

Impact of Market Concentration on the Profitability of Banking Sector in Palestine

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Abstract

This study examines the impact of market concentration on banks' profitability in Palestine from 2008 to 2017. The study sample consists of all banks operating in Palestine. A dynamic panel analysis is applied to the sample of 14 banks with one econometric model consisting of one dependent variable and five independent variables. Return on assets (ROA) is used as a profitability indicator, and market concentration of credit (CONC), market share of deposits (MS), capital adequacy ratio (CAR), bank size (BS), and real GDP growth rate (RGDP) are used as independent variables measured using five financial ratios. The findings and analysis revealed that CONC, MS, and BS had a significant positive effect on ROA, while CAR had a significant negative relationship with ROA. The macroeconomic variable RGDP had an insignificant positive effect on ROA.

Keywords: Profitability, banking sector, concentration, market share, Palestine

Jel Classification: G21, C23, L10

1. Introduction

In Palestine, the banking sector is considered the cornerstone of the financial system and plays an important role in the development of Palestine's economy. Banks are the principal source of credit in the Palestinian market since the financial market in Palestine is weak and unable to provide an adequate source of credit to investors (Saci, et al., 2009).

The importance of market concentration in the banking sector is reflected in its impact on competition, efficiency, and profitability in the banking sector, as well as on economic development and structure in other sectors. Many studies and theories in the economic literature are interested in and examine the market concentration in the banking sector. In Palestine, the degree of concentration in the banking sector, measured using deposits or facilities through the Herfindahl-Hirschman index (HHI) has continued to improve. Concentration is defined "as a measure of subject participation in cumulative sales, assets or market share and it is usually determined by the number of companies in an industry and by their relative size" (Zingales and Raghuram, 2003).

From society's point of view, the concentration of banks and other competition barriers affects the banks' behaviors and performances negatively resulting in social loss associated with poor pricing (which results from the banks market power, which increases due to the increased levels of market concentration) according to the structure-behavior-performance model (SCP).

To succeed, companies need to identify the factors that affect their profitability, and market share is one of the most important ones that companies must pursue to achieve profitability. Several studies have attempted to examine the relationship between market share and profitability. Contradictory results have been found, as some studies found a significant impact of market share on the profitability of banks, while other studies had different results; hence, this study aims to verify this relationship.

The main objective of the study is to examine the relationship between credit concentration, market share of deposits, capital adequacy ratio (CAR), bank size (BS), and real GDP growth rate (RGDP) and the performance of banks' operations in Palestine. Very few studies have examined this relationship in Palestine. Therefore, this study aims to fill the gap and contribute to the existing literature.

This research tries to answer the following main question: Did market concentration of credit (CONC) affect a bank's profitability between 2008 and 2017? To do so, it answers the following sub-questions:

- Does market share of deposits affect a bank's profitability?
- Does capital adequacy ratio affect a bank's profitability?
- Does bank size affect a bank's profitability?
- Does real growth rate affect bank's profitability?

2. Previous Research

2.1. Overview of the Palestinian Banking System

The banking system in Palestine was initially characterized by weakness and distortion in its structure and activity due to political factors in Palestine. Therefore, the need for a strong banking system capable of activating the requirements of financial and banking work became apparent, as this would positively affect the Palestinian economy and development. In turn, this would bring positive benefits to citizens, raising their standard of living and improving their economic and social conditions. The Palestinian National Authority represented by the Palestinian Monetary Authority (PMA) supervised the banking system. The PMA operates as the Central Bank of Palestine, which was created by Presidential decree in 1994 after the Oslo Accords. The PMA has been able to operate in a difficult environment and has created a financial sector that provides most financial services. In Palestine there is no national currency; the Israeli currency (the new Israeli shekel) is used for daily deals, as are the US Dollar and Jordanian Dinars. Fourteen banks operated in Palestine at the end of 2018 with a total of 367 branches and offices. There are seven local banks; four of them are commercial and the other three are Islamic. Additionally, there are seven foreign banks with a total of 128 branches. The total assets reach USD 17 billion, with deposits of USD 13 billion and credit facilities of USD 8 billion with total equity reaching USD 1.8 billion at the end of 2018 (PMA, 2018).

2.2. Definition of Profitability

The main objective of banks is to achieve and maximize profits, like any business or organization that seeks to increase the wealth of its owners and increase the market value of its shares. This can be done by maximizing the amount of revenue, reducing costs, or both. Profitability can be defined as "The relationship between the profits realized by the enterprise and the investments that contributed to achieving these profits, and it is measured either through the relationship between profits and sales, or through the relationship between profits and investments that contributed to its realization" (Saunders, 2008). Therefore, profitability is the primary objective of banks and necessary for survival and continuity, and this goal is achieved through two important decisions:

- The investment decision, which is based on the use of surplus funds available to the bank in investment opportunities that achieve a higher return than the weighted cost of that money.

