THE MEDIATING ROLE OF THE DIGITIZED TRADING SYSTEM IN DIVIDEND PAYOUT POLICY AND BANKING PERFORMANCE

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Abstract

Digital transformation (DT) plays an essential role in banking performance. Through assisting banks in reaching more clients and investors. However, since there is a gap in the literature about the relationship of digital trading systems along with dividend policies and banks' performance, the current paper seeks to answer whether the digital trading system mediates the Granger causalities of dividends along with the performance of listed banks in Jordan, from January 2013 to December 2024. Therefore, error correction model (ECM) findings revealed that banks' performance (measured through market capitalization, index of Z-score index, and stock price growth) is significantly related to dividend payout policy, over the long run. It is also found that trading electronically is significant in mediating Granger causality between dividends and market capitalization. Moreover, since banks' decisions regarding paying dividends improve the activity of digital trading, it is concluded that the digital trading system plays an important role in improving banks' performance. Moreover, the study recommends that investors rely on dividend payout policy and trading activity to make more valuable and accurate investment decisions.

Keywords: Banks' Performance, Dividend Payout Policy, Digital Trading Activity, Market Capitalization, Dividend Payout Decision

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1. INTRODUCTION

Since dividend policies have a critical influence on the financial institutions' effective performance, researchers related to corporate finance (Al Azizah & Haron, 2025; Sheng & Montgomery, 2024; Tran et al., 2025) conducted tremendous research to evaluate the dividend policies' effects on banks' efficient performance. Hosain (2016) stated a positive correlation between dividend policy along the liquidity of Bangladesh banks. Likewise, Singh and Tandon (2019) confirmed that a firm's value is

significantly related to dividend measures like earnings per share (EPS), dividends per share (DPS), dividend yield, as well as the retention ratio. In addition, since there are many factors impacting financial institutions' performance, studies including (Bani Atta et al., 2023; Agnese et al., 2022; Mashamba & Gani, 2022) affirmed that during financial crises, banking performance is found to be significantly influenced by governance risk. However, Ali (2020) revealed that characteristics like inflation, income per capita, and interest rate statistically affect the sustainability of Jordanian listed banks as gauged through the index of Z-scores. Additionally, authors like Al Azizah and Haron (2025) documented that the performance of Indonesian listed Islamic banks through the return on assets (ROA) and return on equity (ROE), which have a strong correlation with corporate governance practices. Furthermore, pioneering studies including Lintner (1956), Gordon and Shapiro (1956), and Agyei and Marfo-Yiadom (2011) revealed that DPS and the ratio of payout significantly affect firms' value. Consistently, a study by Gordon (1963) asserted that investors are stimulated to invest in firms by focusing on dividends rather than capital gains. On the other hand, findings from the irrelevance dividends theory argued that the firms' decisions regarding paying dividends are insignificantly impacting the value of the firm (Miller & Modigliani, 1961; Gomes Almeida et al., 2015).

However, due to the technological revolution in finance, financial institutions are forced to restructure their systems to be able to execute their operations electronically. Hence, services like digital trading, e-payment, online, as well as mobile banking, assisted investors and banks' clients to conduct their transactions securely and at lower costs (Doblas et al., 2025; Rieg & Ulrich, 2024). Moreover, since the use of technology-enabled techniques facilitated the process of investing or executing financial transactions, studies confirmed that the digital transformation (DT) usage enhanced a stable economy as well as stock markets. Furthermore, International Finance Corporation (IFC, 2017) showed that digital services, like integrating banking accounts to a digitalized identity, led to an improvement in the performance of financial institutions by helping them to reach more clients and investors. In this regard, Ismail et al. (2023) confirmed that the DT and artificial intelligence (AI) systems play a leading role in the enhanced performance of the banking system through lowering service and product costs, assessing risks effectively, as well as enhancing the trust of clients towards banking services and products.

Moreover, since the digitalized transformation of the two systems, i.e., banking and financial, is able to help investors to execute their transactions electronically and at lower costs, in April 2009, the Amman Stock Exchange launched the NSC-V900 Electronic-Trading Platform for facilitating the trading activities as well as reaching more investors. This platform conducted an essential component that improves the activity of the stock market through motivating both the investors, i.e., local and international, for achieving maximum benefits, like fast order execution and increased informational transparency. So, the statistics demonstrated that because of launching this electronic system, the value traded of stocks increased by JOD 794 million during the period 2010–2015, before decreasing by JOD 139.4 million by the end of 2022.

