

The Impact of Financial Technology on returns of shares for Jordanian Islamic Banks

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Abstract

This research aims to elucidate the profound impact of financial technology (FinTech) on the returns of shares for Jordanian Islamic banks, specifically, Jordan Islamic Bank, Arab Islamic Bank, and Safwa Islamic Bank. Using the descriptive analytical method, appropriate for the nature of the study, comprehensive data was meticulously gathered from various studies and reports, addressing both theoretical and empirical dimensions. The study encompasses the entire population of Jordanian Islamic banks. Through a rigorous analysis of FinTech trends spanning 2016 to 2021, the research establishes statistically significant differences (at a significance level of $\alpha \leq 0.05$) among Jordanian Islamic banks regarding their FinTech adoption. Furthermore, the study discerns statistically significant variations in the returns of shares for Jordanian Islamic banks during the same timeframe. The findings underscore the need for strategic initiatives, including targeted marketing campaigns, to enhance awareness of electronic banking. Additionally, emphasis should be placed on fortifying the security and confidentiality elements integral to electronic banking services. This research provides valuable insights for practitioners, policymakers, and stakeholders in the ever-evolving landscape of Islamic banking and financial technology.

Keywords: Financial, Technology, Islamic Banking, Shares, Jordanian Banks, Financial services.

INTRODUCTION

Over the past decades, financial technology, commonly known as FinTech, has undergone significant evolution, shaping the landscape of the financial industry. Originating from the introduction of credit cards in the 1950s to the emergence of ATMs in the 1960s, electronic share trading in the 1970s, and the advent of advanced computers in the 1980s, FinTech has continuously evolved. The integration of internet banking in the 1990s marked a significant milestone, and the subsequent widespread adoption of the internet and mobile phones, particularly smartphones, since the early 2000s, has propelled the FinTech industry into a phase of rapid innovation. This has led to the development of sophisticated financial services, including electronic wallets, payment applications, automated advisors, crowdfunding platforms, and peer-to-peer lending networks.

The symbiotic relationship between technology and finance has disrupted traditional financial intermediaries, presenting both challenges and opportunities within the financial market. In the Islamic FinTech sector, emerging companies are reassessing their strategies, with some posing as direct competitors to Islamic financial institutions, while others seek strategic alliances with them. Collaboration between Islamic financial institutions and emerging FinTech entities can leverage innovative solutions such as regulatory technology, Islamic takaful platforms, and automated Islamic wealth management portals. This collaboration enables Islamic finance to compete effectively with traditional financial institutions and expand its market share, particularly in the Arab region, where the COVID-19 pandemic has accelerated the transition to digital financial services.

Despite these advancements, challenges persist, with a significant portion of adults in the Arab region lacking access to formal financial services. Against this backdrop, electronic Islamic banking services have witnessed notable advancements in quality and quantity, yet their adoption remains below optimal levels. Hence, this study aims to explore the impact of financial technology on the returns of shares for Jordanian Islamic banks.

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From a theoretical perspective, this study fills a critical gap in existing literature by examining the impact of financial technology on the returns of shares for Jordanian Islamic banks. Limited research in this area underscores the need for a theoretical framework to deepen scholars' understanding of Islamic banking. Practically, the study offers valuable insights for decision-makers in Jordanian Islamic banks, informing strategic decisions, resource allocation, and risk management practices. Additionally, it provides investors, shareholders, creditors, and financial analysts with essential information to make informed investment decisions.

LITERATURE REVIEW

Definition and Advantages of Financial Technology

According to the Financial Stability Council, financial technology (FinTech) is defined as: "Technology-based financial innovations that can create new business models, applications, processes, or products that have a tangible impact on financial markets and institutions, and when providing financial services." Financial innovations appear in various aspects such as retail and wholesale payments, financial market infrastructures, investment management, insurance, credit provision, and capital increase (FSC, 2017).

According to the PAYFORT report, financial innovations seek to compete with traditional financial methods by providing products and services that rely on technology to improve the quality of traditional financial services. This technology is characterized by being faster, cheaper, easier, and more accessible, often developed by startups (Payfort, 2016).

FinTech involves companies or their representatives who combine financial services with modern innovative technologies, aiming to attract the largest number of customers by offering more user-friendly, efficient, transparent, and automated products and services. These services extend beyond banking to include insurance and other financial instruments (Dorfleitner et al, 2017).

Benefits of FinTech

FinTech has several characteristics, including:

Speed: Accelerating information processing

Distance approximation: Instantly transferring large volumes of information between countries

Flexibility of use: Applicable in a wide range of fields (Sasya 2007).