- The financing decision, which is the decision regarding how to choose the sources from which the funds will be obtained to finance investments in its assets. This decision must be made in a way that enables the bank's management to obtain more possible returns by taking advantage of fixed-cost borrowing but without taking on the risks that may result from over-borrowing.

Profitability also has an operational concept, meaning that profitability is achieved when the revenue generated is greater than the expenditures or costs.

2.3. Concentration in the Banking Industry

Market concentration is usually considered a proxy for market structure and an indirect measure of market power (Casu et al. 2006). The effect of market concentration on profitability in the banking industry remains controversial. In particular, the debate on the associations between competition, concentration, and efficiency in banking has raised issues among researchers and regulators.

The Herfindahl-Hirschman index (HHI) is an acceptable and common measure of market concentration, calculated by squaring the market share of each competing company in the market and then aggregating the resulting numbers, which can range from zero to 10,000. When the market is closer to an oligopoly, the more the market focuses and the less competition); for example, if there is one company in the industry, this company owns 100% of the market share, and the HHI may equal 10,000, thus indicating that there is an oligopoly.

In Palestine, the degree of concentration in the banking sector as measured by the HHI has continued to improve, as the value of the index has decreased. The improvement has occurred in both the degree of concentration measured in deposits and facilities. The degree of concentration in the banks' market share using private sector deposits reached 1,462.1 points in 2018 from 1,473.1 in 2017, indicating an improvement in the efficiency of the indicator. The index also registered an improvement in terms of banks' market share out of the total direct credit facilities, where the value of the index decreased by 6 points to 1,443.1 points. Both indicators are below the level of 1,800 points. This decrease in the index indicates that the level of deposits and facilities continuously improved and that there is a high degree of competitiveness in the banking sector (PMA, 2018).

Figure 1: Concentration in the banking sector (Herfindahl Index), 2014-2018



Source: PMA database

Credit granted to the government is one of the banks' main exposures to the public sector, specifically due to its sizable contribution to financing the government budget deficit. This credit concentration in the public sector is one of the major risks that threaten the stability of the Palestinian banking sector since credit granted to the government reached almost USD 2 billion, which exceeds the equity capital of the banking sector.

2.4. Previous Studies

One of the first studies that examined the impact of concentration in the banking industry was Heggstad and Mingo's (1976). The study investigates the impact of market power on the price competition for clients in the US market and discusses a basic hypothesis in which the market power that results from the concentration affects the bank's desire to compete. The study found a statistically significant negative relationship between the concentration in the banking market (measured using the HHI) from deposits and the prices of services provided.

Short's study (1979) investigates the relationship between concentration and the performance of commercial banks. The study examined 60 commercial banks in Canada, Western Europe, and Japan and found a direct correlation between profit before taxes and concentration ratio, calculated using the concentration of the three largest banks. The study model included bank variables, such as the degree of government ownership and the growth rate in assets, and economic variables, such as the price of interest and inflation, which were related to performance. The study found an inverse relationship between the degree of government ownership and profit, a positive relationship between the interest rate and profit, and a weak relationship between the rate of inflation and profit.

To examine the impact of industry concentration and market share on profitability, Genchev (2012) examines the impact of market share and concentration ratio on banks' profitability measured using the return on equity (ROE) in Bulgaria. The study used panel data of 22 banks between 2006 and 2010. The main research hypothesis was that the leading banks (measured using market share) should achieve better profitability. The results showed a positive and statistically significant relationship between market share and ROE.

Hamdan et al.'s study (2014) examined the relationship between the structure of the banking market and the profitability of banks in Bahrain and Kuwait. The sample of the study included 23 local banks in the two countries between 2005 and 2010. The results of the study support the behavior of the hypothesis structure - the performance hypothesis clarified the relationship between the market structure and the profitability of Bahraini banks - while the results did not support the structure of the hypothesis behavior - performance in the Kuwaiti banking market. The results do not support the traditional competency hypothesis in the Kuwaiti banking market.

Ahamed (2014) examined the effects of market concentration, bank-specific, and macroeconomic determinants of the profitability of the Indian banking industry from 2004 to 2011. The study looked at ways to mitigate the risks of the loan portfolio through diversification and comparison with the concentration of the portfolio and clarify the impact of this on the performance of banks. The study concluded that the loan portfolio may be diversified according to economic sectors, geographical regions and different industries may have a positive impact on the performance of banks and reduce their risks.

