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Market Concentration and Market Share's Effects on the Financial Performance of Jordanian Banks

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Abstract

This study explores market concentration and market share and their impact on both short and long-term financial performance of Jordanian banks. Autoregressive Distributed Lag (ARDL) method was used to analyse annual bank data from 2006-2020 to illustrate the impact of market concentration and market share on the financial performance of the Arab Bank and the Housing Bank for Trade and Finance. Results found market concentration's negative and significant impact on the short and long-term rate of return on assets for both the Arab Bank and the Housing Bank for Trade and Finance. This contradicts with the Structure-Conduct-Performance hypothesis and therefore excludes collusive behavior between banks mostly concentrated in the Jordanian banking market. The market share of deposits also has a short and long term positive and significant impact of on the rate of return on assets for both the Arab Bank and Housing Bank for Trade and Finance coinciding with the Traditional Efficiency hypothesis in the Jordanian banking market. We recommend inviting Jordanian banks to study their environmental influences, and raise employee efficiency and technological adaptability to competitively participate in the larger banking industry, thus improving their own performance.

Keywords: Market Concentration, Market Share, Financial Performance, ARDL Methodology

Introduction

The banking industry is the economic and social lifeblood of a country— it mobilizes citizen savings and directs them to various productive sectors which enhances sustainable economic and social development. Its sustainability guarantees larger economic security and the continued existence of a nationwide social system. Therefore, ensuring the industry's safety is a joint societal responsibility between its government and its available institutions following the responsibility of each party according to its respective competencies. This sector is ultimately subject to profit and loss, and there are shareholders who wait for a return on their investments at the end of each year. Hence, this sector's sensitivity to in investment returns greatly affects all other related issues. Hence, all parties must be vigilant when dealing with this sector.

Despite the publication of an increasing number of studies on this topic, where a number of hypotheses dominated this theoretical controversy, the relationship level between market concentration and market share on the one hand, and the financial performance of the bank's financial sector on the other, is still representative of an issue that remains largely unclear. The most important of these hypotheses include: the Structure-Conduct-Performance or the SCP Hypothesis, and the Traditional Efficiency Hypothesis. The first hypothesis is based on the assumption that the high level of concentration enhances the profitability of banks. Meanwhile, the second hypothesis asserts that the most efficient companies are best able to increase their market share and thus increase their profitability, indicating that the relationship between concentration and performance and is instead derived from efficiency.

The Study Problem

The ambiguity between market concentration and market share and on financial performance along with the conflicting results of previous studies outlines the need for added empirical analysis especially on emerging economies which exhibit different circumstances in their respective banking industries. Hence, the problem of the study mainly answers the following question:

What is the effect of Jordanian banks' market concentration and market share of on their financial performance during from 2006 – 2020?

The following questions can then be raised accordingly:

1) What is the level of market concentration of the banking market in Jordan?

2) How does market concentration affect Jordanian banks' financial performance?

3.) How does market share of deposits likewise affect Jordanian banks' financial performance?

The Purpose of the Study

Challenges such as the liberalization of banking services, the penetration of banks and international financial companies in various international markets, and the rapid and easy transmission of the effects of global financial crises are problems that continuously hound the baking sector. In response, some banks have adopted expansionist policies in their investment and financing operations which, coupled by numerous mergers and acquisitions of banks around worldwide, has led to an increase in the degree of market concentration and market share for some banks. This prompted renewed scholarly interest in financial and banking affairs to gravely consider studying the reality of market concentration and market share and their impact on the financial performance of banks to prepare effective policies in dealing with the increasing degree of market concentration and market share in the banking sector. Given these institutional reactions, this study elucidates market concentration and market share and their impact on the financial performance of Jordanian banks.

The Study Hypotheses

Two main hypotheses are forwarded herein:

H1: The Structure-Conduct-Performance or SCP Hypothesis — H1 suggests that a higher level of market concentration and lower levels of competition in the banking sector positively affects the financial performance of banks.

H2: The Traditional Efficiency Hypothesis — H2 suggests that a higher level of market share and lower levels of competition in the banking sector positively reflects on the financial performance of banks.

Theoretical Framework and Previous Studies

Market concentration and market share's effects on profitability remains an important research issue for those related to financial management. Because of the increasing challenges financial managers in business companies must face to increase profitability, competition prevails in various commercial and financial businesses. The SCP Hypothesis and the Traditional Efficiency Hypothesis are examples of assumptions which explain the relationship of market concentration and market share to profitability.

For SCP, establishments ally themselves with each other during market concentration or monopoly for them to set prices for their products higher than the original prices during times of perfect competition, thus reflecting positively on company profitability.

Generally, the assumptions related to market concentration and its relationship to profitability can be summarized according to the following formula:

$$\partial\pi/\partial Conc > 0; \partial\pi/\partial MS$$

Where π is the bank profitability, *Conc* reflects the market concentration, and *MS* reflects the overall market share.