Storage capacity: Storing large amounts of information and accessing it easily

Role of FinTech in Enhancing Banking Services

Despite a late start in the Arab world, FinTech is gaining significant momentum, with the market currently valued at \$2 billion and expected to reach \$125 billion (IMF, 2017). According to a report by "KPMG International" in February 2020, the value of investments in FinTech nearly tripled between 2015 and 2018, but declined with the onset of the COVID-19 pandemic. The first quarter of 2020 recorded the worst quarter since 2016 for FinTech deals and the worst first quarter funding since 2017, with VC-backed FinTech funding totaling \$6.1 billion across 404 deals (CB Insights).

Investments in FinTech are driven by the tremendous opportunities this industry offers, such as lower customer costs, faster payments, more options, and easier services. FinTech facilitates access to financing for individuals and small and medium enterprises lacking adequate banking services, thus achieving higher and more inclusive growth for all segments of the population. Governments can use digital platforms to increase the efficiency of operations in revenue collection and payments. Banks can rely on technological means to raise efficiency, enhance risk management, and ensure regulatory compliance (IMF, 2017).

Role of FinTech in Islamic Banking

The "Islamic Fintech IFT" Corporation revealed on July 30, 2020, that there are no fewer than 142 Islamic FinTech companies worldwide. Table (1) shows the distribution of institutions operating in the field of Islamic FinTech according to countries for the first half of the year:

Table (1) Distribution of Islamic Technology Companies by Country

Rank	Country	No. of companies
1.	United Kingdom	27
2.	Malaysia	19
3.	United Arab Emirates	15
4.	Indonesia	13
5.	Kingdom of Saudi Arabia	9
6.	United States of America	9
7.	Others	50
Total Islamic financial technology companies globally		142

Islamic financial technology (FinTech) is set to play a crucial role beyond traditional financing, with significant growth opportunities in various areas, particularly:

Big Data and Artificial Intelligence (AI): AI aims to create computer systems that can mimic human intelligence and behavior, enabling them to perform complex tasks, make decisions, and adapt to new environments. These technologies can drive innovation and enhance Islamic financial services, such as regulatory and insurance technologies, by utilizing AI. (Wahsheh et al, 2023).

Takaful Insurance Technology (TIT): There is substantial potential to leverage insurance technology to increase the penetration of Takaful insurance among uninsured groups. FinTech can address challenges within the Takaful system, such as managing the relationship between subscribers' and shareholders' funds, by developing flexible business models that allow participants to allocate surpluses or donate them to charitable organizations (Kanduz, 2019).

Governments and private sectors are actively promoting Islamic FinTech through various initiatives. For example, the Dubai International Financial Center's \$100 million Financial Technology Fund supports Islamic FinTech, and the Islamic Financial Technology Alliance in Singapore fosters global collaboration among Islamic FinTech startups to encourage adoption among Muslims (Dinar Standard, 2020).

A specialized report indicates that technological innovations could expand the customer base of Islamic banks from 100 million to 250 million across 20 promising markets by 2021, up from just five markets in 2016 (Lazhari & Hajaj, 2018).

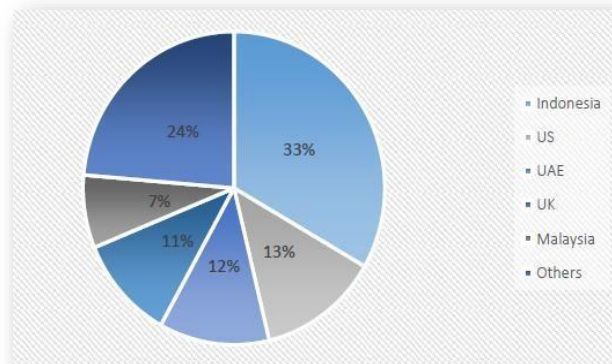


Figure (1): Distribution of emerging FinTech companies by country

Source: Hasan, Hassan & Aliyu (2020)

Figure 1 shows that the number of emerging in Islamic financial technology reached 93 companies by 2018, with Indonesia accounting for the largest share at 33%.

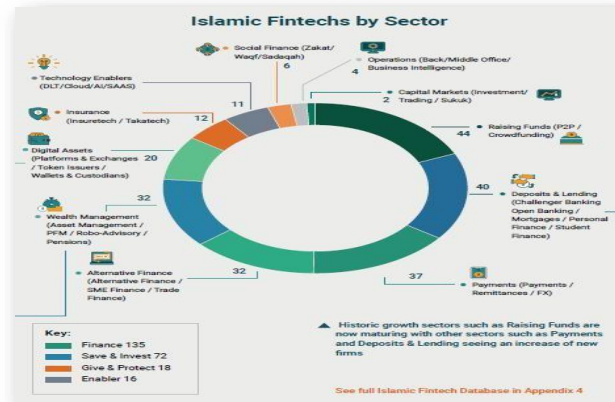


Figure (2): Islamic FinTech companies distributed by sectors

Source: Dinar standard (2020)