Finally, Hakimi et al.'s (2011) study "Testing the concentration-performance relationship in the Tunisian banking sector" tests whether concentration affected the Tunisian banking sector between 1980 and 2009. The study employed two measures of profitability, ROE and return on assets (ROA) for 13 banks operating in Tunis. The study found that concentration has a positive impact on Tunisian banking profitability.

3. Hypothesis

Based on the conceptual framework and the study objectives, the hypotheses were developed as follows.

Main hypothesis: There is a significant relationship between the market CONC and the bank's profitability.

Various sub-hypotheses were formulated from the main one:

H1: There is a significant relationship between market share of deposits and a bank's profitability.

H2: There is a significant relationship between BS and a bank's profitability.

H3: There is a significant relationship between CAR and a bank's profitability.

H4: There is a significant relationship between real growth domestic rate and a bank's profitability.

4. Research Method

4.1. Population and Study Sample

The study sample consists of all banks operating commercially and Islamic banks in Palestine, totaling 14 banks between 2008 and 2017.

4.2. Data Analyzing Instruments

A panel analysis applied to the sample of 14 banks in the Palestinian banking system between 2008 and 2017. The researcher used multiple regressions to analyze the collected data discussed below. There are one dependent variable and five independent variables in the model. The regression outcomes were obtained using SPSS.

Table 1: Selected data for the sample banks for 2018 in USD millions

Bank	Total Assets	Total Equity	Total Revenue	Customer Deposits	Net loans
Bank Of Palestine	1,286,036,545	449,961,687	220,934,607	3,768,631,790	2,518,590,540
Arab Islamic Bank	1,041,103,696	106,995,915	33,905,595	790,906,601	560,923,314
Palestine Islamic Bank	1,010,369,417	109,625,653	51,483,551	809,630,033	619,378,328
Palestine Investment Bank	443,291,111	90,899,358	19,253,947	297,663,960	210,578,198
Al Quds Bank	1,075,629,534	102,730,674	53,678,398	855,348,926	658,517,963
The National Bank	1,097,399,362	97,567,177	39,655,177	808,784,822	653,847,526
Arab Bank	3,547,941,320	296,020,440	163,140,161	3,022,899,717	1,784,676,441
Cairo Amman Bank	971,247,128	103,698,942	39,956,911	718,627,032	484,585,223
Bank Of Jordan	624,428,031	93,459,150	26,962,628	515,293,186	278,444,475
Housing Bank	645,348,587	99,190,300	26,756,075	521,282,010	208,358,488
Egyptian Arab Land Bank	170,651,353	44,890,975	6,103,100	102,253,911	105,116,988
Jordan Ahli Bank	411,958,896	83,898,798	18,626,159	299,040,866	198,784,700
Commercial Bank of Jordan	243,997,773	59,692,117	8,865,454	135,384,701	105,166,913
Jordan Kuwait Bank	139,801,616	50,935,221	2,834,808	67,257,401	21,496,172

Source: Author.

4.3. Applied Regression Model

The researcher built a study model that describes the relationship between the independent variables (market concentration expressed in terms of CONC, market share of deposits, CAR, BS, and real GDP growth rate) and the dependent variable of banks 'profitability measured using the ROA. Based on this, the study employed the regression models (presented below):

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

Where:

Y: Return on Assets (ROA)

(x1): Market concentration of credit (CONC)

(x2): Market Share of Deposits (MS)

(x3): Capital Adequacy Ratio (CAR)

(x4): Bank Size (BS)

(x5): Real GDP growth rate (RGDP)

These variables are indicators of concentration and market share and affect the profitability of banks. These variables were measured, using financial ratios available in the financial statements of Palestinian banks. These ratios are CONC, MS, BS, CAR and RGDP.

Table 2: Summary of the variables employed in the study

Variable	Measurement	Symbol
<i>Dependent Variable</i> Return on Assets	Net income / Total assets	ROA
<i>Independent Variables</i> Market Concentration	Bank credit /Total bank credit	CONC
Market Share of Deposits	Bank customer deposits/ Total banks deposits	MS
Bank Size	The natural logarithm of total assets	BS
Capital Adequacy Ratio	Total equity capital/ Total assets	CAR
Real Growth rate		RGDP

Source: Author's own.

Thus, the regression equation becomes

$$ROA = \alpha + \beta_1 (\text{CONC}) + \beta_2 (\text{MS}) + \beta_3 (\text{BS}) + \beta_4 (\text{CAR}) + \beta_5 (\text{RGDP}) + \varepsilon$$

5. Data Analysis and Testing the Hypothesis

5.1. The Descriptive Analysis

Table 3 presents the descriptive analysis for the study variables for the model.

