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AUTHORS

Othman Sawafta 

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Othman Sawafta, Ph.D., Assistant
Professor, Business and Economics
Faculty, Computerized Financial and
Banking Science Department, Palestine
Technical University, Palestine.



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Othman Sawafta (Palestine)

RISK MANAGEMENT IN CONVENTIONAL AND ISLAMIC BANKS IN PALESTINE: A COMPARATIVE ANALYSIS

Abstract

The aim of the study is to compare credit risk between commercial and Islamic banks in Palestine. The study uses five commercial banks and two Islamic banks, so the Merton model is used to test the hypothesis regarding the research question. Also, cumulative logistic probability distributions are used to derive the probability of default from distance to default. The findings show that commercial banks encompass less credit risk than Islamic banks. Thus, the study recommends that financial institutions in Palestine master management skills and operational systems to cope with the financial environment. They need to increase research and training programs in risk management. Besides, there is a need to reduce lending to public sector (government). There is also a need for a focus on mergers, especially for smaller banks, to increase their capital, so that there are banking units that can compete in providing better customer services and contributing to the stability of the banking sector.

Keywords

credit risk, profit-loss sharing, financial institutions,
financial services, banks

JEL Classification

G20, G21, G23, G24, G28

INTRODUCTION

21 years ago, the financial sector in the West Bank and Gaza Strip formally grew after the signing of both the Oslo Accord in 1993 and the Paris Protocol in 1994. The latter affirms the right of the Palestinians to manage and administer monetary and economic relations to support the expected economic growth of their territories. At that period, the Palestinian Monetary Authority (PMA) was established to put into practice and control the required monetary policies in Palestine.

However, the Palestinian financial system, including all of its financial institutions, faces a set of risks that originate from various sources. The major and most dangerous of these risks is presented by the sustained existence and domination of the Israeli occupation in the Palestinian territories. As a result, the Israeli occupation made the Palestinian economy dependent on Israel as the dominant economy in the region, including its internal political, division, and the resulting adverse repercussions throughout the Palestinian territories. Further primary risks to the financial system reflect the financial difficulties the government faces, as well as the risks inherent in structural problems due to the failure to achieve the necessary legislative framework and governance measures by non-banking financial institutions. There are also risks of the neighboring countries that may affect the Palestinian financial system, especially the countries that suffer from a lack of economic and political stability. These countries may endanger Palestine with liquidity and affect the exchange rate.

Regardless of the aforementioned obstacles, the banking system and the financial sector in Palestine proved their ability to resist these risks; as well as the sustained progress in banking infrastructure. Also, great efforts are being done to develop laws, regulations, and procedures that organize the operations of these entities (PMA, 2013). The fundamental principle for risk management could be achieved by protecting and increasing the economic value of both the banks and their stakeholders, customers, including, shareholders, suppliers, investors, employees, the public, and the PMA.

Risk is defined as a prospective future hazard that possibly will occur from current action, like a failure to spot deadlines or cost overrun. Now, the loss is considered in terms of a loss in terms of credibility, direct financial loss, a loss of property, foregone future business, or a loss of life. Risk and failure are not always harmful, they could be necessary for economic development and are often the main element of learning to succeed. However, it is important to learn to weigh the possible negative outcomes of risk in favor of possible advantages of the associated opportunities (Van Scoy).

Financial risk is a probability that the actual return of a venture will be less than the anticipated return. This risk is categorized as follow: capital risk, basic risk, default risk, country risk, economic risk, delivery risk, exchange rate risk, liquidity risk, interest rate risk, operations risk, political risk, payment system risk, reinvestment risk, refinancing risk, sovereign risk, underwriting risk, and settlement risk (www.businessdictionary.com).

Conventional banks are financial institutions, owned by the private sector and accept time deposits and demand. They also make loans to both organizations and individuals. They also offer several services such as international banking, document collection, and trade financing. Interest is taken from clients on the borrowed money and the money earned on the deposited funds (www.absoluteastronomy.com). Banks charge interest on loans and pay interest on deposits. In contrast, the Islamic banking system works in harmony with the standards and principles of Islamic Sharia law. The Sharia law is a practical application in all Islamic economies. The main two Islamic banking principles are the sharing of both the profit and the loss. Add to this the prohibition of the collection and payment of interest, which is considered in Islam a taboo. Hence, Islamic banks operate mainly relying on Islamic principles regarding profit-and-loss sharing and other forms of investment. What is more, Islamic banks strictly avoid interest. Interest is determined as the root of exploitation and is responsible for large-scale unemployment and inflation. However, financing according to Shari'a means:

"... the act of providing financial products or services that conform to Sharia, Islam's law, and moral code. The defining characteristic of Islamic financial products is the avoidance of interest, known as 'Riba', derived from the Quran's stipulation that only goods and services, and not money itself, are allowed to carry a price. Instead, Sharia-compliant finance promotes risk-sharing or profit-and-loss sharing principles in all forms of business transactions" (Demirgüç-Kunt et al., 2013; Shihadeh, 2018).