It is noted that in 2020, the contribution of Islamic FinTech in OIC countries was a modest 0.79% of the global FinTech market, valued at \$49 billion and expected to reach \$129 billion. Saudi Arabia ranked as the largest market for Islamic FinTech in terms of volume in 2020, as illustrated in Figure 3 below:

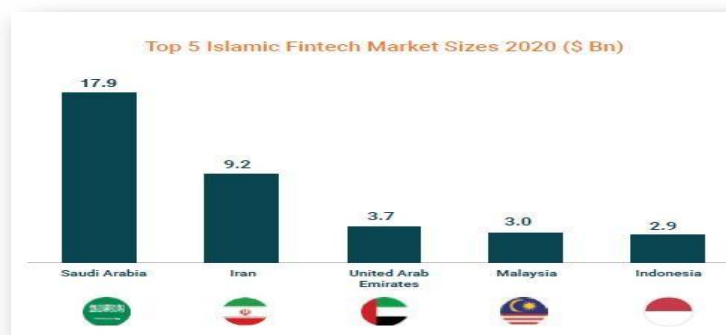


Figure (3): Islamic FinTech Market Sizes 2020

Source: Dinar standard (2020)

The Islamic economy is diversifying into non-traditional sectors such as hospitality, entertainment, fashion, and FinTech. Despite the pandemic, the global Islamic finance industry grew by 10.6% in 2020, with assets increasing by \$2.2 trillion between 2021 and 2022. According to the Global Islamic Fintech report for 2020, the volume of transactions in the Islamic financial technology market was approximately \$49 billion, accounting for 0.7% of global financial transactions. It is expected to grow by 161% to \$128 billion by 2025, with a projected compound annual growth rate of 21%. Leading markets in this industry include Saudi Arabia, the UAE, Iran, Malaysia, and Indonesia. However, challenges such as capital scarcity, consumer culture, and talent acquisition exist. The UK leads in Islamic financial technology, with 27 companies, followed by Malaysia, the UAE, Indonesia, Saudi Arabia, and the United States. Startups like Kestrl in the UK are expanding into regions with large Muslim populations, such as Southeast Asia, particularly Indonesia, home to the world's largest Muslim community. (<https://alghad.com/2021>).

The investment platform "Wahed Invest" in the US is poised to become the first truly global Islamic financial technology company, with over 150,000 clients in 130 countries and a valuation exceeding \$100 million. The company recently agreed to acquire the British startup "Niyah" to bolster its position as a "leading one-stop shop" for Sharia-compliant financial products. As nearly half of the world's 1.7 billion unbanked adults are Muslim, establishing a significant foothold in the global market is a coveted goal for brands. (Union of Arab Banks <https://uabonline.org/2022>).

Role Of Fintech in Jordanian Islamic Banking

In Jordan, the Central Bank is actively fostering development and innovation in FinTech, especially amidst the COVID-19 crisis, recognizing the vital role of digital transformation in the financial sector. Collaborative efforts between the Central Bank of Jordan and the Crown Prince Foundation aim to develop Jordan's FinTech sector, particularly to benefit youth and startups. (Central Bank of Jordan Website).

Jordan's cash-reliant economy, coupled with an aging banking sector, presents fertile ground for FinTech innovations. Initiatives like the "eFAWATEERcom" platform signify a concerted effort to harness this potential. With only 24% of Jordanians owning bank accounts and hurdles in accessing loans, the rise of a tech-savvy youth demographic and increasing internet penetration indicate a burgeoning consumer market. The dependence on remittances underscores the need for cost-effective financial alternatives. Companies like MadfoatCom, EMP, Green Wallet, along with other entrepreneurs, are actively introducing innovative solutions to reshape Jordan's financial landscape. (<https://www.wamda.com/2020>).

Furthermore, the launch of "Jordan FinTech Bay (JFB)" by the Global Financial Entrepreneurship Technology Federation aims to provide digital solutions, advisory services, and acceleration programs for financial entrepreneurship in Jordan. Additionally, events like blockchain conferences, insurance technology forums, and regulatory technology seminars contribute to the sector's growth.

Notably, "ModfoatCom" and "HyperPay" secured spots on the Forbes list of the most powerful financial technology companies in the Middle East for 2020. (<https://alghad.com/2020>).