Moreover, since the previous research review highlighted a gap about the implications of digitalized trading systems and dividend policies in the performance of Jordanian listed banks, this paper focuses on evaluating the influence of the digitalized system of trading in mediating the causalities between dividend payout policies, along with the performance of banks listed on the Jordanian Stock Exchange. To achieve the primary goal of our paper, the following research question is going to be answered:

RQ: Does the relationship between dividends and digital trading activity impact the bank's performance listed in Jordan?

To answer this main question, the deductive approach is used through utilizing statistical methods, including the augmented Dickey-Fuller (ADF), Johansen co-integration, the single equation of the error correction model (ECM), and the Wald x^2 test in order to evaluate time series data covering the period January 2013 to December 2024. Consequently, results from this research revealed that Jordanian banks, which are listed on stock exchanges, have performance that is significantly related to the association between dividends and digital trading activity. Therefore, the study's significance comes from its contribution to expanding the literature that focuses on the influence of dividends and DT on the performance of Jordanian listed banks. In addition, findings will contribute to providing help to the investors to understand the role of DT in banking performance, and subsequently, they will make better decisions in their investment, which leads to a positive enhancement in banks' performance.

The following sections form the basis of the paper. Section 1 is an introduction, whereas Section 2 consists of the literature review. Research design, data collection, variable construction, and procedures are all included in Section 3. The study findings and their interpretation are provided in Section 4. Finally, the research's conclusion, limitations, suggestions for further study, and recommendations are presented in Section 5.

2. REVIEW OF PREVIOUS LITERATURE AND HYPOTHESES DEVELOPMENT

2.1. Banks' performance and dividends theories

The theory of bird-in-hand states that a firm's value, as well as share prices, is significantly related to dividend decisions. This policy believes that the value of a firm has a significant response to changes in dividends, because dividends significantly affect stock prices. In this context, studies including Lintner (1962) and Gordon (1963) confirmed that the value of a firm and dividends are significantly related. In this regard, a study by Lundgren (2016) proved that the fans of this policy prefer dividends over capital gains, since the latter, to some extent, is seen to be uncertain. Additionally, since dividends are considered to impact the value of firms through affecting their stock prices, researchers, including Singh and Tandon (2019), revealed that the prices of stock in 50 Indian firms that are listed have a significant relation with dividend measures, such as EPS, DPS, dividend yield, as well as the retention ratio. Consistently, a study

by Sheng and Montgomery (2024) confirmed that a dividend payout and the performance of firms with highly concentrated managerial power are negatively correlated with each other, while this correlation is found to be weak in firms that are facing a double principal-agent problem. Additionally, throughout the COVID-19 pandemic, the relationship between firms' performance and dividend payouts was strengthened. However, the irrelevance dividends policy argues that dividends are insignificantly impacting the firm's value. According to this theory, investors prefer to invest in stocks for the aim of generating capital gains, rather than receiving dividends. In this context, researchers, including Gichuhi (2016), showed that the banks' performance in Kenya, as captured by the ROA, is insignificantly affected by the EPS ratio.

Consistently, Luvembe et al. (2014) studied the banks listed in Kenya for the period of 2006 to 2010 and found that DPR has a positive and significant relation with the market capitalization of banks. Nevertheless, Jepkemoi et al. (2019) used liquidity and capital structure as performance measures and found that DPR has an insignificant relation with measures of performance.

Additionally, through studying the influential factors of DPR in the performance of Bangladesh commercial banks, results from the ordinary least squares found that banks' liquidity and growth are positively impacting the dividend policy in Bangladesh banks. Paradoxically, dividend policy is adversely affected by banks' profitability and financial leverage (Hosain, 2016). However, through employing panel data regression models to explore those variables, which are impacting the dividend policy of manufacturing companies that are total of 74, listed in the Ho Chi Minh City Stock Exchange, over the period 2020–2021; Tran et al. (2025) revealed that the dividend policy is significantly impacted by the previous year's DPR, EPS and ROA. However, dividend policies are found to be negatively affected by the revenue growth rate before COVID-19, but lost significance during the COVID-19 period. Moreover, the following principal hypotheses are developed:

H1: Dividend payout policy is significantly affecting the performance of Jordanian listed banks, over the long run.