Meanwhile, the Traditional Efficiency hypothesis assumes that more efficient companies increase in size and market share, which then increase their ability to achieve profits. Hence, the relationship between concentration and performance is illogical following the claims of SCP theory, and is instead derived from efficiency (market share) (Hamdan et al, 2014).

$$\partial\pi/\partial Conc = 0; \partial\pi/\partial MS > 0$$

Following previous studies, numerous studies have determined the validity of any of the two previous hypotheses: one study attempted to verify the interrelationship between profits, market concentration, and market share by testing almost 2,700 government banks (Smirlock, 1985). It assumed that market concentration is not a random event, but is instead the result of highly efficient companies obtaining a large market share, hence the connection between profits and company market share. Concentration in banking markets were determined to not lead to monopolistic profits, while market share was found to be positively related to profitability.

Al-Muharrami & Matthews (2009) tested the relationship of market power to the performance of a group of Arab Gulf banks. They found that the hypothesis (structure-behaviour-performance) has a positive and statistically significant relationship with concentrating banking industry and the bank's performance. Their results coincided with Tregenna's (2009) study of American banks and how industry structure affected financial

performance. Subsequent results supported the SCP model where it referred high profits achieved by the banks to the effect of high concentration.

Bhatti and Hussain (2010) clarified the relationship between market structure (represented by market concentration, market share) and performance in the Pakistani banking market using data from Pakistani commercial banks to test both the structure-behaviour-performance (SBP) hypothesis and the traditional efficiency hypothesis. A positive relationship was found between concentration and profitability (thus supporting the first hypothesis), while the relationship between market share and profitability was negative (indicating the exclusion of the second hypothesis). Ahamed (2012) also examined the relationship between market structure and performance in the banking industry in Bangladesh using data from commercial banks to test the structure-behavior-performance and traditional efficiency hypotheses. The results of the study showed the profitability came as a result of concentration rather than market share, so the study concluded.

Hamdan *et al* (2014) investigated the relationship between the structure of the banking market and the profitability of banks in Bahrain and Kuwait. Results supported the SBP hypothesis as an explanatory factor of the relationship between the market structure and the profitability of Bahraini banks following the positive and statistically significant relationship of market concentration on performance. The same results however did not support the SBP hypothesis as an explanatory factor in the Kuwaiti banking market, in turn excluding the hypothesis of the alliance between the most concentrated banks, while likewise concluding that traditional efficiency models do not explain the Kuwaiti banking industry landscape.

Al-Kour (2011) tested and evaluated the impact of concentration and market share on the performance of Jordanian commercial banks, following both SBP and Traditional efficiency to identify the nature of the performance behavior of Jordanian commercial banks. Results were largely parallel with the those of Arif and Awwaliyah's (2019) study which analysed the impact of market structure on the profitability of Islamic banks in Indonesia—for both studies, market share and concentration ratio do not affect the profitability of the banking industry. This indicates that the performance of both Jordanian commercial banks and Indonesian Islamic banks not support both hypotheses, hence the non-existence of collusion in either contexts.

Development of the Study Variables

Rate of return, market concentration and market share

Development of the rate of return on assets

The rate of return on assets of The Arab Bank witnessed a remarkable fluctuation during the study period as shown in Fig. (1) below where it reached its peak of 1.7%in 2018, compared to its lowest of 0.08% in 2020.

For the rate of return on assets for the Housing Bank for Trade and Finance, Fig. (2) shows that it gradually decreased during from 2006 to 2009, but then gradually rose again until 2016, before again decreasing to reach the lowest level in 2020, at 0.51%. Note that the highest level of this return reached 2.31% in 2006.

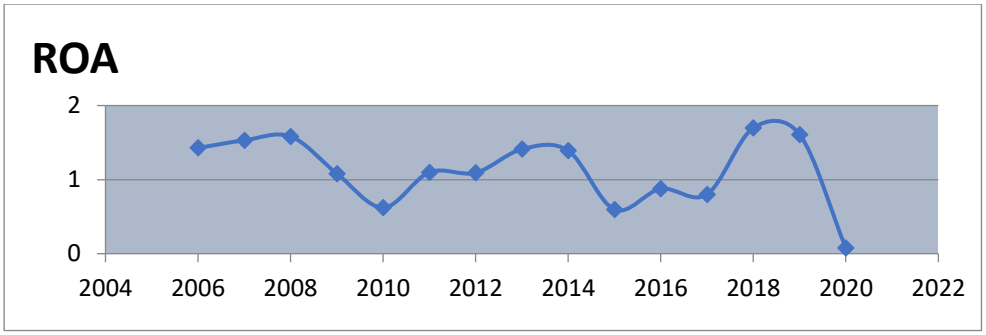

Figure (1) Evolution of the rate of return for the Arab Bank

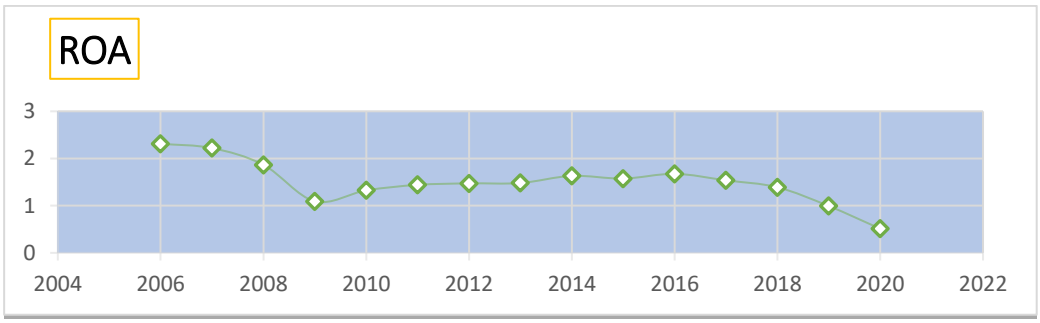

Figure (2) Evolution of the rate of return for the Housing Bank for Trade and Finance