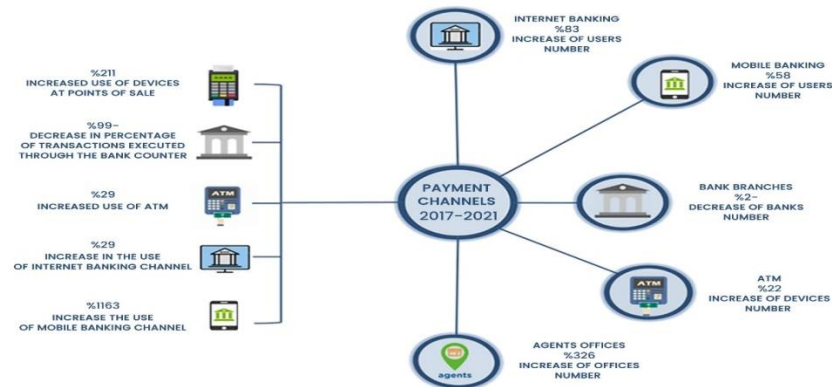


Figure (4): Payment channels' development from 2017-2021

Source: Forbes website 2021

Islamic banking in Jordan is represented by four banks, three of which are Jordanian: Jordan Islamic Bank (established in 1979), International Arab Islamic Bank, and Safwa Islamic Bank (formerly Jordan Dubai Islamic Bank). The fourth is Al-Rajhi Bank from Saudi Arabia. Jordanian Islamic banks have experienced significant growth, contributing about \$10.9 billion (17% of total banking assets) to the national economy by the end of 2017. Savings deposits in these banks reached approximately \$10.3 billion (19% of total deposits), while financial investment balances amounted to around \$7.5 billion (23% of total loans). Property rights of Jordanian Islamic banks totaled about \$1.1 billion (12% of the total), and the net profits after taxes for the four Islamic banks were approximately \$132 million by the end of 2017, constituting about 17% of the total profits in the Jordanian banking sector.

Between 2017 and 2021, the number of automatic teller machines (ATMs) in Jordan increased by 22%, while the number of bank branches decreased by 2%. According to the sixth annual report of the payment system in Jordan 2021, the growth and development in payment channels witnessed significant changes. The number of agent offices in Jordan increased by 326% from 2017 to 2021. Additionally, the number of mobile banking users surged by 584%, while internet banking users increased by 83%. Conversely, transactions executed through bank counters decreased by 99%, contrasting with a significant increase of 1163% in mobile banking

channel usage. Internet banking usage also increased substantially by 88%, alongside a rise of 211% in POS device usage and 29% in ATM usage. (Al-Ghad Newspaper 2022 <https://alghad.com>).

Jordan Islamic Bank has embraced modern technological developments by expanding its digital banking services, including Islami Mobile, Islami Internet, online shopping (3D Secure), Islami Short Messages (SMS), bill payment service (E-fawatercom), and electronic wallets (JoMoPay) through its mobile banking application. It has also introduced digital self-services (Islami Digital) to meet customer needs efficiently and maintain high standards of risk management. To enhance customer communication, the bank launched Islami Messenger (a digital assistant), a 24-hour direct call center, Interactive Voice Response service (IVR), and social media presence on platforms like Facebook, Instagram, and LinkedIn. The bank offers both MasterCard and Visa cards, supporting contactless payment technology via NFC to conduct purchase transactions. Additionally, it provides banking services during official holidays and on Fridays, Saturdays, and evenings through branches and offices, and offers modern services through its Islami-ATM service, with 279 machines located throughout the Kingdom. kingdom (Al-Ghad newspaper 2021 <https://alghad.com>).

Table (2): The Number of Cards, Branches and Atms of Jordanian Islamic Banks Until the End Of 2020

Bank	Cards	No. of open branches	No. of ATMs
Jordan Islamic Bank	3629	83	189
Islamic Arab Bank	8128	45	54
Safwa Islamic Bank	6506	38	38
Al Rajhi Bank	1964	10	16
Total	20227	176	297

Source: Jordanian Association of Banks report, the most prominent banking developments 2020

Table (3): Services Provided by Atms of Jordanian Islamic Banks Until the End Of 2020

Bank Name	Cash withdrawal in dinars	Cash withdrawal in other currencies	Direct cash deposit	Cash deposit through an envelope	Check deposit	Balance inquiry	Obtain a mini account statement	Pay bills (water, electricity, gas).	Transferring funds between the accounts of the same	Transferring funds between customer accounts within the	Transfer money to accounts in other banks	Credit card payments	Submit a check book request	Submit an application for a loan	account statement request	PN change	eye print	Anti-skimming
Jordan Islamic Bank	√		√			√	√	√	√				√		√	√		√
Islamic International Arab Bank	√		√	√		√	√		√	√					√	√		√
Safwa Islamic Bank	√		√			√	√									√		√
Al Rajhi Bank	√		√			√	√		√	√						√		√

Source: The Jordan Association of Banks report, the most prominent banking developments 2020

Related Previous Studies

The literature on the impact of financial technology (FinTech) on Islamic banking and its implications for the returns of shares for Jordanian Islamic banks is extensive and multifaceted. Numerous studies have explored various aspects of FinTech adoption, regulatory frameworks, technological innovations, and their effects on

Islamic banking practices and performance. Here, we present a more comprehensive review of relevant literature, categorized according to key themes:

FinTech Adoption in Islamic Banking

Studies by Abdullah et al. (2019) and Al-Azizi et al. (2020) investigate the factors influencing FinTech adoption in Islamic banking institutions, including organizational culture, regulatory environment, and technological infrastructure.