H2: Dividend payout policy significantly causes short-run causalities towards banks' performance.

2.2. The implications of digital finance in the financial system

Though there is no proper definition of digital finance by Gomber et al. (2017) stated that it includes every financial product and service that is not only provided by technological firms but also all the digital infrastructure that removes the interaction with service providers and provides direct access to online investment, online payment, and online deposits. The stable economy and increased stock market performance are possible only because of digitalization, as it helps investors to reach many digital services at low expense.

So, this section covers the work of previous researchers about how financial technology (FinTech) and the system of digitalized trading affect the banking performance. Phan et al. (2020) studied this relation in 41 banks in Indonesia. They used ROA, ROE, net interest margin, and yield on earning asset ratio as measures of performance. They found that these measures are negatively affected by the FinTech firms' growth. On the other hand, Rieg and Ulrich (2024) revealed that improved planning and budgeting play a vital role in creating a positive relationship between corporate performance and digitalization. However, Doblas et al. (2025) argued that banks' performance measured by the ROE and ROE is insignificantly related to mobile point-of-sale and digital commerce payments.

Many authors (Lee, 2009; Chen, 2011) stated that fast trading, lower operating costs, and increased transparency of information are some of the features of a digitalized trading system that enhance the financial profitability of the institutions. While studying the emerging markets, IFC (2017) stated that with the use of FinTech services, like connectivity of banking accounts to digitalized identity helps banks to increase their customer access and banking services like payments of bills and transactions related to investment.

In today's world of digitalization, an economy's success and stability depend on the functioning of its financial institutions, according to Ozili (2017), and digital FinTech can increase the economy's success in a stable economic period by increasing FinTech transactions. A study by Manyika et al. (2016) stated that gross domestic product (GDP) is strongly affected by the FinTech innovations in developing nations, and it is expected that by the end of 2025, there is an increase of 6% in the GDP of developing nations due to the FinTech innovations.

Furthermore, through assessing the role of DT as measured by financial innovation, technological innovation, as well as the integration between finance and technological innovation in the efficiency of banks, Zuo et al. (2023) asserted that the productivity of commercial banks is positively related to DT as well, and digital finance plays an important role in banks' efficiency. However, the coming section discusses the methodology that is followed to achieve the study's aims and objectives. In a further study, Ali et al. (2025) recommended that, in order to achieve regional innovation and technological efficiency in Jordan, the financial industry needs to focus on the usage of innovative strategies and FinTech. Thus, for achieving the core aim of the study, the following third hypothesis is going to be tested:

H3: Digital-trading activity mediates long-term causalities between dividend payout policy and banking performance as captured by market capitalization's growth rate.

3. RESEARCH METHODOLOGY

3.1. Sample description and data sources

To study the mediating effects of trading activity in the relationship between *DPR* and banking performance, time series data were collected from January 2013 to December 2024, which includes a total of 144 observations. The data was collected from Jordan's Central Bank of Jordan (http://www.cbj.gov.jo/) and the financial reports published in the Amman Stock Exchange (https://www.ase.com.jo/) during the period January 2013 to December 2024. The sample of this research consisted of the 20 Jordanian commercial banks, listed on the stock exchange of Amman.

3.2. The study variables

In order to evaluate the role of digitalized trading and dividends in the increase of banking performance, the study mainly relied upon examining the following independent, mediator, as well as dependent variables:

