Original Research Article

Measuring and analyzing the impact of investor preferences on bank returns A study of a sample of Qatari commercial banks for the period 2010-2020

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ABSTRACT

The study sought to focus on the behavioral aspects of investors by measuring and analyzing the trend, extent, and nature of the impact that investor preferences have. The investors' preferences are represented by variables including (the size of the IPO, the number of executed contracts, and return on share) in the bank returns (return on deposits) for a sample of Qatari banks listed in the Doha Securities Market for the period (2010-2020), and to overcome the research problem, the study formulated the following question: Is there an impact of investor preferences on the returns of Qatari banks? On this basis, the study assumed that "the preferences of investors have an impact on the banking returns of the sampled banks". Through the analysis of the longitudinal data of the variables and interpreting the results by relying on the (Eviews 10) statistical program, the results indicated a positive impact of (the number of contracts executed) and (the size of the IPO) and a negative impact of (the rate of return on share) on (the rate of return on deposits), and the research recommended the need to recognize such preferences in the theory of financial behavior and to focus on the preferences of investors as it represents a significant dimension that affects banking returns.

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Keywords: investor preferences, bank returns, financial behavior

UNDER PEER REVIEW

1. INTRODUCTION

Today's world has seen numerous changes in technological and information-related activities, resulting in the emergence of modern theories, such as the theory of financial behavior, which studies investor preferences and measures the ability to make financial decisions within the available alternatives and choose the best alternative to achieve the highest possible return, as investor preferences vary according to their desires and effort to achieve the highest returns and balance it with risks by investing the available funds in various investments.

The process of planning, managing financial investments, and making decisions is based on previous events as well as the subjective preferences of investors who express their needs and desires through a set of considerations, determinants, and rules that influence the selection of one investment field or company over another. There are a number of indicators used to measure investors' preferences, such as the volume of trading, the size of the IPO, the return on shares, and the number of executed contracts, which will be used in the study to investigate the nature of the cause-and-effect relationship between these indicators and bank returns via the index of return on deposits.

Research Problem:

The research problem is framed in the following questions:

1. Do investors' preferences impact their dimensions (number of executed contracts, subscription size, return on shares) on bank returns?
2. How are bank returns affected by investors' preferences and what is the nature of the relationship between them?

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Research Importance:

The study's significance lies in investigating such a title by presenting a precise concept of investor preferences and the basic rules that govern them, as well as the trade-off between such preferences. Furthermore, the study provides a set of solutions through the results that assist the selected banks in becoming aware of the indicators used in the study and that affect bank returns at a time when the financial and banking literature has focused on the behavioral side of investors in measuring and analyzing the relationship between investor preferences and banking returns.

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Research hypothesis:

Based on the research problem, it can be assumed that "there is a significant effect of investor preferences represented by (the number of executed contracts, the size of the IPO and the return on shares) on bank returns."

Research Objectives:

1. An integrated knowledge framing of the research variables represented by investor preferences and banking returns through a review of related studies.
2. To present the indicators measuring risk-adjusted returns, and the clarification of the relationship between return and risk.
3. Measuring and analyzing the indicators of investor preferences and their reflection on bank returns.

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Sample and population

The research population is represented by the Qatari banking sector, and the research sample was ten Qatari commercial banks for the period from 2010-2020.

Research Methodology

The research relied on the descriptive approach and analytical methods to reach the desired outcome and to answer the research question by relying on a number of indicators through which investors' preferences can be measured, namely (the size of the IPO, the number of executed contracts, and the return on shares) and presented their impact on bank returns.

PART ONE: INVESTOR PREFERENCES AND THEIR REFLECTION ON BANK RETURN

First: The development of financial investments and investor preferences

In light of technological and information developments, financial investments have increased and investors' desire and ambition to achieve returns more than expected as investing in

UNDER PEER REVIEW

securities achieves large and fast returns, but on the other hand requires great experience to achieve such high returns [1], thus, the preferences of investors to achieve returns increase over time as it represents the main goal that all investors seek. The concept of investor preferences can be represented from different angles, namely, that the preferences of investors are their ability to make financial decisions within the available alternatives and choose the best alternative to achieve the highest possible return. Investors' preferences can also be defined as the diverse desires of investors to achieve the main goal they seek to achieve. Moreover, such preferences can be described as the real value that the investor obtains as a result of choosing the investment that achieves the best return resulting from making the best investment decision [2].

