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The Impact of Credit Risk on the Profitability of Banks Listed on the Palestine Exchange

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Abstract
This study seeks to analyze the impact between credit risk and the profitability of five banks on the Palestine Exchange. Profitability was measured by return on equity and return on assets while credit risk was measured by net charge-offs to total loans and advances, non-performing loans to total loans and advances and pre-provision profit to total loans and advances. Other variables like bank size, leverage and net income growth were included to account for their effects. The study found a weak but positive relationship between credit risk as measured by non-performing loans to total loans and advances and profitability as measured by return on assets. The study also found that bank size was positively related to profitability.
Keywords: Profitability, Credit Risk, Palestine Listed Banks

1.0 Introduction

Before the meltdown of Lehman Brothers in September 2008, the firm was the fourth largest investment bank in the United States, having been in operation for 158 years. This meltdown propelled horrors in the financial sector of the United States and sparked a global financial crisis not witnessed in over 80 years. The effects were felt worldwide, even after a decade, as GDPs of major economies continually took a tumble. Europe could not properly contain the remnants of the global crisis and that started another crisis in the region; Greece was hard hit, as it failed to meet its financial obligations with the International Monetary Fund (IMF). One notable cause of the collapse of Lehman Brothers was *"financiers themselves—especially the irrationally exuberant Anglo-Saxon sort, who claimed to have found a way to banish risk when in fact they had simply lost track of it. Central bankers and other regulators also bear blame, for it was they who tolerated this folly"* ... mortgage lenders had completely ignored the risks associated with providing mortgage loans to borrowers with low credit scores (The Economist Newspaper Limited, 2013).

One of the traditional ways that banks make money is through giving out loans. It is in the interest of banks to give out loans, but to do so prudently. As banks try to protect their interests and the equity of their shareholders through securing and insuring loans, very little can be done to eliminate the risk of default. The idea that a borrower, having access to funds today, can repay using income not yet earned, looks risky, even from afar. Credit risk is the likelihood that a borrower will default to meeting financial obligations as per agreed terms (Bank for International Settlements, 2008). Whenever banks agree to lend money to a borrower, even those with good credit history, there is always the risk of losing the principle, accrued interest or both. Banks cannot possibly ensure that all loans given out are fully paid with accrued interests, and on time. They try to secure loans and manage risks but still cannot ensure that every coin loaned out is recovered accordingly. Banks that are able to effectively and efficiently manage and master the practice of giving out loans with minimal non-performing rates tend to make the most profit, and stand a better chance of survival in the long run (European Central Bank, 2016).

"The role of banks in economic development is to remove the deficiency of capital by stimulating savings and investment. A sound banking system mobilizes the small and scattered savings of the community, and makes them available for investment in productive enterprises" (Tushar, 2016). The role that banks play in every economy, developing or developed, cannot be overemphasized. Governments role out economic and monitory policies to manage inflation, encourage spending or savings through commercial banks. Commercial banks also serve as the intermediaries between the government and the general population if the government wants to borrow from the public through issuing out treasury bills. Banks also formulate the required capital for investments. This is the practice of loaning out funds to companies to expand or increase their economic activities. As companies increase their economic activities and expand, government revenue also increases through taxes and levies. The economy generally performs better if banks are also in good standings.

The Palestine economy is forecasted to face many challenges in 2017 by the International Monetary Fund. They attributed this prediction to high unemployment rates, political uncertainties and restrictions which stifles private sector investments. They also reported worsened humanitarian conditions as a result of delayed aid disbursements. These observations will definitely be opposed by the Finance Ministry which managed to increase GDP from 3.5% in 2015 to 4% in 2016, reduced fiscal deficit, and increased tax revenue, even when faced with a decline in donor budget support. The public-sector wage bill (the largest expenditure item of the Palestine government) was also found to be a problem. The IMF recommended that an increase in the bill should be tied to inflation. The IMF added that *"efforts to maintain financial stability will be equally important to*

ensure the financial sector can support sustained economic progress. In this regard, the possible withdrawal of Israeli correspondent banking relationships remains a key risk. The Palestine Monetary Authority (PMA) remains committed to strengthening the anti-money laundering and combating the financing of terrorism (AML/CFT) framework, in line with international standards. In this context, we welcome the constructive working relationship between the Palestine Monetary Authority (PMA) and Bank of Israel" (International Monetary Fund, 2017).