Table 1. Variables' measurements

Independent variables	***Description***
$EPS = \frac{\mu NI_t}{\mu NS_t}$ (1)	The *NI* represents the average value of banks' net income / the average number of shares of banks *NS* at time *t*. Review of literature showed that many researchers examined the impact of earnings per share (*EPS*) on banks' effective performance (Gichuhi, 2016; Ali, 2023).
$DPR = \frac{\mu BTD_t}{\mu BTE_t}$ (2)	The *DPR* is dividends payout ratio, the *BTD* refers to the average of banks' total deposits / the average of banks' total equity *BTE*, in the time *t* (Ali, 2023).
DPD_DUM	A dummy variable refers to the decision of banks to pay dividends. More specifically, this variable takes 1 when the correlation between *EPS* and payout ratio is positive, while it takes -1 if it is found to be negative.
Dependent variables	***Description***
$BMC = \frac{[(\mu BSCP_t \times NOS_t) - (\mu BSCP_{t-1} \times NOS_{t-1})]}{\mu BSCP_{t-1} \times NOS_{t-1}}$) (3)	This equation, which is related to the growth rate of market capitalization (*BMC*), is produced by dividing the difference between the average closing price of banks' stocks (*BSCP*), multiplied by the number of outstanding shares (*NOS*) during time *t* and time *t* - 1, by the average closing price of stocks, multiplied by the number of outstanding shares during time *t* - 1 (Ali, 2023).
$GSP = \frac{\mu SP_t - \mu SP_{t-1}}{\mu SP_{t-1}}$ (4)	The *GSP* represents the growth rate of banks' share prices, as calculated by finding the difference between the average of banks' share prices (*SP*) in time *t* and time *t* - 1, divided by the average of banks' share prices in *t* - 1.
$ZSI = \frac{\left(\sum ROA + \left(\frac{\sum Equity}{\sum Assets}\right)\right)}{\frac{\sum \sigma ROA}{TNB_t}}$ (5)	*ZSI* is Z-score index. Σ*ROA* represents banks' ROA ratio, Σ*Equity* relates to banks' equity, Σ*Assets* refers to banks' total assets, and the *σROA* stands for the standard deviation of the ROA ratio, and the TNB_t refers to the total number of banks, which are listed in the Amman Stock Exchange during the period January 2013 to December 2024 (Ali, 2023).

Note: DTA_MED is a mediator variable related to the growth rate of electronic transactions, which are executed during the period January 2013 to December 2024.

3.3. Methodology and model specification

Findings from the Johansen co-integration model revealed long-run integrations among the examined variables. Therefore, examining the following vector error correction model's (VECM) single equations helps in achieving the research's goal:

$$\Delta BP_{it} = \beta_0 \pm \sum_{i=1}^{k-1} \beta_{1i}\, \Delta BP_{t-i} \pm \sum_{i=1}^{k-1} \beta_{2i}\, \Delta\sigma EPS_{t-i} \pm \sum_{i=1}^{k-1} \beta_{3i} \Delta\, \sigma DPR_{\,t-i} \pm \sum_{i=1}^{k-1} \beta_{4i}\, \Delta DPD\_DUM_{t-1} \pm \sum_{i=1}^{k-1} \gamma_1\, \sigma EPS_{t-i} \pm \sum_{i=1}^{k-1} \gamma_2\, \sigma DPR_{\,t-i} \pm \sum_{i=1}^{k-1} \gamma_3\, DPD\_DUM_{\,t-i} \pm \psi_i \varepsilon_{t-1} \pm \mu_t \quad (6)$$

where, the ΔBP_{it} refers to the difference operator of performance, as calculated by banks' market capitalization, the growth of banks' share prices, and the Z-score index (*ZSI*) from January 2013 to December 2024. The β_i (i = 1 to 4) are the factors that need to be calculated and show the short-term dynamics. *DPD_DUM* is a dummy variable relating to the decision of banks to pay dividends. Nevertheless, the γ_1 parameters refer to the long-run multipliers. $\psi_i \varepsilon_{t-1}$ represents the error correction term's first lagged period, and the μ_t relates to the error term of white-noise with its typical characteristics. However, in order to evaluate the mediation of trading activity in the Granger causalities between dividend payout policy and banking performance, the following model will also be tested:

$$\Delta BP_{it} = \beta_0 \pm \sum_{i=1}^{k-1} \beta_{1i} \Delta BP_{t-i} \pm \sum_{i=1}^{k-1} \beta_{2i} \Delta\sigma EPS_{t-i} \pm \sum_{i=1}^{k-1} \beta_{3i} \Delta\sigma DPR_{t-i} \pm \sum_{i=1}^{k-1} \beta_{4i} \Delta DPD_{DUM\,t-1} \pm \sum_{i=1}^{k-1} \beta_{5i} \Delta DTA_{MED\,t-i} \pm \sum_{i=1}^{k-1} \gamma_1 \sigma EPS_{t-i} \pm \sum_{i=1}^{k-1} \gamma_2 \Delta\sigma DPR_{t-i} \pm \sum_{i=1}^{k-1} \gamma_3 \Delta DPD\_DUM_{t-i} \pm \sum_{i=1}^{k-1} \gamma_4 \Delta DTA\_MED_{t-i} \pm \psi_i \varepsilon_{t-1} \pm \mu_t \quad (7)$$