The development of banking concentration in the Jordanian banking market

Data from the Central Bank of Jordan indicated that the total assets of Jordanian banks amounted to 56,485,000 JOD at the end of 2020, compared to its previous 24,237,600 JOD at the end of 2006, illustrating a growth rate of about 133%. Here, The Arab Bank ranked first while the Housing Bank for Trade and Finance ranked second among all Jordanian banks (as shown in Fig. 4). For asset concentration according to the Herfindahl-Hirschman Index, Fig. (3) indicates that the concentration ranged between 12.45% - 12.06% from 2006 to 2008, then witnessed a gradual decline until it reached 9.56% in 2015 before achieveing relative stability during the end of the study period in 2020 where it scored 9.76%. The decrease in concentration after the year 2008 is considered an indication of the improvement in competitiveness in the Jordanian banking sector, which is attributed to the entry of three new banks during 2009 which was coupled by older banks developing their businesses and products to increase competitiveness.

Notably, various studies indicated that if the market concentration rate exceeds 40%, then the market sector would be considered monopolistic. Following available data on the financial reports of Jordanian banks, the highest concentration reached was in 2008 with 12.45% while the lowest recorded percentage was at 9.53% in 2019 as shown in Fig. (3). Accordingly, the Jordanian banking system is not captured in a monopolized state, but instead exists in a state of competition.