Research by Haq et al. (2021) and Saleh et al. (2018) explores the impact of FinTech adoption on organizational performance and competitive advantage in Islamic banks, highlighting the role of innovation in driving financial inclusion and customer satisfaction.

Regulatory Environment and Compliance

Analyses by Farooq et al. (2017) and Ibrahim et al. (2019) examine the regulatory challenges and opportunities associated with FinTech integration in Islamic banking, emphasizing the need for adaptive regulatory frameworks that promote innovation while ensuring Sharia compliance.

Studies by Khan et al. (2020) and Rahman (2021) assess the effectiveness of regulatory initiatives in fostering a conducive environment for FinTech development in Islamic finance, addressing concerns related to consumer protection, risk management, and ethical governance.

Technological Innovations and Financial Products

Research by Ali et al. (2018) and Hussain et al. (2020) investigates the role of emerging technologies, such as blockchain, artificial intelligence, and machine learning, in shaping the future of Islamic banking services, including digital payments, crowdfunding platforms, and robo-advisory solutions.

Analyses by Karim et al. (2019) and Rahman et al. (2020) explore the potential of FinTech innovations to enhance financial literacy, improve access to Islamic microfinance, and promote sustainable development goals in Islamic economies.

Financial Inclusion and Economic Development

Studies by Malik et al. (2018) and Siddiqui et al. (2021) examine the impact of FinTech initiatives on financial inclusion and economic empowerment in Muslim-majority countries, highlighting the role of mobile banking, digital wallets, and peer-to-peer lending platforms in bridging the gap between formal and informal financial sectors.

Research by Sultana et al. (2019) and Uddin et al. (2021) assess the socio-economic benefits of FinTech adoption for marginalized communities, women entrepreneurs, and small-scale enterprises, contributing to poverty alleviation and sustainable development objectives.

In this context, the researchers also incorporated several previous studies. Abu Razak et al. (2020) focused on evaluating financial technology in Malaysia and its impact on the financial sector, emphasizing the need for Sharia-compliant regulations to govern financial technology activities in Islamic finance. Similarly, Bouchama & Barakat (2019) addressed modern financial innovation models for activating non-profit Islamic financing tools, highlighting the role of financial innovation in developing Islamic finance. Mohamed's study (2020) aimed to assess real activities profits management policies during capital increases, exploring their impact on share prices and returns. Additionally, Hanini (2020) examined the design of Islamic financial options for speculation and risk management, proposing modifications to align with Islamic economic principles. Ndungo et al. (2017) investigated the effect of sharing credit information on the financial performance of SACCO companies in Kenya, emphasizing its positive relationship. Furthermore, Joseph et al. (2005) conducted an exploratory study on banking technology use in the United Kingdom, identifying areas of customer dissatisfaction. Lastly, Al-Adaileh (2006) analyzed factors affecting the use of e-banking services from customers' perspectives in the southern region of Jordan, highlighting obstacles and recommending marketing campaigns to increase awareness and enhance security and confidentiality.

Aim And Hypotheses

The aim of this study is to examine the impact of FinTech on returns of shares for Jordanian Islamic banks. Limited research has been conducted on this topic, especially within the context of the Islamic financial sector in Jordan. Based on past studies, the following hypotheses are proposed:

H0: There is no statistically significant effect of financial technology on the returns of shares in Jordanian Islamic banks during the period (2016-2021).

H1: Financial technology has a statistically significant effect on the returns of shares in Jordanian Islamic banks during the period (2016-2021).

METHODOLOGY

The methodology section outlines the procedural steps undertaken in the study, including data collection, analysis, and any computational techniques employed. It also specifies the primary data sources and any algorithms utilized. The presentation adheres to academic conventions for clarity and reproducibility.

The study employs a retrospective cohort design, analyzing data from Jordanian Islamic banks over the period from 2016 to 2021. The study population consists of all Islamic banks operating in Jordan during the specified timeframe.

A purposive sampling method is utilized to select three Jordanian Islamic banks for the study: Jordan Islamic Bank, Safwa Islamic Bank, and Islamic International Arab Bank. These banks are chosen due to their prominence and representativeness within the Jordanian Islamic banking sector.

Primary data sources include financial statements, annual reports, and other relevant documents obtained directly from the selected banks. Secondary data sources encompass publicly available information from the Amman Stock Exchange website, regulatory authorities, and reputable financial databases. The data collected include key financial metrics such as total assets, net income, return on equity, and capital adequacy ratios.

Statistical software such as E-Views is employed for data processing and analysis. Descriptive statistics, including arithmetic means and standard deviations, are computed to summarize the main variables. Inferential statistics, such as correlation analysis and regression models, are used to examine relationships between variables and test hypotheses. The analytical approach follows standard methodologies in financial research, ensuring robustness and reliability of results.