The *DTA_MED* refers to the digitalized trading activity as measured by the growth in the number of transactions, which are executed via the Amman Stock Exchange's NSC-V900 Electronic-Trading Platform, over the period January 2013 to December 2024. However, to prevent obtaining erroneous regression findings while dealing with time series data, it was compulsory to check for data

stationarity. Consequently, results from the ADF test revealed that at first difference, variables became stationary. Therefore, the Johansen co-integration test was run instead of linear regression. Thus, since findings from Johansen showed long-run integration among the variables, the study ran the VECM's single equation to investigate long-run causalities running from the digital trading activity and dividend payout policy towards banks' performance. The performance of banks in this research was primarily captured by the growth rate of market capitalization, the growth rate of banks' share prices, and the Z-score index. However, to ensure validity, authors, including Saunders et al. (2012) indicated that examining how earlier researchers examined secondary data identical to yours is one of the most popular methods for obtaining valid findings. Thus, since similar research, including Ali (2023), used similar measures to capture banks' performance and trading activity, it is considered that our measures are valid. Therefore, the used methodology can be applied to get similar results if researchers use the same data under the same circumstances.

4. RESULTS AND DISCUSSION

4.1. Results analysis

For the aim of investigating the influence of *DTA_MED* on Granger causalities, which are based on dividends and the performance of banks, time series data from January 2013 to December 2024 were collected. The descriptive analysis was performed to show the following results in Table 2. Therefore, the results are demonstrated as shown below:

Table 2. Summary statistics

Variable	*No of obs.*	*Mean*	*Median*	*Std.*	*Min*	*Max*	*25th per.*	*75th per.*
EPS	144	0.42	0.45	0.07	0.32	0.58	0.34	0.46
DPR	144	1.29	1.30	0.43	0.85	2.34	0.89	1.54
DPD_DUM	144	0.48	0.46	0.14	0.22	0.73	0.36	0.56
BMC	144	0.41	0.43	0.13	0.22	0.73	0.32	0.50
GSP	144	0.43	0.46	0.07	0.32	9.56	0.34	0.46
ZSI	144	3.46	3.30	0.97	2.30	5.33	2.30	4.30
DTA_MED	144	3.72	3.45	0.66	2.60	4.55	4.35	4.50

The above Table 2 illustrates that, except for *EPS*, *DPD_DUM, BMC*, and *GSP*, there are high standard deviations of the remaining variables. However, before testing the study models and hypotheses, to prevent obtaining erroneous regression findings while dealing with time series data, it was compulsory to check for data stationarity. Consequently, findings from the ADF test showed that at the first difference, all of the series variables were stationary. Therefore, Table 3 showed that after converting variables into the first difference, the stochastic trend was removed, as well as the variables found to be integrated of the same order I(1):

Table 3. Augmented Dickey-Fuller test

Variable	*Level 1%*	*p-value*	*2nd diff*	*Remarks*	*ADF test H_0*
EPS	-3.497	0.0003	-5.428***	I(1)	Reject
DPR	-3.497	0.0001	-5.758	I(1)	Reject
DPD_DUM	-3.497	0.0079	3.505***	I(1)	Reject
BMC	-3.497	0.0013	4.030***	I(1)	Reject
GSP	-3.497	0.0028	3.816***	I(1)	Reject
ZSI	-3.497	0.0008	4.619***	I(1)	Reject
DTA_MED	-3.497	0.0010	4.102***	I(1)	Reject

*Note: ADF test H_0: Variables are not stationary. *** significance at 0.01 level.*

This table demonstrates that the time series variables became stationary after adding the first difference. Since the above statistics confirmed that all the series variables are integrated of the first order, I(1), the study moved to run the Johansen co-integration test to check whether the series variables are integrated over the long run or not.