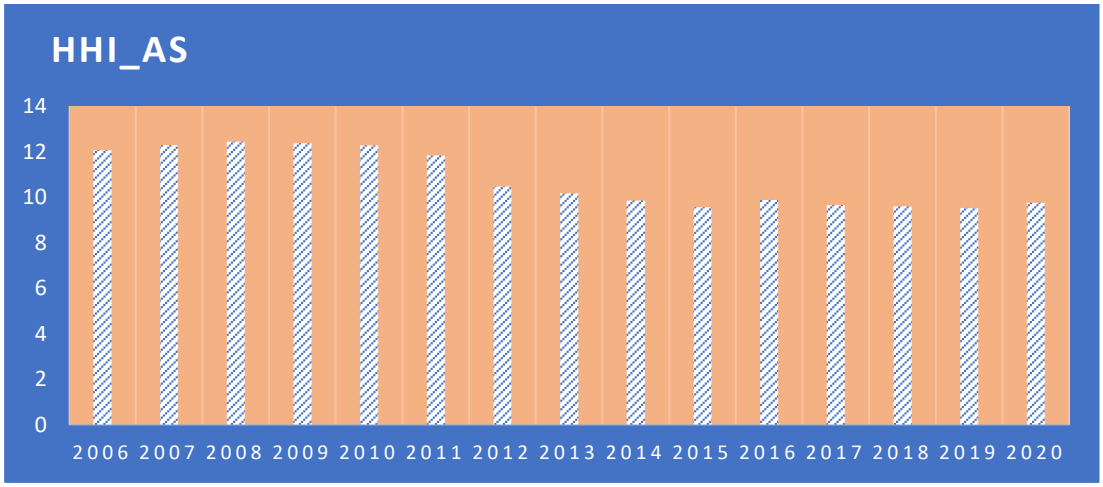

Figure (3) Development of market concentration in the Jordanian banking market

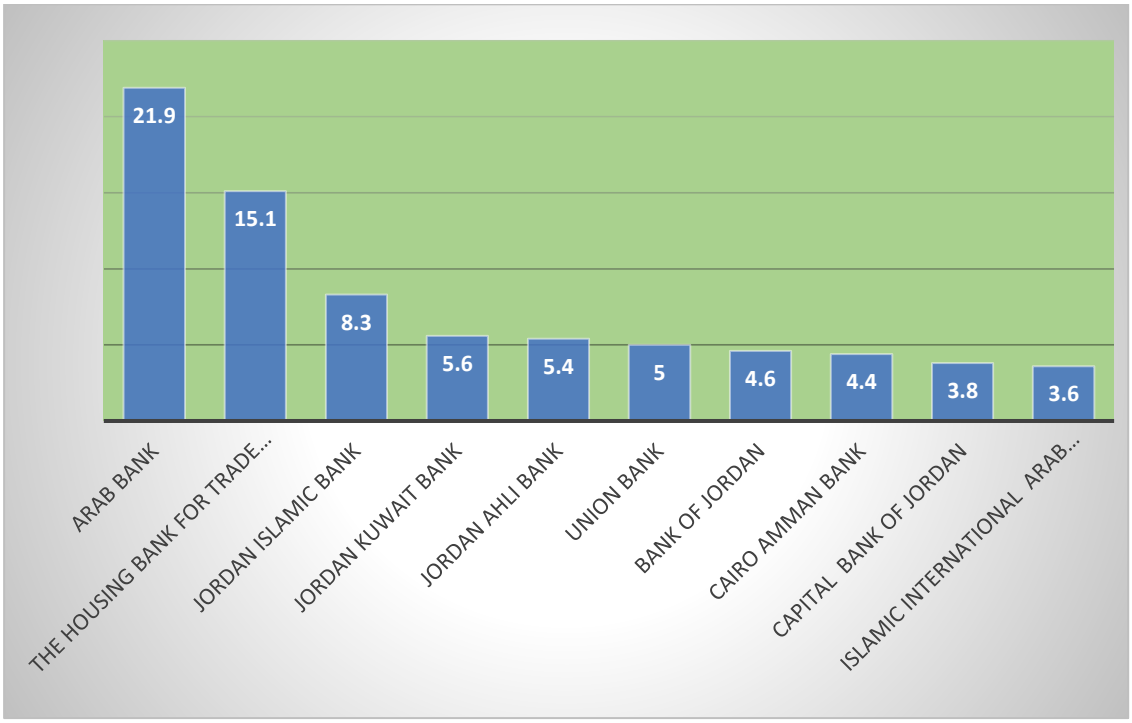

Figure No. (4) The average market share of assets for the ten largest banks operating in Jordan during the study period.

Development of the Market Share of Deposits

Following data issued by the Central Bank of Jordan, the total deposits in banks operating in Jordan in 2020 amounted to about 36,399,700 JOD, compared to 13, 119,300 JOD in 2006. Figure (5) indicates that the share of the two largest banks in total deposits, namely the Arab Bank and the Housing Bank for Trade and Finance, is approximately at 41.6% in 2006. This percentage continuously decreased to about 34.6% in 2020. The decrease in the contribution of the two largest banks of total deposits may be explained by the entry of new banks into the Jordanian banking market, and the increase in the degree of competition in the Jordanian banking sector.

The Arab Bank's share of deposits was recorded at approximately 25.3% in 2006, which decreased to about 21.8% in 2020, while the Housing Bank for Trade and Finance's share of total deposits was recorded at approximately 16.3% in 2006, further decreasing to about 12.8% in 2020.

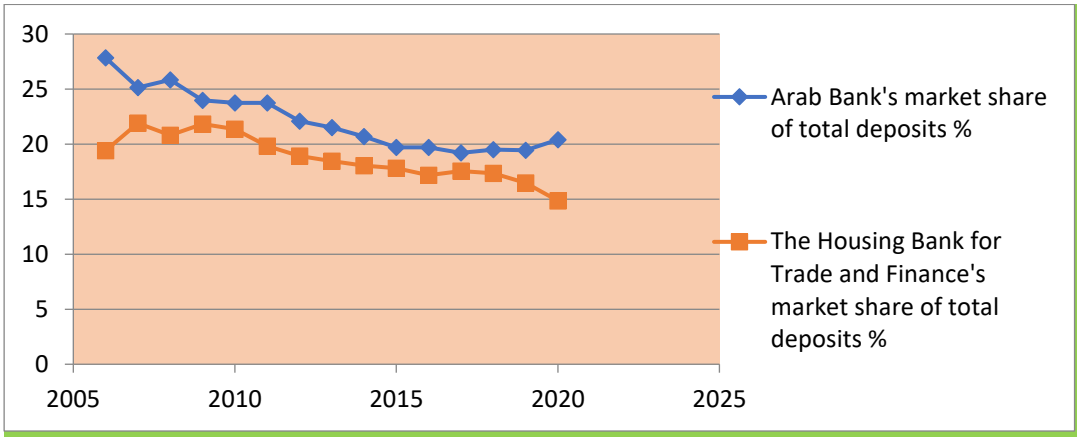

Figure (5) Development of the market share of deposits for the two largest banks in the Jordanian banking market.

Study Methodology

Both descriptive method and standard methods were used to investigate the impact of market concentration and market share on the financial performance of Jordanian banks from 2006 – 2020. The final dataset ultimately used the annual data from the Central Bank bulletins along with the annual financial reports of banks operating in Jordan. Excel spreadsheet was used to calculate the independent and dependent variables. The E-views statistical programs was also used to estimate the statistical model adopted herein. The study period began in 2006 because the banks' financial statements did not provide an accurate disclosure of operational efficiency before this date, hence the choice of using 2006 as the starting year of the current study.

Study variables were chosen following the theories which explain the relationship of market concentration and market share to financial performance on the one hand and previous studies on the other. These variables herein are as follows:

The dependent variable is the rate of return on the bank's assets which reflects the extent the administration is effective in exploiting and utilizing its available resources to generate profits. This is calculated by dividing the net profit with tax by the total assets. This variable was chosen because of its ubiquity and its ease in analysing the relationship of market concentration to financial performance along with its capacity to reflect profit margin index and the asset benefit index.

Meanwhile, the independent variables are quite varied; previous studies indicate that there exist many variables that affect financial performance, whether directly or indirectly, as indicated by the study model.

For the purposes of this study, the following independent variables were adopted:

1) Market concentration — represents the sum of the square of the market shares of the assets of all banks operating in the Jordanian market. This indicator is calculated through the Herfindahl-Hirschman Index.

