothesis is rejected.

Table 7. Coefficient results for the effect of cash flows on dividends (fixed-effects model).

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.433520	0.016155	26.83523	0.0000
OCF	4.90×10^{-12}	2.25×10^{-12}	2.177700	0.0299
ICF	3.56×10^{-12}	2.50×10^{-12}	1.423826	0.0552
FCF	-1.04×10^{-11}	5.21×10^{-12}	1.997701	0.0463
Covi	−1.7610	3.8212	−4.75092	0.0014
R-squared	0.441794	F-statistic		2.934843
Adjusted R-squared	0.081613	Prob (F-statistic)		0.000012
S.E. of regression	0.349375	Durbin–Watson stat		1.993010

4.5.3. Model 3: The Effect of Cash Flow, COVID-19, and Dividends on Stock Returns

This research used path analysis to analyse the effect of cash flows on stock returns with the presence of dividends. The regression of Model (3) in Table 8 below shows that the coefficient of cash flows in both cases with the stock returns for the selected banks was positive, with a value of 0.153 in the direct relationship without mediating dividends and 0.123 in the indirect relationship with the presence of mediating dividends. The probability value was 0.031, which means that cash flows without and with dividends positively affect the stock returns, and this effect is significant at the 5% level. The results also showed that the effect of COVID-19 in 2020 on stock returns was negative in direct and indirect relationships, with beta coefficients of −0.012 and −0.033, respectively. The R-squared interpretation coefficient also indicates that cash flows and dividends explain 51% of the variance in stock returns for the banks selected in this research. The F-value of 5.181257 confirms the model's accuracy in estimating the results and is supported by the *p*-value of 0.031. Considering the Durbin–Watson value of 1.919, which is close to 2, there is no autocorrelation between the model's residuals. The model was, therefore, suitable for analysis. Accordingly, the null hypothesis was rejected.

Table 8. Regression coefficient direct and indirect effects of cash flows and dividends on stock returns.

Parameter	Direct Effect	Indirect Effect	Overall Model
	Cashflows × Stock Returns	Cash flows × Dividends × Stock Returns	
Beta	0.153	0.123	0.279
	Cashflows and COVID-19 × Stock Returns	Cash flows and COVID-19 × Dividends × Stock Returns	
Beta	−0.012	−0.033	−0.045
Adjusted R-squared	0.298	Residual	103.991
S.E. of regression	1.261	Std. Error	0.4678
F-statistic	5.181257	Durbin–Watson	1.919
Prob (F-statistic)	0.031	R-squared	0.513

4.6. Examination of Robustness

Robustness tests were employed to confirm that the data remained stable under variations in the scales and conditions of the variables. All variables were categorised into the 1st and 99th percentiles. Both models employed robust clustering of standard errors across banks and periods, incorporating fixed-effects and year variables. The fundamental Model (1) presented in Table 9 indicates a small positive relationship between cash flows (CFs) and stock returns (SR), as well as a positive relationship between dividends (DP) and stock returns (SR). The effects are statistically significant at the 5% level. The findings

indicate a negative and significant impact of the COVID-19 dummy variable on stock returns. The interaction effect of COVID-19 with cash flows and dividends in Model (2) is weak yet significant, suggesting that the pandemic has influenced the relationship between cash flows (CFs), dividends (DP), and stock returns (SR). The R-squared value increased from 51% to 55%, demonstrating that including COVID-19 significantly enhanced the model's explanatory power regarding the variance in stock returns.

Table 9. Robustness test between cash flows and dividends and COVID-19 with stock returns.

Variables	SR (1)	SR (2)
CFs	2.35×10^{-12} *** (0.0387)	2.28×10^{-12} *** (0.0262)
DP	0.5080 *** (0.0018)	0.4233 *** (0.0013)
Covi	−0.1240 * (0.0531)	−0.1542 * (0.0526)
CFs * Covi	-	-1.084×10^{-9} ** (0.0397)
DP * Covi	-	−0.0853 ** (0.0430)
Observation	480	480
R-squared	0.5105	0.5528

***, **, and * denote statistical significance levels at 1%, 5%, and 10%, respectively. Values in brackets represent standard errors.