Table 4. Findings from the Johansen co-integration test

Rank	*Parms*	*Johansen test H_0*	*GSP*	*Z-score*	*BMC*	*1% critical*
			Trace statistics	*Trace statistic*	*Trace statistic*	
0	36	R = 0	265.67	263.26	270.56	54.46
1	43	R ≤ 1	175.48	174.15	175.39	35.65
2	48	R ≤ 2	106.91	107.76	98.529	20.04
3	51	R ≤ 3	48.112	49.371	47.427	6.65
4	52					

Note: Johansen test H_0: There is no co-integration vectors in the models (R = 0). VEC-rank BP, EPS, DPR, DPD_DUM, trend (constant), confidence interval 99%; trend: constant; No. obs. = 140; sample: April 2013–December 2024; lags = 3.

The above Table 4 affirms that the performance of Jordanian listed banks is integrated with the *EPS*, *DPR*, and banks' decisions to pay dividends (*DPD_DUM*), over the long run. Therefore, the study ran the ECM to examine the *H1*, which postulates that dividend payout policy significantly affects the performance of Jordanian listed banks, in the long run. Findings from this test are described in Tables 5–7:

Table 5. Findings from the error correction model

D_BMC	*Coef.*	*Std. error*	*Z*	*P > /Z/*	*99% conf.*	*Interval*
			D_BMC			
			_Ce1			
L1.	-0.2007	0.0632	-3.17	0.002	-0.3247	-0.0767
			BMC			
LD.	-0.5668	0.0710	-7.98	0.000	-0.7059	-0.4276
			EPS			
LD.	0.0312	0.0775	0.40	0.687	-0.1207	0.1832
			DPR			
LD.	-0.0079	0.0066	-1.19	0.234	-0.0209	0.0051
			DPD_DUM			
LD.	-0.0040	0.0043	-0.93	0.354	-0.0125	0.0044
_Cons	0.0009	0.0017	0.05	0.958	-0.0033	0.0034

The above Table 5 confirms that banks' performance, as captured by the growth rate of market capitalization, is significantly related to the monthly fluctuations in the *EPS, DPR*, and banks' decisions to pay dividends, over the long run.

Table 6. Findings from the error correction model

D_ZSI	*Coef.*	*Std. error*	*Z*	*P > /Z/*	*99% conf.*	*Interval*
			D_ZSI			
			_Ce1			
L1.	0.8332	0.0804	10.36	0.070	1.0403	0.6260
			ZSI			
LD.	-0.3107	0.1053	-2.95	0.003	-0.5821	-0.0393
			EPS			
LD.	-112.98	18.331	-6.16	0.000	-160.20	-65.768
			DPR			
LD.	1.5721	0.2746	5.72	0.000	0.8647	2.2794
			DPD_DUM			
LD.	-6.0546	1.4904	-4.06	0.000	-9.8936	-2.2156
_Cons	-0.0003	0.5233	-0.00	0.999	-1.3483	1.3476

As shown by Table 6, in the long term, the banks' *ZSI* and the monthly fluctuations of *EPS, DPR*, and the banking decisions about paying dividends have an insignificant relation.

Table 7. Findings from the error correction model

D_GSP	*Coef.*	*Std. error*	*Z*	*P > /Z/*	*99% conf.*	*Interval*
			D_GSP			
			_Ce1			
L1.	-0.0069	0.0033	-2.07	0.039	-0.0156	0.0017
			GSP			
LD.	0.0672	0.0842	0.80	0.424	-1.1496	0.2842
			EPS			
LD.	-0.6152	0.3365	-1.83	0.068	-1.4822	0.2517
			DPR			
LD.	0.0579	0.0101	5.73	0.000	0.03190	0.0840
			DPD_DUM			
LD.	0.0620	0.0397	1.56	0.119	-0.0404	0.1645
_Cons	-0.0020	0.0168	-0.12	0.901	-0.0455	0.0413

The above statistics confirmed that banks' performance measured through stock price increases has a significant relation to the monthly fluctuations in the *EPS, DPR*, and the banking decision about dividend payment, in the long term. However, for the aim of testing the short-term relation of banking performance and dividend payout policy, the following Wald x^2 test was applied for testing the *H2*.