The preferences of investors contribute significantly to increasing the achievement of return through their preferences in choosing the best investments that achieve the highest returns, and this is done by seeking to diversify their investments, whether in the investment portfolio or by entering new markets [3].

The changes in the interest rate affect the returns achieved by banks through the interest obtained from loans. Such effects of the interest rate are working as a factor which reflect in the bank's balance sheet and the size of the returns achieved, in addition, the pricing of securities, especially stocks, is important for central banks to achieve financial stability, as the development of banks and financial markets contributes to increasing economic growth [4]. In this regard, the preferences of investors play a major role in the development of investment, which certainly contributes to the development of financial markets and the banking sector, which in turn is reflected in increasing economic growth [5].

Second: Indicators of Investors' Preferences

The preferences of investors vary according to their desires to achieve the highest returns; thus, their preferences vary according to the degree of preference of each investor considering the balance between the size of the return achieved and the risks associated with achieving the best return. Below are the most important indicators to measure investors' preferences: [6][7] .

1- **Trading volume**: The trading volume indicator is one of the important indicators for investors' preferences, as it represents the number of shares that are traded in the financial markets. such volume is affected by the transaction costs, as investors tend to obtain liquid assets, which are very important, especially for commercial banks.
2- **Trading of Retail Investors**: Retail investors represent individual investors that have a significant impact on financial decisions due to their influence on the prices of securities, as they tend to achieve the highest possible return.
3- **Stock turnover**: This indicator represents the number of times shares are traded in the market, which is affected by the return on investment, moreover, the indicator represents the last degree of market liquidity, where the higher the trading rates on the stock, the higher its liquidity, which represents the preferences of investors to achieve the highest possible return.
4**- IPO Size**: This indicator contributes to determining investors' preferences by analyzing historical data of the investors and adopting such data as a map, as it represents the volume of demand for the initial issuance of shares and consider to be sensitive to investors' preferences and provides great opportunities for investors until the date of the IPO.
5- **Return on Share**: This indicator represents the most important preferences of investors as it achieves the preferences of investors by achieving the highest possible return desired by the investor and seeks to achieve it, additionally, this indicator helps in choosing the best alternative to invest in securities (stocks) and select the best stocks

UNDER PEER REVIEW

and in the formation of the optimal investment portfolio that achieves the highest return and the least risk.

Third: Investors' preferences and their reflection on bank return

The preferences of investors direct their effort towards choosing the best available alternatives for investment and forming an investment portfolio, and the goals of investors, whether individual investors or banks vary, so their choice of the best alternative contributes to the development of investment to achieve the best return. such return also represents the main goal of the banks, which they always seek to achieve. Bank achieves such returns as a result of exploiting the funds available to the bank in various banking investments and managing securities portfolios. When trying to achieve an appropriate return, Banks face and try to avoid many risks in order to ensure achieving the return that the investor expects to receive in the future in exchange for investing his/her money and to match the investor's preference represented by always to achieve the highest return [8].

The return can also represent the cash flow resulting from the investment of a certain amount and is measured in absolute numbers or is attributed to the funds that made it, as for the time to obtain the cash flows the closer the time of cash flow in, the better the situation due to the time value of money [9]. Returns usually increase with increased risk, and banking departments direct a large part of their efforts to balance the acceptable returns at each level of risk and the decision always remains in favor of obtaining the highest possible return for the given level of risk and accepting the lowest possible risk for the same level of return [10].

Banks seek to achieve the target return to compensate its funds that were directed to the purchase of securities, which is called the return against time, as well as achieving a return that is sufficient to compensate the bank for the risks to which its invested funds are exposed to, so it is imperative for the investment bank to balance between the return it prefers and the risks that might be exposed to as a result of choosing this investment [12].