Measuring market concentration depends on the concentration of producers or the concentration of consumers, however, the use of the concentration of producers due to the difficulty of counting consumers, (Bu Afiah, 2017). Hence, Husseinou (2018) indicates that the concentration of producers includes various types such as:

a. Wealth concentrated in a certain number of owners.

b. Concentration of industry related to distributing total output, capital or workers over the number of industrial units.

c. Concentration of control in the market through the ability of institutions to influence important variables in the market, such as prices, sales and freedom to enter or exit the market.

The study considered the adoption of the concentration of producers i.e., the concentration of banking service providers in calculating the bank market concentration. Hence, this indicator was calculated according to the following formula:

$$\boldsymbol{HHI} = \sum_{\mathbf{i=1}}^{\boldsymbol{n}} (\boldsymbol{MSi})^2$$

The indicator approaches the correct one at concentration in the event that there is a single bank operating in the market and approaches (1/n) when there are a large number of banks. Said indicator was characterized by considering all the shares of banks operating in the market.

1. Market share — refers to the share of deposits for each bank and was calculated according to the following formula:

MS = Total deposits of banks operating in Jordan divided by the total deposits of each bank

3. Operational efficiency margin to Gross Income —refers to the bank's ability to exploit the resources available to it to achieve the largest possible return at the lowest costs. Due to the fact that operational efficiency affects both a bank's ability to create profits with the fewest resources available to it and its capacity to control its expenses, it is of importance to individuals involved in banking issues. The ratio of total expenses to total income is one of the most important ratios that measure operational efficiency, which was adopted in this study.

4. Credit facilities to assets — refers to the ratio which expresses the extent to which the bank's management has expanded its lending, hence the decrease in liquidity. A low ratio however, indicates the latent liquidity of the bank.

5. Real gross domestic product (GDP) — refers to the total value of final goods and services produced in the Jordanian economy during a period of one year, calculated at the prices of the base year of 1996. The growth rate of real GDP was adopted in the analysis. Berger *et al* (2004) indicates that the economic growth rate has improved contributes to optimism about the future, which could have a positive impact on the performance of banks in the market.

Study Population and Sample

The study represented all banks operating in Jordan reaching a total of 25 banks comprised of 13 Jordanian commercial banks, 3 Jordanian Islamic banks, 8 foreign commercial banks, and 1 foreign Islamic bank. The study sample however consisted of two banks: The Arab Bank and the Housing Bank for Trade and Finance. This is because the study's objective is analysing the market concentration and market share at the enterprise level. These two banks were chosen because of their reputable status in the Jordanian banking market, along with them both having the largest market share in terms of assets, deposits, and credit facilities.

Study Model

To test the hypotheses of the study, a set of tests were carried out to analyze the behavior and characteristics of the time series of the study variables, with the aim of arriving at the appropriate estimation method for the study model. These tests included:

1. CUSUML ability test
2. Unit Root Test for time-series inactivity
3. Bounds Test

Study variables were linked in the form of a simplified model free of complications. The performance of banks has been expressed as a function of market concentration and market share, expressed as follows

ROA = *f* (HHI__AS, AD)

The following variables have been added: Operating efficiency, Ratio of credit facilities to assets, Rate of economic growth. Given that the value of these variables affect the financial performance of banks, so that the model takes the following form:

ROA = *f* (HHI_AS, AD, CIR, BCA, GDP)

For the purposes of conducting standard analysis, the model took the following form:

$$ROAt = \alpha 0 + \alpha 1 HHI\_ASt + \alpha 2 ADt + \alpha 3 CIR + \alpha 4 BCAt + \alpha 5 GDPt + \varepsilon it$$

Where, $\boldsymbol{ROA}$ reflects the rate of return on the bank's assets, *HHI__AS* reflects the concentration of assets as measured by the Herfindahl-Hirschman Index, *AD* reflects the bank's market share of assets, *CIR* is the Operational Efficiency, *BCA* is the ratio of the bank's credit facilities to the bank's assets, *GDP* is the rate of economic growth, *α0* reflects the constant limit of the model. Model parameters were written as α1, α2, α3, α4, while *εit* is the random error limit.

Standard Analysis Results

CUSUM Stability Test

The CUSUM tests the presence of any structural change in the statistical model data along with the consistency and stability of long-term parameters with short-term parameters. The structural stability of the estimated parameters of the ARDL method is achieved if the graph of the CUSUM test falls within the critical limits at the 5% significant level. Evidently, Figs. 6 & 7 illustrates the stability of the data for The Arab Bank and The Housing Bank for

Trade and Finance where the regression line notably passes between the lines of the critical region boundaries at the significant limits of 5%.