Looking at what the Palestine government must do to turn its macroeconomic fortunes around, commercial banks will play a major role, especially with helping to maintain financial stability. The Palestine Exchange has 6 listed banks. Their role in economic development is immense and therefore assessing the impact of their credit risks on profitability is very important. Also, a good measure of credit risks will boost the much-needed private investment and a good measure of profitability will also depict that the banks will survive in the long run. If there are no distress in these banks from striving to manage credit risks (which is believed to be a primary responsibility), they will willingly support government's efforts to boot economic performance through monetary policies. If tackling fiscal and financial risks must take on added importance from the government's perspective, commercial banks must also ensure that their credit risk and profitability also take on added importance. It is only when these two key players play their parts in the economic development agenda that set targets can be achieved. Also, The Basel Committee on Banking Supervision (2006), reported that banks in an economy with macroeconomic issues are more likely to have high credit risks. That hightens the importance of the study of credit risk and profitability of banks listed on the Palestine Exchange. The objective of this study is;

- To assess the impact of Credit Risk on the Profitability of Banks Listed on the Palestine Exchange.

The researcher believes that the study will be relevant to all stakeholders in the Palestine economy and contribute literature to the subject of credit risks in banks and profitability.

2.0 Literature Review

The risks associated with the operations of the banking sector of every economy are many. The most common ones are credit risk, market risks, liquidity risks, interest risks, and earning risks. Banks however, pay more attention to credit risks, operational risks and market risks. Because giving out loans is one of the primary means through which banks generate revenue, more attention is paid to credit risks in this study. Also, most banks have 50-70% of their value in loans so credit risk is very important subject to them. The health of the banking sector in an economy is measured by how banks are able to effectively manage credit risks. Credit risks are also tied to how good or bad the assets of a bank are. How good or bad a bank's assets are also dependent on non-current receivables and its loan profitability (Baral, 2005).

Giving out loans comes with its own risks; funding risk, interest risk and foreign exchange risk. A critical assessment of banking trends in the past has suggested that credit risks associated with asset portfolio causes most banks to worry (Basel Committee on Banking Supervision, 2006). The Committee also made claims that credit risks are no more limited to loans, but extend to other financial instruments and some transactions with other banks. Failed banks are no more criticized for poor operations; non-performing loans are always the major cause when a bank fails and that to some extent can also be associated to macroeconomic problems in an economy. The ability of a bank to make profit and stay in operation depends on how it can make enough room to avoid risks, but most importantly, be able to react positively to loses from non-performing loans (Bobakovia, 2003).

To manage financial risk is to use other risk-free financial instruments to offset the exposure to major risks. Just like any other risk management strategy, credit risks managements also require identification, measurement and planning for solutions. This process ensures that banks take the necessary precautions before approving loans and restructuring old credit facilities. Basel Committee on Banking Supervision (2006), indicated that when these processes are instituted, it controls the risks associated with connected lending. Banks are no more taking credit history and background checks before giving out loans for granted. In the past, a borrower's ability to secure a loan through the provision of collateral guaranteed approval. Now, banks are more focused on assesses a borrower's ability to repay the loan. Banks now acknowledge that secure borrowing is no more enough; it does not eliminate credit risks. If anything at all, it increases it. If a borrower cannot generate enough revenue to meet financial obligations, a lien over a property will be the least of subjects for concern.

One of the problems other researchers identify with the financial sector is their highly demanding environment and nature of work. An observation made by Sanusi (2002), revealed that banks overworked their personnel. This was identified as the key cause of *"poor credit appraisal systems, financial crimes, and the accumulation assets with poor quality"* which eventually increased the credit risks of financial institutions. This theory is yet to be adequately proven to show a direct correlation between the blunders of the personnel of a banking institution and credit risk. Boyd (1993), had already emphasized on the importance of an effective credit appraisal system to scrutinize loan applications before they are approved to reduce the risk of default. It is relevant to set up legitimate credit risk conditions in a bank to include sound credit risk approval system,

periodic evaluations and measurements of a bank's credit exposure to ensure absolute control over credit risks.