Banks aim to achieve the best possible return within the investment options available to them to choose the best and achieve the maximum possible return that achieves their preferences. Two rules govern the trade-off between the available investments in terms of the return achieved and the potential risk[13], the first rule indicates that if the risks are equal and similar, the trade-off is made between them based on the expected return, i.e. choosing the investment that generates the largest return, while the second rule focuses on that if the expected returns from investments are equal, then the trade-off is made among them are risk-based in the sense of choosing the least risky investment [11]. Therefore, the return and risk are linked together in a direct relationship in the sense that the higher the return, the higher the risk, and the lower the return, the lower the risk[14].

The bank achieves the return on investment through loans and securities, which represent the bank's investment portfolio, and good management of such portfolio requires achieving its objectives, which are to achieve the maximum return and ensure the provision of liquidity to the bank as well as avoid exposure to bankruptcy risks. The indicators that measure risk-adjusted return vary, below are the most important ones: [16][8][15] .

1- **Risk-adjusted return / total assets**: The return on total assets indicator is usually used, but in order to take the risk into account, the risk-return is adjusted to risk-adjusted return on the total assets.

UNDER REVIEW

2- **Risk-adjusted return/capital**: This indicator also takes the risk calculation in the sense that the return is adjusted by risk, and thus the index becomes the risk-adjusted return on capital instead of the return on capital.
3- **Risk-adjusted return / risk-adjusted capital**: This indicator is one of the accurate indicators as it calculates risk, meaning that the return is adjusted by risk and the capital is adjusted by risk as well, that is, it takes the risk in both the return and the capital.
4- **Rate of return/assets**: The contribution of this indicator represents in measuring the effectiveness of assets in generating profits, which is one of the important measures as it indicates the bank's ability to manage the assets efficiently and generate profits.
5- **Rate of Return/Equity**: This indicator is used to measure what owners get as a result of investing their money in the bank's activity. Furthermore, it is characterized by expressing the profits received by shareholders in the form of cash dividends or in the form of retained dividends.
6- **Rate of return/deposits**: It measures the bank's ability to generate profits from the deposits that it succeeded in obtaining, and it can be calculated by dividing the net profit after tax on deposits, and it represents the net rate of return on deposits, as the interest on deposits has been deducted from the net profit.
7- **Interest margin**: It reflects the measurement of the return generated from profitable assets (income generators) and can be calculated by dividing the difference between the income from interest received and interest paid on profitable assets.

PART TWO: MEASURING AND ANALYZING THE IMPACT OF INVESTORS' PREFERENCES ON BANKING RETURNS

First: Descriptive statistics of the study variables

Table (1) shows the descriptive statistics of the dependent and the independent variables used in this study which were taken from (6) banks during the period (2010-2020), with (66) observations for each of the mentioned variables.

Table 1. Characteristics of the descriptive statistics

	Y	X1	X2	X3
Mean	11577401	44163.02	56483425	4.698924
Median	3134484.	36833.50	8236433.	3.580000
Maximum	61752769	191213.0	8.4008	14.90000
Minimum	4873.156	451.0000	16520.00	0.160000
Std. Dev.	18571845	38158.35	1.7508	3.999076
Skewness	1.724367	1.759190	3.683217	1.191501
Kurtosis	4.324456	7.140669	14.84359	3.634937
Jarque-Bera	37.53186	81.19137	534.9710	16.72506
Probability	0.000000	0.000000	0.000000	0.000233
Sum	7.6408	2914759.	3.7309	310.1290
Sum Sq. Dev.	2.2416	9.4610	1.9918	1039.520
Observations	66	66	66	66

Source: prepared by the author using Eviews 10.