Table 3: Multiple Linear Regression Matrixes for the model

Model		Coefficients ^a					Collinearity Statistics	
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Tolerance	VIF
		B	Std. Error	Beta				
1	(Constant)	2.205	.498		4.427	.000		
	CONC	.066	0.004	.805	8.208	.005	.643	1.421
	MS	.039	0.009	.211	2.346	.042	.780	1.138
	BS	.014	.004	.764	3.354	.010	.604	1.655
	CAR	-.360	.079	-.848	-4.545	.002	.636	1.573
	RGDP	.018	.042	.149	2.234	.681	.576	1.738

a. Dependent Variable: ROA

$$ROA = 2.205 + 0.066\text{CONC} + 0.039\text{MS} + 0.014\text{BS} + 0.360\text{CAR} - 0.018\text{RGDP} + \varepsilon$$

$$T(4.427) \quad T(8.208) \quad T(2.346) \quad T(3.354) \quad T(4.545) \quad T(2.234)$$

$$\text{Sig}(.000) \quad (.005) \quad (.042) \quad (.010) \quad (.002) \quad (.681)$$

$$R\text{-squared: } 0.478$$

$$F\text{-statistics: } 9.691^{**}$$

5.2. Results of Testing Hypotheses and Discussion

The major hypothesis tested was the relationship between the market concentration of banks credit and ROA as a profitability indicator. This hypothesis was measured using the market share of banks' credit as determined by the HHI. According to the results illustrated in Table 4, the study found that there was a significant positive relationship between the two. The statistical significance of CONC on ROA is .005, which is less than 0.05. Therefore, the hypothesis is accepted (there is a significant relationship between the market CONC and the bank's profitability). We can conclude that concentration has

created added value to Palestinian banks. The Palestinian banking sector faced a booming period for the last fifteen years particularly in the level of profitability achieved. Two of the fourteen banks (Bank of Palestine and Arab Bank) have almost half of the deposits, credit, and profits of the Palestinian market. The result is consistent with the previous findings of Goddard et al. (2004) and Allen and Gale (2004).

For the first sub-hypothesis (there is a significant relationship between market share of deposits and bank's profitability), the results in Table 4 show that there is a significant positive relationship between the two variables. The statistical significance of MS on ROA is .042, which is less than 0.05. Therefore, the hypothesis is accepted. The result is consistent with previous findings of Hamdan et al. (2014) and Athanasoglou et al. (2006). Higher market power, experience and economies of scale explain why market share creates higher profitability levels (Buzzel, 2004). Economies of scale provide larger firms with cost advantages (Sharp et al., 2002).

For the second sub-hypothesis (there is a significant relationship between BS and profitability), the results show that there is a significant positive relationship between the variables. The statistical significance of BS on ROA is .010, which is less than 0.05. Therefore, the hypothesis is accepted. Generally, large banks are supposed to record higher profits than smaller banks, taking advantage of many factors such as higher economies of scale, technological innovation, and cost-efficiency. The result is consistent with the previous findings of Goddard et al. (2004) and Murthy (2008).

For the third sub-hypothesis (there is a significant relationship between CAR and bank's profitability), there was a negative significant relationship between the two variables. The statistical significance of CAR on ROA is .002, which is less than 0.05. Therefore, the hypothesis is accepted. However, this inverse relationship could be attributed to the volume of negative reserves of banks, which produce poor profitability results; furthermore, it shows that larger banks such as the Bank of Palestine and Arab Bank are better placed than smaller banks in utilizing economies of scale and cost-efficiency policies to obtain higher profits. This negative relationship can also be attributed to the weak capital base of most banks in the Palestinian market.

Finally, the fourth sub-hypothesis (there is a significant relationship between RGDP and banks' profitability) had a positive but insignificant relationship as shown in Table 4. The statistical significance of RGDP on ROA is .681, which is more than 0.05. Therefore, the hypothesis is rejected. This result partially supports the view that high economic growth improves the business environment in which more individuals, households, and firms are involved in more bank transactions, particularly credit, thus leading to higher bank profitability.

6. Summary and Concluding Remarks

The banking sector in Palestine plays an important role in the Palestinian financial system, and it is considered an essential component of improving the financial system, especially due to the weakness of funding sources from other financial institutions.

This study investigated the effect of market concentration on the profitability of the Palestinian banking sector between 2008 and 2017. Fourteen banks were chosen as study sample. A regression model was used for the empirical analysis consisting of one dependent variable and five independent variables.

It can be concluded that the Palestinian banking sector is characterized by a moderately concentrated (fragmented) structure. However, the Arab Bank and Bank of Palestine have more than 50% of market profits. The findings of this study indicate that market concentration, market share, and BS had a significant positive effect on the sector profits measured using the ROA, while capital adequacy had a significant negative relationship with ROA. The macroeconomic variable RGDP had an insignificant positive effect.

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