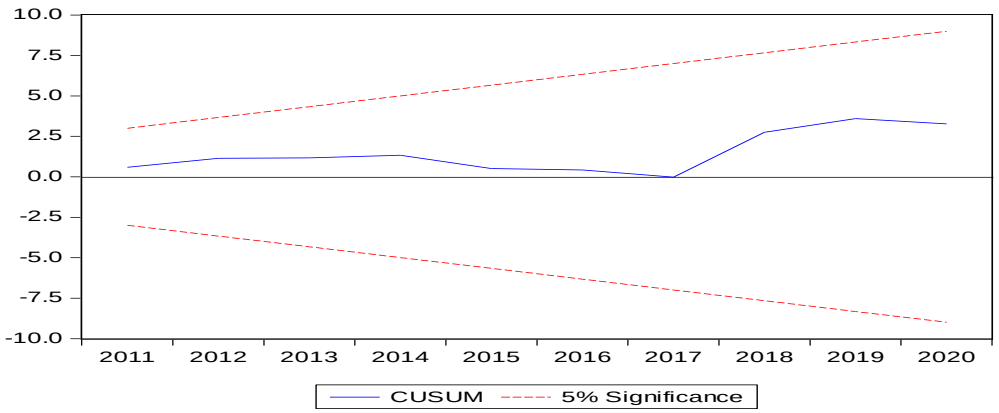

Figure (6) Data stability of Arab Bank

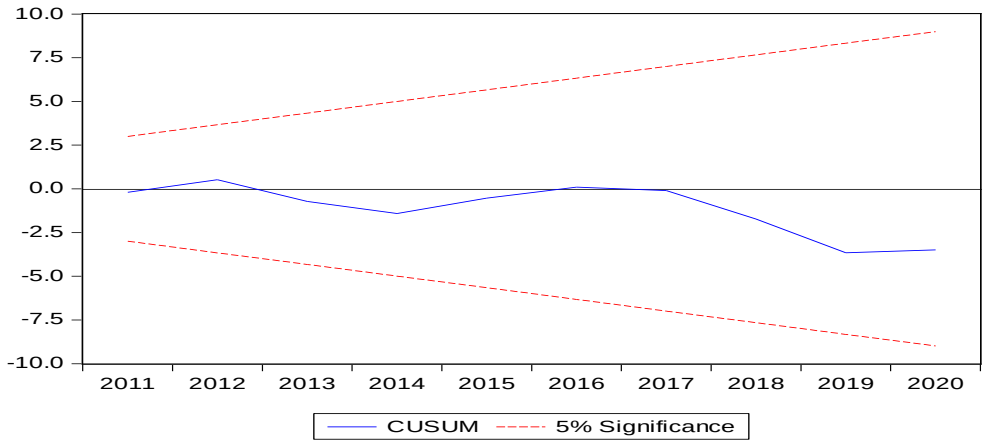

Figure (7): Data stability of the Housing Bank for Trade and Finance

Unit Root Test for time-series inactivity

Plosser & Nelson (1982) explored a series of non-static economic variables at the level showed that when using the method of least squares (OLS) to inaccurate statistical results. This also made it possible to obtain high values for each of the tests (F,t) along with the regression determination coefficient (^{2}R). To avoid the emergence of the problem of spurious regression, the stationarity of time series is tested. Here, the Dickey-Fuller Test (ADF) was used to test the null hypothesis of the existence of a unit root, which explains the non-stationary time series (Gujarati & Porter, 2009).

Table 1 indicates that the time series for the following variables: the rate of return on the assets of the Arab Bank, the operational efficiency of the Arab Bank, the ratio of credit facilities to the total assets of the Arab Bank are static, as the absolute values calculated from the expanded Dickey-Fuller test greater than the critical absolute values at levels of statistical significance (1%, 5%, 10%). Therefore, the null hypothesis that states that these variables do not remain at their levels is rejected.

The results of the same table also indicated the following variables: market concentration, rate of return on the assets of the Housing Bank for Trade and Finance, market share of the deposits of the Arab Banks and Housing for Trade and Finance, the ratio of credit facilities to the total assets of the Housing Bank for Trade and Finance, and the operational efficiency of the Housing Bank for Trade and Finance. The real output growth rate is dynamic in all levels given that the absolute values calculated from the test are less than the critical absolute values, at levels of statistical significance (1%, 5%, and 10%). Accordingly, the null hypothesis is accepted which posits that these variables will not remain at their levels. These variables have therefore become stationary when the first difference is considered.

Because not all units of the variables through the unit root test are stable at the same degree of stability, this makes it impossible to use other co-integration methodologies in this study because it needs that the variables are stable at the same degree of integration. This explains the study's used of the ARDL methodology. After estimating the ARDL method, the results of the co-integration test between the variables are obtained.

Table (1)
Dickey-Fuller Extended Root Unit Test Results

	Variable	Levels		First deference	
		ADF Statistics	Result	ADF Statistics	Result
	HHI__AS	-1.2201	Non	--2.1916	Stationary
	GGDP	-1.3296	Non	** -3.5502	Stationary
The Arab Bank variables	ROA1	-5.1283*	Stationary	-	-
	DC1	0..0922	Non	-6.104 *	Stationary
	CIR1	-4.107**	Stationary	-	-
	BCA1	-2.8115***	Stationary	-	-
Housing Bank for Trade and Finance variables	ROA2	-2.177	Non	**-2.0572	Stationary
	DC2	-1.799085	Non	-4.0679 *	Stationary
	CIR2	-1.5814	Non	-3.3422**	Stationary
	BCA2	-2.0898	Non	**-2.7140	Stationary

*The variable is significant at the 1% level; **: the variable is significant at the 5% level; ***: the variable is significant at the 10% level.