Second: Testing the dormancy of the study variables

Unit root tests (Levin, Lin and Chu-LLC) and (I'm, Pesaram and Shin (IPS) can be used to test whether the listed variables do not have a stable status and suffer from a unit root. Such results help in deciding whether to accept the null hypothesis (H0=0) and to reject the alternative hypothesis, but if the variables do not suffer from a unit root and have a stable character, then the alternative hypothesis (H1 = 1) will be accepted, and we reject the null

UNDER PEER REVIEW

hypothesis. Table (2) shows the results of the tests indicating that some variables are stabilized at the level and others are settled at the first difference (1) as follows:

Table 2. Panel unit root test

Panel unit toot Test					
Variables		Levin, Lin & Chu t Individual Intercept		I'm, Pesaram and Shin (IPS) Individual Intercept	
		t-Statistic	Prob.	t-Statistic	Prob.
Y1	Level	0.69724	0.7572	4.44729	1.0000
	1st Difference	-4.35111	0.0000	-1.94006	0.0262
X1	Level	-107.459	0.0000	-39.1840	0.0000
	1st Difference	-39.1840	0.0000	-4.32410	0.0000
X2	Level	-7.86824	0.0000	-2.72661	0.0032
	1st Difference	-5.10907	0.0000	-3.99681	0.0000
X3	Level	3.43026	0.9997	1.99745	0.9771
	1st Difference	-5.74695	0.0000	-2.44508	0.0072

Source: prepared by the author using Eviews 10.

Third: Correlation matrix among the study variables

Table 3.Correlation matrix between model variables

Covariance Analysis: Ordinary
Date: 05/27/22 Time: 18:36
Sample: 2010- 2020
Included observations: 66
Correlation

Probability	Y	X1	X2	X3
X1	0.302318	1.000000		
	0.0136	-----		
X2	0.590639	0.115775	1.000000	
	0.0000	0.3546	-----	
X3	0.028465	-0.025990	0.622287	1.000000
	0.8205	0.8359	0.0000	-----

Source: prepared by the author using Eviews 10.

Table (3) shows a variation in the level of correlation between each of the variables: the number of executed contracts (X1), the size of the IPO (X2), the rate of return per share (X3) which represent the independent variables and are positively associated with the dependent variable, the rate of return on deposits (Y). The correlation was strong with (X1) with a significance level of (0.0136), and a very strong relationship with (X2) and a weak relationship with (X3).

Fourth: Estimating the impact of investors' preferences on banking returns for a sample of Qatari banks

There are three main models of Panel Data models, as well as the method of comparison between these models. They are as follows:

UNDER PEER REVIEW

1- Pooled Regression Model (PRM)

This model is one of the simplest models in cross-sectional data, as it neglects any effect of time during the study period on the studied variables and uses the usual least squares method in estimating this model.

Table 4. The results of the Pooled Regression Model for a sample of commercial banks for the period 2010-2020

Dependent Variable: Y
Method: Panel Least Squares
Sample: 2010 2020
Periods included: 11
Cross-sections included: 6
Total panel (balanced) observations: 66

Variable	Coefficient	Std. Error	T-Statistic	Prob.
X1	90.07503	41.14735	2.189085	0.0324
X2	0.095024	0.011461	8.290995	0.0000
X3	-2432353.	498191.7	-4.882363	0.0000
C	13661595	3213409.	4.251434	0.0001
R-squared	0.569747	Mean dependent var		11577401
Adjusted R-squared	0.548928	S.D. dependent var		18571845
S.E. of regression	12473203	Akaike info criterion		35.57476
Sum squared resid	9.6500	Schwarz criterion		35.70746
Log likelihood	-1169.967	Hannan-Quinn criter.		35.62719
F-statistic	27.36705	Durbin-Watson stat		.636896 0
Prob(F-statistic)	0.000000			

Source: prepared by the author using Eviews 10.

The regression results using Panel Data models indicated that there is a positive direct effect on the number of executed contracts (X1), and the size of the IPO (X2) as independent variables on the dependent variable Rate of return on deposits (Y) and a negative effect on the variable of return on shares (X3). The results of the (Adjusted R-squared) test showed that (X1, X2, X3) as independent variables have explained (54%) of the changes in the dependent variable (Y), and that the remaining (46%) are due to other factors not included in the model, in other words, the (54%) represents the ability of independent variables to predict the dependent variable, while the test (F-statistic) at the probability level of (0.000000) less than (5%) indicates the total significance of the model in statistical terms and indicates the statistics of (D-W) that reached its peak (0.636896) and this explains that the model does not suffer from of self-correlation.