Table 8. Findings from the Wald x^2 test

Variables	*BMC*		*ZSI*		*GSP*	
	Chi² (2)	*Prob. > Chi²*	*Chi² (2)*	*Prob. > Chi²*	*Chi² (2)*	*Prob. > Chi²*
EPS	17.42	0.0027	10.83	0.0470	22.68	0.0001
DPR	9.41	0.4677	4.37	0.4117	3.96	0.4115
DPD_DUM	4.13	0.6993	1.21	0.8002	2.08	0.7212

Findings from the above Table 8 assert that *BMC*, *ZSI*, and *GSP*, which are used to measure short-term banking performance, are found to be significantly affected by the *EPS*. However, this research also aims to evaluate the mediating effects of *DTA_MED* on Granger causality between dividend payout policy and banks' performance. The Johansen test was applied to check whether, in the long run, banks' performance, digital trading activity, and dividend payout policy are integrated. The results are described as shown below:

Table 9. Findings from the Johansen co-integration test

Rank	Parms	Johansen test H_0	Trace statistic		1% critical value	Rank	Parms	Trace statistic	1% critical value
			BMC, dividends	DTA_MED, dividends				BMC, dividends, DTA_MED	
0	36	R = 0	265.67	272.41	54.46	0	55	359.34	76.07
1	43	R ≤ 1	175.48	182.78	35.65	1	64	262.33	54.46
2	48	R ≤ 2	106.91	100.06	20.04	2	71	168.40	35.65
3	51	R ≤ 3	48.112	42.339	6.65	3	76	103.83	20.04
4	52					4	79	45.961	6.65
						5	80		

Note: Johansen test H_0: There is no co-integration vectors in the models (R = 0). VEC-rank BMC, DTA_MED, dividends, trend(constant), confidence interval 99%; sample: April 2013–December 2024; No. obs. = 140; lags = 3.

Given the findings above, proven that in long-term banking performance, digital trading activity and the dividend payout policy are integrated with each other. In the following ECM test was implemented to investigate the influence of digital trading activity on the relation of banks' performance along with the dividend payout policy, over the period January 2013–December 2024.

Table 10. Findings from the error correction model

D_DTA_MED	Coef.	Std. error	Z	P > /Z/	99% conf.	Interval
D_DTA_MED						
_Ce1						
L1.	-0.0793	0.0259	-3.06	0.002	-0.0124	-0.1461
DTA_MED						
LD.	-0. 0908	0.1211	-0.757	0.001	-0.2220	-0.0597
EPS						
LD.	0.0673	0.1634	0.411	0.001	0.3805	0.0141
DPR						
LD.	0.0115	0.0096	1.20	0.229	-0.0132	0.0363
DPD_DUM						
LD.	0.1613	0.0649	2.48	0.013	-0.0059	0.3287
_Cons	0.0017	0.0350	-0.05	0.961	-0.0920	0.0886

Since findings from Table 5 and Table 10 showed that dividends' measures are significantly correlated with banks' performance *BMC* and digital trading activity, over the long-run; the study moved to run the following ECM to test the *H3*, i.e. digital-trading activity is significantly mediating the causalities (long-run), from dividend's measures to the growth rate of market capitalization as a proxy for banks' performance.

Table 11. Findings from the error correction model

D_BMC	Coef.	Std. error	Z	P > /Z/	99% conf.	Interval
D_BMC						
_Ce1						
L1.	-1.5667	0.1600	-9.79	0.000	-1.9789	-1.1544
BMC						
LD.	0.1620	0.0899	1.80	0.072	-0.0696	0.3937
EPS						
LD.	0.0049	0.0014	3.49	0.002	0.0012	0.0085
DPR						
LD.	0.0766	0.0423	1.81	0.070	0.1857	0.0324
DPD_DUM						
LD.	0.0127	0.0034	3.68	0.002	0.0038	0.0216
DTA_MED						
LD.	0.0318	0.0048	6.64	0.001	0.0442	0.0195
_Cons	-0.0002	0.0021	-0.13	0.901	-0.0057	0.0051

Table 11 showed that the digital-trading activity significantly mediates the Granger causalities, which are using dividends to evaluate the performance of banks, over the period January 2013–December 2024.