The algorithmic procedure involves collecting financial data from selected Islamic banks for the study period (2016-2021), cleaning and preprocessing the data, computing descriptive statistics, conducting correlation and regression analyses, and validating results through sensitivity analysis and diagnostic tests.

To ensure data accuracy and reliability, validation checks are conducted at various stages of the analysis. Sensitivity analysis is performed to assess the robustness of results to variations in model specifications and assumptions.

The study primarily relies on secondary sources, encompassing a wide array of available materials from both Arab and foreign origins. These materials include previous studies, research papers, publications, and books accessed through libraries and the Internet. Additionally, financial data utilized in the study was extracted from financial statements, annual reports, and information pertaining to Jordanian Islamic banks from the period spanning 2016 to 2021, as published on the Amman Stock Exchange website and the websites of Islamic banks.

To process the study's data, the E-Views software was employed. The analytical process involved the application of various statistical measures and tests, including arithmetic means and standard deviations, linear correlation coefficient, Durbin-Watson (D-W) test, and simple and multiple linear regression analysis, to test the effect of the independent variables on the dependent variable.

Table (4): Descriptive statistics of FinTech for the period (2016-2021)

The Scale	Financing Risks
Arithmetic Mean	%0.90
Standard Deviation	%0.84
Highest Value	%2.09
Lowest Value	%0.03

From Table (4), it is observed that the average FinTech implementation over the period 2016-2021 was 0.90%, with a standard deviation of 0.84%. The highest recorded value was 2.09%, while the lowest was 0.03%. These statistics indicate a convergence among Islamic banks in terms of financial technology adoption, likely due to similar implementation levels across Jordanian Islamic banks. This convergence is further supported by the Central Bank's directives, which emphasize the importance of continuous technological advancement through reputable international firms to manage financing risks effectively

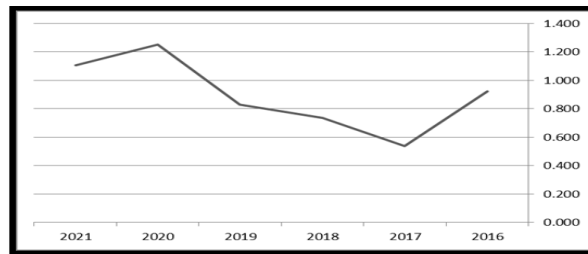


Figure (5): change in FinTech values in Islamic banks during the study period.

Table (5): Descriptive statistics of the variable returns of shares of Islamic banks for the period (2016-2021)

The Scale	Returns Of Shares Of Islamic Banks
Arithmetic Mean	0.23
Standard Deviation	0.11
Highest Value	0.36
Lowest Value	0.06

Table 5 shows that the average returns of shares for Islamic banks over the period (2016-2021) were (0.23) with a standard deviation of (0.11). The highest recorded value was (0.36), while the lowest recorded value was (0.06). This outcome can be elucidated by considering that the return on shares serves as a key indicator of the profits realized by individuals and companies investing their savings in Islamic banks. It also reflects the confidence that customers place in the operations of Islamic banks.

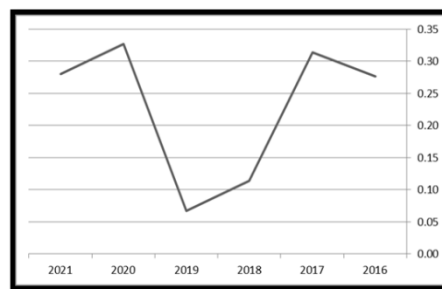


Figure (6): The change in the values of returns of shares of Islamic banks during the study period

The researchers further examined the distinctions among Islamic banks concerning financial technology and share returns by employing a one-way analysis of variance (ANOVA). The details of these findings are elucidated in Table No. (6).

Table (6): Results Of Applying One-Way Analysis Of Variance (ANOVA) To Study The Differences Between Islamic Banks And Share Returns

Variable	Bank	Mean	SD	Sources Of Contrast	Sum Of Squares	Df	Average Of Squares	F	Sig.
Financial Technology	Jordanian Islamic	0.009	0.007	Between Groups	0.001	2	0.0001	17.792*	0.000
	Safwa Islamic	0.001	0.000	Within Groups	0.0001	15	0.0001		
	Arab Islamic International	0.017	0.005	Total	0.001	17			
Shares Returns Of Islamic Banks	Jordanian Islamic	0.29	0.04	Between Groups	0.175	2	0.087	65.609*	0.000
	Safwa Islamic	0.09	0.03	Within Groups	0.020	15	0.001		
	Arab Islamic International	0.30	0.04	Total	0.195	17			

*Statistically significant at ($\alpha \leq 0.05$).