This paper empirically explores the assertion that Islamic banks have higher or lower credit risk than commercial banks. It explores which banks have the highest credit risk in Palestine.

The article aims to provide empirical evidence from Palestine on the efficiency of Islamic investments and risks to explain the Islamic banks' future earnings compared to the commercial banks.

This paper is organized as follows: the next section provides a literature review, followed by methodology and results; the last section presents conclusions and recommendations.

1. LITERATURE REVIEW

Banks seek to increase their profits through credits and other financial services, while these facilities carry risks that lead to the loss of their assets, customer deposits and expected return (Shihadeh & Liu 2019; Shihadeh et al., 2018). The study by Ismal (2012) is aimed at formulating procedures to ease both bankruptcy and withdrawal risks. What is more, the balance point of revenue depositors sharing has been explained. For instance, a case of the Islamic banking industry has been employed in Indonesia. Financial mathematical formulas were used to assess the vulnerabilities of banks to withdraw and avoid bankruptcy and risk. It also deals with conditions of bankruptcy and solvency risks that decision-makers can use to lessen banks' risks.

Wiyono and Rahmayuni (2010) measure the impact of credit risk on the profitability of Islamic banks. The Islamic income and profit-sharing ratio were used and then determined if this occurred due to a moderating variable on the profit margin (PM), return on equity (ROE), return on assets (ROA), credit risk (credit), liquidity risk (liquidity) and the Islamic income variable's (Islnc) profit sharing ratio (PS ratio). The results show that the profit margin of the Islamic income-and-profit-sharing ratio moderates the connection between profitability and risk. However, ROA and ROE at the Islamic income and profit sharing ratio are not moderating variables. The findings also show that increasing the sample banks and using quarterly data might offer better results.

Nikolaidou and Vogiazas (2014) also examine the determinants of credit risk in the Bulgarian banking system by employing an autoregressive distributed lag model. They conclude that the soaring level of non-performing loans will lead to threatening the Bulgarian financial stability and its banking system to be under the domination of foreign commercial banks. On the other hand, there is an insignificant effect of the Greek debt crisis on the Bulgarian banking system.

Furthermore, the study by Hawaldar et al. (2017) comes to scrutinize the conventional retail banks' performance, both conventional and Islamic banks in Bahrain from 2001 to 2015. Financial

ratios on parameters such as liquidity, profitability, operating, capital, efficiency, adequacy, and leverage were employed. Empirically, the findings demonstrate that conventional retail banks, excluding Bahrain development banks, comprise steady performance in return on equity and assets. In contrast, the performance of Islamic retail banks at the Kuwait Finance House was considered reasonable in terms of profitability. The data also demonstrates that all banks had acceptable risk, as measured by their debt-to-asset ratios. The profitability of commercial banks and capital adequacy, their efficiency and profitability are correlated statistically. The findings confirm a significant difference in capital adequacy without a significant difference in profitability and liquidity of the listed commercial retail banks in Bahrain.

Shafiq and Nasr (2010), applying primary and secondary data, explored risk management practices in commercial banks in Pakistan. The findings show that, on the one hand, risk monitoring comes to be the most significant variable. On the other hand, applying regression analysis independently on each variable, such as understanding risk management, risk assessment, risk identification, and credit risk analysis, confirms a significant positive association between risk monitoring and risk management practices. The findings also shed light on some differences between private local banks and public sector commercial banks in terms of understanding and monitoring risk.

2. METHODOLOGY

2.1. Research procedure

A quantitative methodology has been used to inspect the credit risk inherent in modes of nonperforming financing and financing in commercial and Islamic banks. It examines whether these banks' profitability is influenced and measures the level of this influence. The secondary data are taken from the yearly and monthly-disclosed reports of commercial and Islamic banks published by the Palestinian Monetary Authority, the Central Bank of Jordan, the Association of Banks in Palestine and the Palestine Capital Market Authority. The collected data are taken from 7 banks; two of them are Islamic banks, and 5 are conventional banks.

However, some financial data were only obtained through formal requests to banks. The study also employed a mathematical approach to the formulas on credit risk: (asset drift rate, assets volatility or equity volatility, expected asset return, and the beta). What is more, the findings show some primary scenarios.