ROA1: The rate of return on the assets of the Arab Bank; ROA2: The rate of return on the assets of the Housing Bank; DC1: The Arab Bank's share of the banks' total assets; DC2: The Housing Bank's share of the banks' total assets; BCA1: the ratio of credit facilities to the Arab Bank on the bank's assets; BCA2: the ratio of credit facilities to the Housing Bank on the bank's assets.

Bounds Test

Because the time series of the study variables do not have the same degree of inactivity, some of them are stationary at the level and some are stationary when the first difference is taken. This therefore requires detecting the presence of co-integration using the autoregressive method for the distributed delay periods ARDL (Pesaran et al, 2001), through Approach testing bounds.

Notably, Table (2) indicates the existence of a long-term equilibrium relationship between the variables of The Arab Bank model and the Housing Bank for Trade and Finance model as shown by how the calculated F-statistic value was greater than the tabular upper bound (UCB) value found in the proposed table from (Pesaran et al, 2001) at the 5% level of significance. Given these results, the effect of concentration and market share on the financial performance of Jordanian banks in both the long and short terms were estimated through the ARDL model.

Table (2)
Combined Integration Test Results Using ARDL Bounds Test Combined Integration Test Results Using ARDL Bounds Test.

Equation	ROA (HHI__AS, DC ,CIR, BCA , GGDP)				
T					
Arab bank			Housing bank		
F-statistic = 3.88	Prop = 0.043	result: The prescence of combined integration	F-statistic = 4.08	Prop = 0.012	result: The prescence of combined integration
Critical Value Bounds					
Significance	I(0) Bound	I(0) Bound			
10%	2.26	3.35			
5%	2.62	3.79			
2.5%	2.96	4.18			
1%	3.41	4.68			

The results of the estimation of the previous equation are as follows

First, are the results of the short- and long-term assessment of the Arab Bank, according to the results contained in Tables (4) and (5). Part A illustrates the results of the short-term assessment of The Arab Bank which are as follows:

ROA=-1.338-0.345HHI__AS+ 0.159DC–0.027CIR–0.035BCA + 0.045 GGDP

Meanwhile, results of the long-term assessment of The Arab Bank as illustrated in part B are as follows:

ROA= -1.407- 0.399HHI__AS+ 0.223 DC – 0.021 CIR – 0.074 BCA + 0.028 GGDP

Second, are the results of the short-term and long-term assessment of the Housing Bank for Trade and Finance following the results contained in Tables (4) and (5). Part A illustrates the results of the short-term assessment of the Housing Bank for Trade and Finance which are as follows:

ROA=-7.134+ 1.073 HHI__AS -0.687DC +0.006CIR – 0.105BCA- 0.129 GGDP

Meanwhile, results of the long-term assessment of the Housing Bank for Trade and Finance as illustrated in part B are as follows:

ROA= 0.641 - 0.150HHI__AS+ 0.096 DC - 0.001 CIR - 0.015 BCA + 0.018 GGDP

Short-Run Relationship

Table (3)

ARDL Co-integrating and short-run Form

Variables	The Arab Bank				Housing Bank for Trade and Finance			
	Coefficient	Std. Error	t-Statistic	Prob	Coefficient	Std. Error	t-Statistic	Prob
D(ROA(-1))	1.528	0.240	6.363	0.003	1.072	0.118	-2.986	0.058
D(HHI__AS)	-0.345	0.134	-2.574	0.082	-1.073	0.049	-21.767	0.029
D(DC)	0.159	0.066	2.406	0.095	0.687	0.036	19.01	0.033
D(CIR)	-0.027	0.004	-8.900	0.006	0.006	0.001	4.142	0.150
D(BCA)	-0.035	0.031	-1.157	0.331	-0.105	0.006	-18.091	0.035
D(GGDP)	0.045	0.040	1.116	0.346	-0.129	0.015	-8.639	0.073
CointEq(-1)	-1.338	0.121	-11.067	0.006	-7.134	0.417	-17.096	0.037

Long-Run Equilibrium Relationship

Table (4)

Long Run Coefficients

Variables	The Arab Bank Coefficient	Std. Error	t-Statistic	Prob	بنكHousing bank Coefficient	Std. Error	t-Statistic	Prob
HHI__AS	-0.399	0.100	-3.934	0.028	-0.150	0.004	-34.910	0.018
DC	0.223	0.066	3.390	0.043	0.096	0.002	48.881	0.013
CIR	-.021	0.004	- 5.056	0.015	-0.001	0.0002	-4.932	0.127
BCA	0.074	0.018	4.079	0.027	0.015	0.0002	84.063	0.008
GGDP	0.028	0.040	0.720	0.524	0.018	0.001	12.934	0.049
C	-1.407	1.192	-1.179	0.323	0.641	0.034	18.958	0.034
R-Squared =% 92 Adjusted R-Squared =% 88.6 F- statistic = 32.47 prob = 0.008 DW-statistic =1.98					R-Squared =% 83.4 Adjusted R-Squared =%76.9 F- statistic = 87.6 prob = 0.026 DW-statistic =2.3.			