5. Conclusions

This study examines the influence of cash flows on the stock returns of banks listed on the Iraq Stock Exchange, with dividends serving as an intervening variable in this relationship. This study additionally demonstrates the influence of the COVID-19 pandemic, which is represented as a dummy variable. This research empirically examines the impact of cash flows on stock returns via dividends and the influence of COVID-19, focusing on 20 banks listed on the Iraq Stock Exchange from 2015 to the end of 2020. The analysis encompasses 480 observations throughout the banking year. This study employs a regression model utilising the ordinary least squares method, alongside random effects and fixed effects as part of the Hausman test, to analyse the impact of cash flows and COVID-19 on stock returns. This study employs a regression model based on path analysis to investigate the direct and indirect impacts of cash flows on stock returns, mediated by dividends and the dummy variable, COVID-19, along with robustness testing to ensure reliable and consistent findings. The empirical findings in Model 1 indicate a statistically significant positive relationship between cash flows and stock returns. The model demonstrates substantial explanatory power (R^2), suggesting that higher cash flow values in prior periods are associated with increased stock returns in subsequent periods. The findings indicate that the effect of COVID-19 on the correlation between cash flows and stock returns in 2020 was negative, albeit minimal. Model 2 validates the statistically significant positive impact of operating and investing cash flows on dividends. The model reveals an unexpectedly significant negative effect of financing cash flows on dividends. The findings indicate a significant negative impact of COVID-19 in 2020 on the relationship between cash flows and dividends. Specifically, banks prioritising significant operating and investment activities tend to experience increased dividends, whereas financing flows exhibit an inverse relationship. The adverse impact on dividends aligns with the notion that banks do not prioritise financing flows to enhance profits. This may result from apprehension regarding financial

risks, as such flows entail borrowing funds or issuing new stocks and bonds, potentially impacting profits. The pandemic's impact on the Iraq Stock Exchange was minimal. Model 3, utilising path analysis, confirms that cash flows positively and directly influence stock returns; specifically, a percentage increase in banks' cash flows results in a 15% increase in stock returns. The introduction of earnings as a mediator results in a reduction of the indirect effect to 12%. The model indicates that COVID-19 negatively impacted the direct relationship between cash flows and stock returns, as well as dividends and stock returns, with beta coefficients of -0.256 and -0.189 , respectively. This suggests that while cash flows and dividends initially supported stock returns over the first five years, the pandemic slightly diminished this effect. A potential explanation for this phenomenon is that bank earnings allocate a portion of cash flows to shareholders, diminishing the liquidity accessible for investment and consequently marginally impairing stock returns during crises. The findings of this research align with the propositions put forth by (Modigliani & Miller, 1961; Jensen, 1986; Myers & Majluf, 1984). The findings align with the research conducted by (Saad Hamada & Asad, 2018; Yeo, 2018), which demonstrated a positive relationship between cash flows and dividends. This research's findings contradict the study by Herman and Chaidir (2023) and the analysis by Putri and Puryandani (2021), which suggest that cash flows do not influence earnings, the value of firm investments, or stock prices. This research presents basic results indicating a positive relationship between cash flows and stock returns, directly and indirectly, through dividends. Additionally, it offers practical contributions that may benefit stakeholders in the banking sector. Decision-makers can utilise these results to enhance cash flow management strategies and minimise cash loss by redefining financial priorities. This involves transitioning from traditional operations management to dynamic strategies that prioritise cash flows and dividends in planning for long-term financial sustainability. Additionally, achieving a balance between internal growth and investor confidence is crucial, as the findings indicate that dividends serve not only as rewards for shareholders but also as instruments for fostering long-term investor confidence and strengthening the financial stability of banks. The findings underscore a practical implication for investors by alleviating cautionary constraints. This research demonstrates that dividends derived from cash flows directly indicate financial management quality, providing a reliable mechanism for identifying investment opportunities and bolstering confidence in the Iraq Stock Exchange. Maximising returns through informed decisions by analysing banks' cash flows and dividend distributions as a critical factor for revenue growth can lead to sound investment choices. The research recommends that banks enhance cash flows by increasing deposits and investing cash reserves to improve profits, thereby enhancing stock returns. Dividend distributions are a crucial component of investment strategies, as they not only attract investors and boost stock demand but also enhance the stability of the Iraq Stock Exchange. This research indicates the necessity for experimental studies and the expansion of research into additional sectors to determine if the minor impact of cash flows may become more pronounced under different temporal conditions.

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