Table 6 highlights several key observations regarding the implementation of financial technology and returns on shares among Jordanian Islamic banks.

First, significant variations exist among these banks in their levels of financial technology, as indicated by an (F) value of 17.792, significant at $\alpha \leq 0.05$. To pinpoint the sources of these differences, post-hoc comparisons using Scheffe's method were conducted, revealing that the Islamic International Arab Bank stands out. With an arithmetic average of 0.017, this bank demonstrates the highest level of financial technology among its peers, likely due to the higher confidence it enjoys compared to other banks.

Second, disparities are also evident in the returns on shares across Islamic banks, as reflected by a statistically significant (F) value of 65.609, also significant at $\alpha \leq 0.05$. Scheffe's post-hoc comparisons again show that the Islamic International Arab Bank leads in this area. The arithmetic average of returns on shares for Jordanian Islamic banks is 0.30, the highest among the banks. This superior performance can be attributed to the advanced financial technology employed by the bank, the characteristics of its customers and entrepreneurs, and the bank's strong reputation and widespread recognition.

RESULTS AND DISCUSSION

In Table 7 the values of the correlation coefficients have been calculated between the independent variables of the study, and the results are as follows:

Table (7): Matrix of Correlation Between Independent Variables

	1	2	3
No. of Branches	0.669	1	
No. of ATMs	-0.445	-0.87	
No. of electronic cards	1		
Other electronic Services	-0.335	-0.317	1

Table (7) shows that the largest value of the correlation coefficients between variables amounted to (0.669), and this value indicates that the data is free from the phenomenon of multiple linear correlation of variables, because it was less than (0.80), and this confirms that the variables are correlated with each other, which indicates the possibility of applying multiple regression analysis.

To confirm this result, the Variance Inflation Factor (VIF) values were calculated, and the results were as follows:

Table (8): Variance Inflation Coefficient Values for The Independent Variables of The Study

Variable	VIF
Financial Technology	1.047

Table (8) shows that the values of the variance inflation coefficients amounted to (1.047), and this is an indication that the data is free from the phenomenon of multiple linear correlation, which is the problem whose existence means that an independent variable is a function of another independent variable, that is, it increases with its increase and decreases with its decrease; As the study model is considered free from the problem of

linear duplication between the independent variables. The values of the variance inflation coefficient were appropriate in that they are less than (10), as well as the permissible variance values that met the acceptance criterion, which is that their value is greater than (0.1).

The self-correlation was verified by conducting the (Durbin - Watson Test) for the study model, and the value is considered acceptable as it ranged between the two numbers (0, 4). Table No. (9) shows the results of the (Durbin - Watson Test) for the hypotheses of the study, as follows:

Table (9): Test the Autocorrelation Problem

Calculated Value of W-D	Result
1.344	There is no high correlation

Table (9) shows that there is no autocorrelation phenomenon, as the calculated (D-W) values were confined between (0-4), as autocorrelation is defined as the existence of a relationship between successive random errors calculated from the regression model estimated by the method of least squares, which is as a result, there are some standard errors. The test is carried out using the Durbin-Watson test, where it was found that the (Durbin-Watson) values are less than (3), which indicates that it is acceptable for the symptoms of the application.

The stability of data in time series in general and for financial and economic data in particular is one of the most important topics in the analysis, because unstable data gives incorrect results or misleading results, and this is called Spurious Regression (Gujarati and Porter, 2009). There are statistical methods through which the stability of data is tested, the most important and accurate test is the unit root test, which aims to examine the properties of the time series for each variable.

Table (10): Unit Root Test Results

I(1)	I(0)	Variables
-2.80311* (0.00)	-1.00246 (0.89)	Financial Technology
-4.72631* (0.00)	-7.10111* (0.00)	Returns on shares of Islamic banks

Notes: (1) The unit root of the variables was tested using the Im et al. (2003). (2) The numbers in brackets indicate the probability value of the unit root test. (3) The symbol * denotes significance at the 1% level of significance. (4) The findings from Table (10) reveal that the variables in this study exhibit stability at the first difference, with a significance level of 1%. This indicates that the data utilized in the study is stable, thereby ensuring the accuracy of the results obtained and precluding the likelihood of any misinterpretation.

To verify the desired objectives of the study, the panel data approach was relied upon, as the data included time series for the values of the variables within each model and at each item (cross section) during the period of the study, and the Panel data is characterized by taking into account the existence of individual differences, as well as giving the data greater usefulness and diversity, and reducing the correlation between variables, in addition to the presence of a large number of degrees of freedom, which is more efficient than time series that often suffer from the problem of autocorrelation, as it has the ability to show and measure the unobserved effects through descriptive analysis and time series analysis, and for this, the estimation methods of longitudinal time models (Panel data) were used, which are:

Pooled Regression Model (PRM).

Fixed Effect Model (FEM).