The study also deals with the inquiry of credit risk between commercial and Islamic banks in Palestine where there are no prior studies examined this question in the Palestinian territories or other Islamic countries. Doubtlessly, credit risk management is considered as a vital domain for the banking sector. Hence, banking professionals have to preserve a sense of balance between their returns and risks. Banks of greater customer bases have to provide a variety of products. It is worth mentioning that sound investment decisions mean harmonizing the products' risks against the probable returns. This study also raises a new research model to predict future earnings at commercial and Islamic banks in terms of the performance on equity and debt financing.

2.2. Data

This section will explain the employed methodology to meet the desired objectives. It measures the level of credit risk in commercial banks and Islamic banks in Palestine. This includes the asset drift rate, asset volatility (equity volatility), the beta, and the expected asset return. What is more, it demonstrates the methods and models used to find the results, the data, and the factors analysis of the models used.

Table 1. Banks included in the study sample

Commercial banks	Islamic banks
Bank of Palestine	Arab Islamic Bank
Quds Bank	Palestine Islamic Bank
The National Bank	–
Palestine Investment Bank	–
Palestine Commercial Bank	–

2.3. Variables

2.3.1. Expected asset return

The expected return on assets is employed to determine whether an investment can have a pos-

itive or negative average net outcome. This idea is based on the possibility of information-based trading and data on the potential effect of individual Palestine-exchange-listed stocks, and then on the expected asset returns.

The study by Greenwood and Shleifer (2014) also demonstrates that if possible returns (ER) are measured without noise, the model then will foretell a positive and perfect correlation between the ER and the investor expectations. Then the probable asset return is calculated as follows:

$$\text{Expected Asset Return} = R.F.R + (M.P + B), \quad (1)$$

where $R.F.R$ = Risk free rate; $M.P$ = Market premium assumed; B = Beta.

2.3.2. Asset volatility or equity volatility

This study calculated the historical asset volatility by employing the annualized standard deviation of the Palestine Exchange (PEX) depending on the daily stock return over the past 252 days or more. The historical asset volatility (the reflection of the degree to which the asset price moves) is employed while selecting investment security. This is intended to help determine the relative risk of a likely trade. That is why a stock that retains a relatively steady value owns slow volatility (low risk), where a highly volatile stock is inherently riskier. Consequently, the volatility of assets is calculated as follows:

$$\text{Assets Volatility} = S.d (\ln R) \cdot (\#O.T.D)^{0.5}, \quad (2)$$

where $s.d (\ln R)$ = standard deviation of share price returns for each year; $\# O.T.D$ = number of trading days.

2.3.3. Asset drift rate

The anticipated annual rate of return or the drift μ is achieved by employing the unbiased estimator and the last results of the daily return given by the following equation. The drift is considered as a measuring trend in the price (possibly

reflecting long-term inflation). Consequently, the drift may occur because of fees paid to market makers or transaction costs that put ready to buy or sell a certain stock at a publicly quoted price on a regular and continuous basis.

$$\begin{aligned} \text{Asset drift rate} &= \ln(1 + ER)^{0.5}, \\ \ln(1 + ER)^{0.5} &= \text{Squared Logitech's} \quad (3) \\ &\text{normal expected return on assets.} \end{aligned}$$

2.3.4. Beta

Beta is used as a fundamental analysis measurement tool to determine the volatility of a portfolio or an asset in the entire market. The beta is widely employed in the capital asset pricing model (CAPM) to work out the anticipated return on assets relying on its expected market returns and beta. Hence, stocks that swing greater than the market will have a beta greater than 1.0. Whereas, when a stock is less than the market, the stock's beta then will be less than 1.0.

$$Ba = \frac{ve}{(ve + vd(1 - T))} \cdot Be, \quad (4)$$

where Ba – asset beta; Be – equity beta; ve – market value of company's shares; vd – market value of company's debt; $ve + vd(1 - T)$ = after tax market value of company; T – company profit tax rate.

3. RESULTS

The selected banks of this study that are listed on the Palestine Exchange showed a consistent time series of annual data from 2009 to 2013, and all of them used variables in the estimation. The dataset consists of accounting data such as balance sheets, book debt variables, income statements, equity price, and the book equity value. However, the Palestinian banking industry is considered as one of the few traditional industries in the world that managed to fully employ the new technology and adapt its services to suit clients' preferences for online interactions and transactions. Consequently, stock holders must be acquainted with the bank's return rates and the expected asset returns as these are consid-

ered as the measures that maintain and determine share prices.

3.1. Islamic banks

Table 2 illustrates the coefficient estimates statistically. The significant estimates demonstrate that when the asset volatility, the beta, and the asset drift rate are high, then the expected stock returns are also high. The findings demonstrate that the expected returns of Islamic banks are high when past stock returns are also high and confirmed by the impulse response function. The returns continue to decrease from 2009 to 2013 due to decreases in the beta, asset drift rate, and volatility.

Table 2. Expected asset returns of Islamic banks

Source: Banks annual reports. Author calculations.