2- Fixed effects model (FEM)

This model differs from the Pooled Regression Model in terms of showing static effects and can be called the least squares model of dummy variables.

UNDER PEER REVIEW

Table 5. Regression Results Using Fixed Effects Model for a Sample of Commercial Banks for the period 2010- 2020

Dependent Variable: Y
Method: Panel Least Squares
Date: 05/27/22 Time:18:15
Sample: 2010 2020
Periods included: 11
Cross-sections included: 6
Total panel (balanced) observations: 66

Variable	Coefficient	Std. Error	T-Statistic	Prob.
X1	45.44479	47.22655	0.962272	0.3400
X2	0.081682	0.009113	8.962976	0.0000
X3	-4374744.	490003.1	-8.927993	0.0000
C	25513322	3712181.	6.872867	0.0000

Cross-section fixed (dummy variables)

R-squared	0.773392	Mean dependent var	11577401
Adjusted R-squared	0.741587	S.D. dependent var	18571845
S.E. of regression	9440873.	Akaike info criterion	35.08512
Sum squared resid	5.0800	Schwarz criterion	35.38371
Log likelihood	-1148.809	Hannan-Quinn criter.	35.20311
F-statistic	24.31693	Durbin-Watson stat	1.098845
Prob(F-statistic)	0.000000		

Source: prepared by the author using Eviews 10.

By presenting the regression results using Panel Data models, it was noted that there was a positive effect of the number of executed contracts (X1) as an independent variable on the dependent variable rate of return on deposits (Y), this is due to the fact that the increase in the number of transactions means more trading in stocks, which generates profits, especially if investors are professionals and their investments are based on sound scientific foundations, then their preferences will be directed towards Qatari banks and prefer to deposit their financial surpluses in those banks from a diversification and risk reduction preceptive as stocks are considered risky assets, which will lead to increasing the invested amounts by banks thus increasing their returns. The results of the analysis also show a direct positive impact of the size of the IPO (X2) as an independent variable on the dependent variable Rate of Return on Deposits (Y) and this is due to the announcement of the size of the IPO disclosed in the banks' reports across a time series that will enhance confidence in those banks and motivate investors towards them and deposit their surplus amounts, which will be operated by those banks and increases their returns. The results of the above table showed a negative impact of the return on shares (X3). In the event that investors are risk-takers, they will prefer to invest in the shares of the banks of the research sample as they have achieved profits in the short term at least and accept the risk and avoid directing it towards other banks, which will be reflected on the volume of bank deposits and then on the returns of these banks, and the results of the Adjusted R-squared test showed that (X1, X2, X3) as independent variables have explained (74%) of the changes in the dependent variable (Y) and that (26%) are due to other factors that are not included In the model, in other words, (74%) is the ability of independent variables to predict the dependent variable, while the F-statistic test at the probability level of (0.0000000) is less than (5%) which indicates the overall significance of the model in statistical terms, and the statistics (D-W) that reached its peak at (1.098845) and this explains that the model is free of the problem of autocorrelation.

UNDER PEER REVIEW

3- Random effects model (REM)

REM is also called the Components of Variance Model, or the Elements of Error Model (ECM), the model assumes that the y-axis segment is a random sample drawn from a larger population that has a fixed expected value.

Table 6. Regression results using random effects model for a sample of commercial banks for the period 2010-2020

Dependent Variable: Y
Method: Panel EGLS (Cross-section random effects)
Sample: 2010 2020
Periods included: 11
Cross-sections included: 6
Total panel (balanced) observations: 66
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	91.03146	38.54352	2.361784	0.0213
X2	0.089984	0.008864	10.15206	0.0000
X3	-3247093.	424707.3	-7.645484	0.0000
C	17732437	3365185.	5.269380	0.0000
R-squared	0.604972	Mean dependent var		6772396.
Adjusted R-squared	0.585858	S.D. dependent var		17034428
S.E. of regression	10962313	Sum squared resid		7.4500
F-statistic	31.65033	Durbin-Watson stat		0.755815
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.526347	Mean dependent var		11577401
Sum squared resid	1.0600	Durbin-Watson stat		0.530308

Source: prepared by the author using Eviews 10.