Previous results on The Arab Bank clearly show that the market concentration has a negative and significant impact on the rate of return of the bank's assets on both short and long-term effects. Meanwhile, the market share of the bank's deposits has a positive and significant impact on the rate of return on assets in both the short and long term with regard to the effect of the controlling variables on the rate of return on assets for The Arab Bank, indicating that operational efficiency has a negative and significant impact in both the long and short term. For the credit facilities to assets, results found that these have no significant impact in the short term but have a negative and significant impact in the long term. Lastly, results for the real economic growth rate indicate that it has no impact on the rate of return on both short and long-term assets.

For the Housing Bank for Trade and Finance however, the previous two analyses of market concentration showed a negative and significant impact on the rate of return on assets for the bank in both the short and long terms. The market share of the bank's deposits however has a positive and significant impact on the rate of return on assets in both short and long terms. The impact of the controlling variables on the rate of return on the bank's assets also shows that operational efficiency has no significant effect in both short and long terms.

Credit facilities to assets were found to have a negative and significant impact in the short term, but have a positive and significant impact on the long term. Results for the real economic growth rate indicate its negative and significant impact in the short term while also illustrating its positive and significant impact on the rate of return of assets in the long term.

Since the test results in Table No. (3) indicated that the value of the error correction limit for the previous period was significant, this makes it necessary to confirm the significance of the value of the error corrector CointEq (-1), depending on the t-Statistic test and the sign of the coefficient that had to be negative. This confirms the existence of a long-term convergence relationship between the independent variables and the rate of return on assets for both banks used in the current study. Notably, the value of the error correction limit coefficient in the Arab Link equation, which is equal to (-1.338) and indicates that 0.6% of the imbalance percentage for the previous period is corrected in the subsequent period after any shock to the independent variables and affecting the dependent variable. The Housing Bank for Trade and Finance accounts for 3.7% of the imbalance ratio for the previous period I, which was corrected in the subsequent period after any shock to the independent variables occurred and affected the dependent variable.

Results and Recommendations

The studies key findings are as follows:

Through the available data on the financial reports of Jordanian banks during the study period, results showed that the market concentration rate ranged from 9.53% to 12.45%. Accordingly, the Jordanian banking system is not dominated by a state of monopoly, and is instead enjoying the benefits of proper industry competition.

The share of the two largest banks, namely The Arab Bank and the Housing Bank for Trade and Finance, in terms of total deposits accounted for approximately 41.6% in 2006, which then gradually decreased to about 34.6% in 2020. This may be due to the entry of new banks into the Jordanian baking industry along with the increasing degree of competition in within the sector.

Empirical results showed that the market concentration is both negative and significant on the financial performance of both banks in the short and long term. This study opposes the SCP hypothesis and thus excludes collusive behavior among the most concentrated banks in the Jordanian banking market.

Market share of deposits also have a positive and significant impact of on the financial performance of both banks in the short and long term, meaning that this study coincides with the Traditional Efficiency hypothesis in the Jordanian banking market.

Two analytical results revealed operational efficiency's negative and significant impact on the financial performance on The Arab Bank in both the long and short term which also had no significant impact on the financial performance of the Housing Bank for Trade and Finance in also the short and long term.

Analytical results showed that the ratio of credit facilities to assets does not affect the financial performance of The Arab Bank in the short term but has a negative and significant impact on the financial performance of the bank in the long term. For the Housing Bank for Trade and Finance, the analysis indicated that credit facilities to assets negatively and significantly affect financial performance in the short term, but has a positive and significant impact on financial performance in the long term.

Lastly, results reveal that the real economic growth rate has no significant impact on the financial performance of The Arab Bank in both the short and long term but has a negative and significant impact on the financial performance of the Housing Bank for Trade and Finance in the short term but has a positive and significant impact on the financial performance in the long term.

Following results of the study, several recommendations are forwarded:

-Jordanian banks should pay attention to studying all extraneous influences to possess the necessary tools for competitive advantage,

-Jordanian banks should adopt training programs aimed at raising the efficiency of their employees coupled with policies that capacitate banking staff to use new technological developments in the banking industry to positively reflect on performance improvement.

-More studies should be conducted on market concentration and competitiveness and should be applied on contexts other than the one used herein, including but not limited to industrial companies, insurance companies, or other companies.

Ultimately, this study's main contribution is its attempt to include the operational efficiency variable into the control variables in the study model, thus measuring the impact of market concentration and market share on financial performance which previous studies had largely unaddressed. Additionally, this study explored the impacts of market concentration and market share on the financial performance of Jordanian banks in both the long and short-term using the Autoregressive Distributed Lag ARDL method, which, to the author's knowledge is the only study which uses this method.

Contribution/Originality: Unlike extant literature, the current study dealt with all Jordanian banks operating within Jordan regardless of type (commercial, Islamic, and foreign) when studying market concentration. Thus, the current study aovided the common pitfall of previous studies where it was limited to a specific type of bank. The current study also included the operational efficiency variable into the control variables, which had not been addressed during the previous studies to the knowledge of the researcher. Along with the abovementioned points, this study studies the impact of market concentration and market share on the financial performance of Jordanian banks in the long and short-term using Autoregressive Distributed Lag (ARDL) method, which is the only study that uses this method as far as the researcher is cognizant of.

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