By far, some of the common measurements of credit risks are pre-provision profit over total loans and advances, net charge offs over total loans and advances, and non-performing loans over total loans and advances. According to the European Central Bank (2016), *"a bank loan is considered non-performing when more than 90 days pass without the borrower paying the agreed installments or interest. Non-performing loans are also called bad debt."* A loan which performs will bring in projected revenues and provide the funds needed to lend to other borrowers. When borrowers default, banks have to stretch their capitals to raise funds to give loans to prospective borrowers. If it fails to raise new funds to loan out, the bank's capacity to generate revenue through interest on loans also reduces. Any bank which finds itself in a situation like that will struggle to compete and survive in the long term. In India, the loan activities of commercial banks in the public sector were evaluated using regression analysis. They found out that non-perfoming loans were influenced by the general macroeconomic conditions in an economy together with the terms of the loan, and the size of the bank (Rajan & Dhal, 2003).

As a measure of profitability, return on equity and return on assets were identified as some of the most commonly used indicators by many researchers. Return on Asset is the ratio of net income and total assets. This ratio indicates how a bank manages to turnaround its assets to generate revenue. When it comes to assessing a bank, whose assets are mostly liquid cash, the ratio measures their level efficiency in maximizing the returns on their assets. A higher return on assets is a healthy indicator of profitability so banks strive to attain it. *"As a general view, particularly in banking sector, ROA is known as good profitability multiplier for the reason that equity multiplier does not influence it"* (Grier, 2007). Return on Equity is a ratio which measures net income over shareholder's equity. *"The net income comprised of all types of earnings like preferred stock income, surpluses, undivided profits and capital reserves. The difference between net assets and liabilities is termed as shareholder's equity on the other hand. The most common measure to determine the effectiveness of banks of generating revenue based on every element of shareholder's equity"* (Saeed & Zahid, 2016).

A study conducted by Hosna, et al. (2009) on four commercial banks in Sweden, for the 2000 to 2008 financial year, revealed a positive correlation between credit risk and profitability. Kithinji (2010), conducted a study to assess the impact of credit risk on profitabilty using commercial banks in Kanya. The study resulted in a neutral impact from credit risk on profitability. Four years later, another researcher in Kenya, Akonga'a (2014), conducted a study using data gathered from 2008 to 2013 on 44 commercial banks in Kenya to find the effect of financial risk management on the financial performance of banks in the country. Her study used return on assets as a measure of financial performance and non-performing loans as a measure of financial risk. Findings revealed that financial risk had significant impact on the financial performance of commercial banks.

That same year, Abiola & Olausi (2014), also conducted a similar study in Nigeria to measure the impact of credit risk on the performance of banks in the country. They sampled 7 commercial banks, using their 2005 to 2011 financial data for the study. They opted for return on equity and return on assets as performance indicators, and non-performing loans and capital adequacy ratio as credit risk indicators. The findings were the same as the study conducted in Kenya; credit risk had a significant impact on profitability of banks.

In Bangladesh, Noman, et al. (2015), conducted a study on the effect of credit risk on banking profitability. They used non-performing loans ratio, loan loss reserve to gross loan, loan loss reserve to non-performing loan and capital adequacy ratio as the credit risk variables. To measure profitability, return on assets average assets, return on average equity and interest margin ratio were used. The financial reports for the 2003 to 2013 financial year of 18 private banks were evaluated and the results revealed that prudent credit measures were key contributors to profitability.

Banks listed on The Ghana Stock Exchange were also assessed by Djan, et al. (2015), that same year. 9 banks were used and data covering the 2005 to 2014 financial year were analyzed. Their study found default rate, capital adequacy ratio, and cost per loan asset as having significant impact on a banks profitability. Even though all the 3 risk indicators they used proved statistically significant in determining the impact on profitability, loan default rate came out as the most important indicator.

Saeed & Zahid (2016), focused their measurement of the impact of credit risk on profitabiliity on 5 commercial banks in the United Kingdom. They used return on assets and return on equity as a measure of profitability, and impairments and non-performing loans as a measure of credit risk. Financial data from 2007 to 2015 were gathered for the analysis and findings were firm on credit risk having a positive relationship with profitability. They also found that banks in the United Kingdom are still indulging in activities which increases their credit risks; a suggestion that no lesson was learnt by these banks from the 2008-2009 financial and credit crisis.