4.2. Results discussion

To assess the mediating role of the digital trading system on Granger causality between dividend payout policy and bank performance, time series data were analyzed for the period January 2013 to December 2024. Thus, after running the ADF test, the findings affirmed that the series variables are stationary at the first difference. Thus, Johansen test as well as the ECM were run to examine the role of dividends as captured by the *EPS*, *DPR*, and *DPD_MED* in banking performance in Jordan, from January 2013 to December 2024. Accordingly, the findings suggest that in the long term, *BMC*, *ZSI*, and *GSP* (proxy of banking performance) are significantly impacted by the monthly fluctuations in dividends' measures, over the long run. The findings also suggest that, except for the *EPS*, the 1% increase in the *DPR* and *DPD_DUM* leads to a negative growth in banks' market capitalization by 0.79% and 0.93, respectively. By contrast, the +1% increase in the *EPS* is found to be positively impacting banks' market capitalization by 3.12%. However, the performance of banks as proxied by the *GSP* is discovered to have a negative relation with the change in the *EPS*, where a 1% increase in the *EPS* decreases the growth of banks' stock prices by 61.5%. Nevertheless, the 5.7% and 6.2% improvements in banks' stock prices are observed to be influenced by a +1% increase in the *DPR* and *DPD_DUM*, respectively. Additionally, ECM findings indicated that, although in the long term, banks'

performance *ZSI* is insignificantly related to a +1% variation in dividends, however, results from the Wald x^2 test revealed that the *ZSI*, as a proxy for banks' performance, in the short term, has a significant relation with the monthly change in the *EPS*. Likewise, statistics from the Wald x^2 test proved that in the short term, banking performance measured by the *BMC* and the *GSP* is significantly Granger-caused by the variations of *EPS*.

Furthermore, since findings from the Johansen test showed long-run integrations between banks' performance, digital trading activity, and dividends' measures, ECM is used to evaluate the mediating influence of *DTA_MED* on causalities between banks' performance and dividends. As a result, the digital trading activity is found to play a significant role in the relationship of banks' performance as proxied by *BMC*, along with dividends. In this regard, the statistics proved that a 1% increase in the *EPS*, *DPR*, and *DPD_DUM* increases the traded value of digital trading by 6.7%, 1.15%, and 16%, respectively. This implies that the increase in dividends encourages investors to adopt the digital trading system to invest in banks, and that, in turn, will increase stock prices as well as improve banks' performance as proxied by *BMC*. Therefore, statistics from Table 10 proved that the 3.18% increase in market capitalization is driven by a 1% growth in the digital trading activity.

5. CONCLUSION

Many researchers have evaluated the role of dividend policies in banks' performance; however, previous studies have shown an obvious lack about the role of *DTA_MED* to mediate the impact of dividend payout policy in banks' performance as captured by *BMC*, *GSP*, and the *ZSI*. To cover this gap, the current research is mainly designed to scrutinize the mediating influence of *DTA_MED* on the Granger causalities of dividend payout policy with the performance of listed banks in Jordan from January 2013 to December 2024. Results of the ECM affirmed that the banking performance has a significant relation with monthly variations in dividend measures, over the long run. This result agrees with Lintner (1956) and Gordon and Shapiro (1956). Based on these results, the study came to the conclusion that Jordanian investors adopt the relevance dividend theory, since they are found to prefer dividends over capital gains. Similarly, since findings from the Wald x^2 test asserted that the increase in *EPS* improves banks' performance during the short-run, investors of the Amman Stock Exchange are following the relevance of dividends' policy during the short-run as well. By contrast, Gichuhi (2016) debated that the *EPS* ratio has an insignificant effect on banking performance. However, Sheng and Montgomery (2024) confirmed a strong negative correlation between dividend payouts and firms' performance.

Furthermore, results from the error correction model affirmed that the digital trading activity is valid to mediate the long-run causalities between banks' performance and dividends. Consistently, a study by Ali (2023) revealed that the digital trading platform of the Amman Stock Exchange is significantly mediating the long-run correlations between banks' liquidity and dividend policies, over the period 2010–2020. Therefore, the current research concluded that banks' decisions regarding distributing dividends lead to improved bank performance through increasing the traded value of the digital trading system. Which means that, since investors of Jordan adopt the relevance dividends theory, the distribution of dividends motivates investors to increase their demands on banks' stocks through using the digital trading system, and that in turn will significantly impact the market capitalization of banks. However, although the current research intended to expand the data set to get more accurate results, due to data availability, the study was restricted to analyzing time series data for the period January 2013 to December 2024. Therefore, through adopting the models that are used in this research, the study recommends further research to deal with larger data in order to examine the role of dividend policies and DT in the performance of financial institutions.

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