Islamic banks				
Arab Islamic bank				
Years	Expected asset return	Assets volatility	Asset drift rate	Beta
2013	0.50%	2%	2%	0.50%
2012	0.70%	3%	3%	5%
2011	0.50%	4%	4%	4%
2010	0.60%	4%	4%	7%
2009	1.10%	4%	4%	11%
2008	1.80%	6%	6%	9%
2007	3.70%	4%	4%	6%
Palestine Islamic bank				
2013	1.02%	3%	1.00%	11%
2012	0.85%	3%	0.90%	9%
2011	0.73%	3%	0.70%	9%
2010	0.32%	3%	0.30%	1%
2009	0.45%	2%	0.50%	2%

Note: Expected asset returns to Islamic banks' asset volatility, asset drift rate, and beta for two Islamic banks from 2007 to 2013.

3.2. Commercial banks

Table 3 shows the coefficient estimates. The statistical significant estimates demonstrate that the anticipated stock returns are high when asset volatility, beta, and asset drift rate are high. The findings show that the expected returns of commercial banks are high when past stock returns are high, which is also confirmed by the impulse response function. Indeed, the returns continue to decline for the period 2009 to 2013 due to decreases in beta, asset volatility, and asset drift rate.

Table 3. Probable asset returns of commercial banksSource: Banks' annual reports. **Author calculations.**

Commercial banks				
Bank of Palestine				
Years	Expected Asset Return	Assets volatility	Asset drift rate	Beta
2013	0.90%	3.20%	0.90%	8.90%
2012	0.90%	3.20%	0.90%	10.20%
2011	0.70%	5.00%	0.70%	8.80%
2010	0.70%	3.10%	0.70%	8.80%
2009	1.20%	7.30%	1.20%	14.20%
2008	2.00%	9.00%	2.00%	12.60%
2007	4.00%	12.40%	3.90%	12.00%
Quds bank				
2013	0.52%	2%	0.50%	1.30%
2012	0.46%	1%	0.50%	1.30%
2011	0.23%	2%	0.20%	-1.50%
2010	0.26%	4%	0.30%	-0.60%
2009	0.65%	5%	0.60%	2.10%
2008	1.69%	7%	1.70%	6.20%
2007	3.87%	10%	3.80%	9.70%
The National bank				
2013	0.99%	3%	0.01	11%
2012	0.66%	3%	0.007	5%
2011	0.41%	3%	0.004	2%
2010	0.53%	4%	0.005	5%
2009	0.83%	5%	0.008	6%
2008	1.85%	9%	0.018	9%
2007	4.66%	9%	0.046	26%
Palestine Investment bank				
2013	0.80%	4.18%	0.80%	6.58%
2012	1.00%	3.14%	1.00%	11.42%
2011	1.20%	5.22%	1.20%	17.76%
2010	0.80%	5.44%	0.80%	9.91%
2009	0.50%	5.01%	0.50%	-0.30%
2008	1.30%	7.74%	1.30%	-1.81%
2007	3.90%	10.25%	3.80%	9.79%
Palestine Commercial bank				
2013	0.50%	1.20%	0.50%	0.81%
2012	0.70%	2.50%	0.70%	5.59%
2011	-0.01%	3.30%	0.00%	-6.10%
2010	0.05%	4.10%	0.00%	-4.87%
2009	0.49%	6.40%	0.50%	-0.98%
2008	1.31%	7.50%	1.30%	-1.44%
2007	3.47%	5.40%	3.40%	1.88%

Note: Expected asset returns, asset volatility, asset drift rate, and beta for five commercial banks for 2007–2013.

CONCLUSION

This study aims to measure the anticipated asset returns, asset drift rate, asset volatility, and beta, and explore the aspects of each bank compared to its peers. The study findings demonstrate that there are differences among the selected banks by their type (Islamic and commercial). Empirically, the study demonstrated that all banks in Palestine appear to show signs of a low degree of credit risk. In contrast, commercial banks show a lower credit risk than Islamic banks.

The study recommends that financial institutions in Palestine work to improve their management skills and operational system to cope successfully with the current financial environment. However, the new developments in computing and mathematical finance and innovations in risk management techniques offer some technical and practical solutions. Banks also need to increase risk management research and training and place the right person in the right position.

Banks are considered as a basic credit resource in local markets. This is because the capital market is limited and fragile. There is no opportunity to offer investors adequate funding sources. The results show that the public sector's share of total credit by banks should reduce lending to the public sector or government sector, but this would increase banks' exposure to high risk.

AUTHOR CONTRIBUTIONS

Formal analysis: Othman Sawafta.

Investigation: Othman Sawafta.

Writing – original draft: Othman Sawafta.

Writing – reviewing & editing: Othman Sawafta.

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