Random Effect Model (REM).

To determine which of the above-mentioned models is preferred to be tested and used in the analysis, the Lagrange Multiplier test was performed, which is used to choose between (REM) and (PRM), and the (Hausman test) was used to choose between (FEM) and (REM). The results were as follows:

Table (11): Lagrange Multiplier Test and Hausman Test

Lagrange Multiplier		Hausman		The most accurate and consistent model
Ch2	Sig	Ch2	Sig	
0.832	0.969	29.351	0.00	

The Random Effects Model (REM), and the null hypothesis is as follows:

H0: The performance of the Pooled Regression Model (PRM) is more consistent than the Random Effects Model (REM).

The results of Table (11) indicate that the Fixed Effects Model (FEM) was the most accurate in estimating the model for the three hypotheses of the study, as the (Hausman) test showed that the level of significance was less than (0.05), and the values of the (Lagrange Multiplier) test were statistically significant of (0.05), and therefore the Random Effects Model (REM) is the most accurate in estimating the study models.

The following Table is a presentation of the results of testing the hypothesis of the study, as follows:

Table (12): Model summary and analysis of variance

dependent variable	Model Summary			ANOVA	
	The coefficient of determination R ²	The Adjusted coefficient of determination AdjustedR ²	The standard error of the model	The calculated (F) value	Statistical significance
Share returns	0.675	0.606	0.067	9.708	0.000

Table (12) shows that, the model's significance is evident, with an F-value of 9.708 and a significance level of 0.00, which is less than 0.05. This confirms the overall significance of the model. The determination coefficient (R²) value is 0.675, indicating that 67.5% of the variation in the returns of shares for Islamic banks can be explained by the combined variation in the independent variables, accounting for any remaining constant factors. Therefore, we reject the null hypothesis and accept the alternative, affirming that there is a statistically significant effect, at the significance level ($\alpha \leq 0.05$), of financial technology on the returns of shares of Jordanian Islamic banks during the period (2016-2021).

Table (13): Regression Coefficients for The Independent Variables

Independent Variables	Coefficients (B)	Value Of (T)	Statistical Significance
Regression Constant	0.043	0.323	0.751
Financial Technology	7.963-	2.992-	0.010

According to Table (13), a significant observation emerges: there is an inverse effect with statistical significance at the level of $\alpha \leq 0.05$ for financial technology on the returns of shares of Jordanian Islamic banks during the period 2016-2021. The corresponding values are -7.963 and -2.992, indicating a negative and statistically significant relationship. Consequently, the null hypothesis is rejected in favor of the alternative hypothesis. This outcome may be attributed to the transformative impact and utilization of financial technology. Furthermore, it could be influenced by maintaining a specific percentage of the return on shares and the ratio of capital to total legal assets, which allows banks to establish appropriate systems, human resources, and technology for the stability of their operations.

CONCLUSION

This study aims to analyze the impact of financial technology (FinTech) on the returns of shares for Jordanian Islamic banks during the period from 2016 to 2021. The study employs a retrospective cohort design to analyze data from four Islamic banks operating in Jordan: Jordan Islamic Bank, Safwa Islamic Bank, International Arab Islamic Bank, and Al-Rajhi Bank. The following key findings were concluded:

Variation in Levels of Financial Technology

The study found significant differences among Islamic banks in their level of financial technology usage, with the International Arab Islamic Bank exhibiting the highest level of financial technology compared to other banks. This is attributed to the high level of trust the bank enjoys among its clients.

The arithmetic mean of financial technology usage for the International Arab Islamic Bank was 0.017, the highest among the Islamic banks.

Variation in Share Returns

The results indicated significant differences among Islamic banks in terms of share returns, with the International Arab Islamic Bank again showing the highest average share returns (0.30).

This distinction is attributed to the nature of the financial technology provided by the bank, the characteristics of the clients and entrepreneurs, and the bank's reputation and fame.

Impact of Financial Technology on Share Returns

The study found an inverse and statistically significant impact of financial technology on the returns of shares for Jordanian Islamic banks during the study period. The associated values were -7.963 and -2.992, indicating a negative and statistically significant relationship.

This outcome may be due to the transformative impact of financial technology and its utilization, as well as maintaining a specific rate of return on shares and the capital-to-total-legal-assets ratio, enabling banks to provide suitable systems, human resources, and technology for the stability of their operations.

Development in Payment Channels

Between 2017 and 2021, the number of ATMs increased by 22%, while the number of bank branches decreased by 2%.

The number of mobile banking users increased by 584%, while internet banking users increased by 83%.

Finally, the findings indicate that financial technology has a complex impact on the performance of Jordanian Islamic banks, improving certain operational aspects but potentially negatively affecting share returns in the short term. Banks are recommended to adopt balanced strategies to maximize the benefits of financial technology while maintaining stable returns.

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