3.0 Research Methodology

Research Design

The research is an exploratory study into the relationship between credit risk and the profitability of banks listed

on the Palestine Exchange.

Sample

The study uses data collected from the financial statements of five, out of the six, listed banks on the Palestine Exchange from 2010 to 2015. The banks are as follows:

- Palestine Investment Bank
- Al Quds Bank
- The National Bank
- Arab Islamic Bank
- Bank of Palestine

The only bank not considered for the study was Palestine Islamic Bank. This was due to the lack of data for the period needed for the research.

Data Collection

The data was collected in order to establish the relationship (if any) between credit risk and profitability. The profitability of the banks is represented by Return on Equity (ROE) and Return on Assets (ROA). These two will serve as the dependent variables. The independent variables that will measure credit risk are pre-provision profit over total loans and advances, net charge offs over total loans and advances and non-performing loans over total loans and advances. The effect of other independent variables like bank size, growth and leverage will also be accounted for.

The Model

The study uses a general linear model of regression to establish the relationship between the independent and the dependent variables. The model is as follows:

$$ROE_{i,t} = \alpha_0 + \beta NCOTLA_{i,t} + \gamma NPLTA_{i,t} + \delta PPTLA_{i,t} + \varepsilon SIZE_{i,t} + \epsilon GRO_{i,t} + \theta TDA_{i,t} \quad (1)$$

$$ROA_{i,t} = \alpha_0 + \beta NCOTLA_{i,t} + \gamma NPLTA_{i,t} + \delta PPTLA_{i,t} + \varepsilon SIZE_{i,t} + \epsilon GRO_{i,t} + \theta TDA_{i,t} \quad (2)$$

The variables are explained below.

Table 1: Definition of Variables

VARIABLE	DEFINITION	EXPECTED SIGN
ROE	Profitability = Return on Equity = Net Income / Total Equity	
ROA	Profitability = Return on Assets = Net Income / Total Assets	
NCOTLA	Credit Risk = Net Charge Off (Impairments) / Total Loans and Advances	+ / -
NPLTLA	Credit Risk = Non-Performing Loans / Total Loans and Advances	+ / -
PPTLA	Credit Risk = Pre-Provision Profit / Total Loans and Advances	+ / -
SIZE	Bank Size = Total Assets	+
GRO	Growth = Growth in Net Income Year on Year	+
TDA	Leverage = Total Debt / Total Assets	+

The dependent variables in the models are Return on Equity and Return on Assets. These stands for the profitability of the banks. The credit risk of the banks is measured by the independent variables Net Charge Offs to Total Loans and Advances, Non-Performing Loans to Total Loans and Advances and Pre-Provision Profit to Total Loans and Advances. The other independent variables in the model are the Size of the banks, the Growth in Net Income of the banks year-on-year and the Leverage of the bank.

4.0 Results and Discussions

Descriptive Statistics

Table 2: Descriptive Statistics of Variables

VAR	N	Minimum	Maximum	Mean	Std. Deviation
ROE	30	.13	2.86	.3211	.48716
ROA	30	.02	.05	.0319	.00778
NCOTLA	30	.00	.02	.0034	.00384
NPLTLA	25	.00	.06	.0197	.01733
PPTLA	30	-.03	.03	.0121	.01015
SIZE	30	158139737.00	2785203240.00	775784876.7333	734150859.55553
GRO	30	-.24	8.81	.5813	1.60590
TDA	30	.74	.90	.8527	.05168

Table 2 above shows the descriptive statistics of the data gathered from the banks. It can be observed that the average (mean) return on equity is 32.11% while the average return on assets was 3.19%. The average rate of non-performing loans to total loans and advances is 1.97% which indicates a generally low level of credit risk.

Test for Multicollinearity

In order to ensure that the data does not suffer from multicollinearity, the study uses the Variance Inflation Factor (VIF) and the Tolerance test. The results as shown in table 3 below show that multicollinearity does not exist in the data as none of the VIF values for both independent variables is higher than 10 and none of the tolerance values is below 0.1.