By presenting the results of the regression using Panel Data models, it was shown that a positive effect of the number of executed contracts (X1) and the size of the IPO (X2) as independent variables in the dependent variable (Rate of Return on Deposits (Y) and an inverse effect of the variable of return on shares (X3), the results of the test (Adjusted R-squared) showed that (X1, X2, X3) as independent variables have explained (58%) of the changes in the dependent variable (Y) and the statistics of (D-W) indicate that the model is not without the problem of autocorrelation.

The appropriate model for the study

To determine the most appropriate analysis method for the study data, the Chow test was selected to test the differentiation between the aggregate model and the static effect as well as the Hausman Test to perform the model differentiation tests for fixed and random effects as follows:

Table 7. Results of the trade-off between the aggregate model and the fixed effect

Redundant Fixed Effects Tests

Effects Test	Statistic	d.f.	Prob.
Cross-section F	10.244789	(5,57)	0.0000
Cross-section Chi-square	42.315991	5	0.0000

Source: prepared by the author using Eviews 10.

A) Trade-off between an aggregate model and the static effect through a Chow test

It is clear from Table (7) which represents the data that determine the most appropriate model through testing between the aggregate model and the fixed effects model, which is the restricted Fisher (F) statistical test. The test (F) at a probability level of (0.0000) is less

UNDER PEER REVIEW

than (5%) which leads to the rejection of the null hypothesis and to accept the alternative hypothesis, thus the fixed model is chosen.

B) Trade-off between fixed and random effects models through the Hausman Test

Table 8. Results of the trade-off between the fixed and random effects model

Correlated Random Effects - Hausman Test			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	24.593357	3	0.000 0

Table (8) includes a presentation of the results of determining the most appropriate model through testing the fixed and random effects model through the Hausman test, which reported a probability level of (0.0000) less than (5%) thus the fixed effects model is selected.

CONCLUSIONS:

1- Investor preferences are defined as their ability to make financial decisions among available alternatives and select the best alternative with the highest possible return.
2- Banks' development of banking services and providing such services at a low cost contributes to increasing banking returns.
3- Investor preferences play a significant role in developing investment and achieving significant development, which contributes to the development of financial markets and the banking sector, which is reflected in increasing economic growth.
4- The trade-off between available investments in terms of return and risk is governed by two rules. The first rule states that if the risks are equal, the trade-off is made between them based on the expected return, while the second rule states that if the expected returns from investments are equal, the trade-off is made between them based on the least exposure to risk.
5- The model revealed that the number of executed contracts has a positive impact on the rate of return on deposits, implying that an increase in the number of transactions means more trading in stocks, which generates profits, especially if the investors are professionals and their investments are based on sound scientific foundations.
6- The size of the IPO has a positive effect on the rate of return on deposits. This is because the announcement of the size of the IPO through the banks' reports which increases confidence in those banks and motivates investors to go towards them and deposit their surplus funds, which will be operated by banks, increasing their returns.
7- The results showed a negative relationship between the rate of return on shares and the rate of return on deposits, which is due to risk-taking investors preferring to invest in banks that have at least achieved short-term profits and are willing to accept the risk, which will be reflected in the volume of bank deposits.

RECOMMENDATIONS:

1- Recognize the theory of financial behavior and focus on investor preferences as one of its main dimensions that significantly affect bank returns.
2- Investigating other variables that measure investor preferences, such as trading volume and retail investor trading, as a possible reason for increasing its returns.
3- When evaluating their performance, financial and banking institutions should rely on the banking returns index and study price movement to identify investors' preferences and desires.

UNDER PEER REVIEW

4- The importance of paying attention to the factors influencing banking returns, such as risk-adjusted returns and interest margins, in order to improve investor preferences.

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UNDER PEER REVIEW