Table 3: Test of Multicollinearity

	Tolerance	VIF
NCOTLA	0.432	2.313
NPLTLA	0.356	2.806
PPTLA	0.526	1.902
SIZE	0.466	2.148
GRO	0.488	2.051
TDA	0.404	2.474

Results of Regression

The results of the regression are shown below.

Table 4: Model Summary of Regression

Model	R	R Square	Adjusted R Square	Std Error of the Estimate
1	0.386[a]	0.149	0.135	0.56534
2	0.880[a]	0.775	0.700	0.00401

a. Predictors: (Constant), Non-Performing Loans to Total Loans and Advances, Bank Size, Growth, Pre-Provision Profit Over Total Loans and Advances, Net Charge Offs Over Total Loans and Advances, Leverage

The R Square value of 0.149 shown in Model 1 of Table 4 above shows that only 14.9% of the variation in the dependent variable, Return on Equity, can be explained by variations in the independent variable. The R Square of 0.775 for Model 2 shows that 77.5% of the variations of the dependent variable, Return on Assets, can be explained by variations in the independent variables.

Table 5: Analysis of Variance[a,b]

	Model	Sum of Squares	Mean Square	F	Sig.
1	Regression	1.007	.168	.525	.782[b]
	Residual	5.753	.320		
	Total	6.760			
2	Regression	.001	.000	10.318	.000[b]
	Residual	.000	.000		
	Total	.001			

a. Dependent Variable: Return on Equity
b. Dependent Variable: Return on Assets
b. Predictors: (Constant), Non-Performing Loans to Total Loans and Advances, Bank Size, Growth, Pre-Provision Profit Over Total Loans and Advances, Net Charge Offs Over Total Loans and Advances, Leverage

For Model 1, the p-value (Sig.) of 0.782 is far greater than 0.05 which shows that overall the model does not predict the dependent variable of return on equity well. However, the p-value of Model 2 shows that the model predicts the dependent variable of return on assets well.

Table 6: Coefficients

Variables	ROE			ROA		
	Coefficients	t-value	Sig	Coefficients	t-value	Sig
Constant	-3.783	-1.271	.220	.043	2.026	.058
NCOTLA	-41.056	-.573	.574	.457	.898	.381
NPLTLA	15.554	1.394	.180	.196	2.473	.024
PPTLA	.107	.005	.996	.294	1.911	.072
SIZE	-8.776E-011	-.410	.687	6.716E-012	4.361	.000
GRO	-.067	-.716	.483	.001	1.019	.322
TDA	4.781	1.432	.169	-.029	-1.226	.236

From Table 6 the beta coefficients of both models can be observed. From the model, it can be seen that Return on Equity as a measure of profitability cannot be explained by credit risk because none of the p-values shows a statistically significant relationship. However, with Return on Assets as the profitability measure, the p-values of Non-Performing Loans to Total Loans and Advances and Bank Size show that there is a statistically relationship between those variables and Return on Assets. Non-Performing Loans to Total Loans and Advances which measures credit risk has a weak positive correlation with profitability as measured by Return on Assets. The Size of the bank also shows a very weak but positive correlation with Return on Assets.

5.0 Conclusion

The objective of the study is to assess the impact of Credit Risk on the Profitability of Banks Listed on the Palestine Exchange. Based on the 2010 to 2015 financial information of five banks listed on the exchange the study concludes that credit risk, as measured by non-performing loans to total loans and advances has a weak but positive relationship with profitability as measured by return on assets. The study also found a weak but positive relationship between the sizes of the banks and profitability.

The findings of the study are not surprising. Although credit risk is generally seen as a negative to the stability of banks, it allows banks to charge high interest rates to account for the risk and therefore it improves profitability. The findings are similar to that of other studies such as Saaed & Zahid (2016) and Boahene, Dasah and Agyei (2012) which also found a positive relationship between credit risk and profitability.

Despite the fact that credit risk improves profitability, the issue of long-term stability is important and this may be harder as banks are more exposed to credit risk. Further studies that look at the long-term stability of banks which take on credit risk is therefore suggested in order to give banks an insight on the trade-offs between profitability and long-term stability.

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