International Journal of Engineering & Technology, 7 (3.25) (2018) 626-632

International Journal of Engineering & Technology

Website: www.sciencepubco.com/index.php/IJET

Research paper

Management Accounting Systems and Credit Risk Management Policies and Practices towards Organizational Performance in Palestinian Commercial Banks

Ahmed Thabet[1]*, Omar Alaeddin[2]

[1]Limkokwing University, Malaysia
[2]UniKL Business School, Universiti Kuala Lumpur, Malaysia
**Corresponding author E-mail: omar.alaeddin@unikl.edu.my*

Abstract

The aim of this paper is to report the results of a study on the linkages between credit risk management (CRM) policies and practices and management accounting system (MAS) toward organizational performance through testing the match and joint effects of MAS and CRM on organizational performance. The research method involved two data collection methods. Firstly, this study implemented an empirical investigation for the relationship between credit risk management policies and profitability of commercial banks in Palestine over the period of 7 years (2008-2014), eleven commercial banks were selected. The financial theory was employed to create the research model; Return on Asset (ROA) and Return on Equity (ROE) are defined as proxies of profitability while capital adequacy (EQTA), credit monitoring (LLPI), income diversification (NIDR) and operational performance efficiency (DTL) are defined as proxies of credit risk management. Panel model analysis was used to estimate the determination of the profit function. Secondly, administering a questionnaire to 11 commercial banks listed on the Palestinian Monetary Authority website and the respondents were those in the risk management department on banks such as chief executive officers (CEOs), chief risk officers (CROs), chief financial controllers, general managers, risk managers, and bank employees at departments related to risk management in Palestinian commercial banks. Based on the IFAC's (1998) framework and the Bank of International Settlement report (2013), results revealed that the credit risk management does have significant effect on the both ROA and ROE, While EQTA has a negative insignificant effect on ROA. However, the relationships between all the proxies are fluctuated. In light of the relationship between CRM practices and MAS toward organizational performance, Integration between costing system, Budgeting and information for decision making MAS × CRM Policies is positively associated with organizational performance. Likewise, some management accounting practices works to assist in managing credit risks in two main dimensions costing system and budgeting. The finding also confirms the important role of interaction between CRM, MAS and organizational performance.

Keywords: *Management Accounting Systems; Credit Risk; Risk Management*

1. Introduction

The banking sector plays an intrinsic role in the economy. It performs as intermediaries between two essential parties that are the surplus and deficit units. This intermediary action is considered decisive to ensure the efficient allocate of resources in the contemporary economy (1). As noted in the latest US global financial crisis, the collapse of the financial institutions robustly affects the stability of the whole economy, and, consequently, it is crucial to preserve the veracity, soundness and stability of the financial institutions.

Financial institution extend credit to the investors for investment purposes there are possibility that investment may not perform worthy or collapsed to generate positive Net Present Value (NPV). If this scenario happens investors are defiantly unable to refund the credit extended by financial institution and risk of default appears. Credit creation is the main income generating activity of banks. With increase in bank exposure to credit it tendency to undergo a financial crisis also increase. These crisis leads to bad impact on the economy as a whole, particularly when central bank and supervisory authority unable to prevent and address the determinants of the problem. Fundamental portion of bank earning is created from the interest gained on loan extended to their clients. Kithinji (2) mentioned that credit risk mainly arises due to lack of institutional capacity, in appropriation of credit policies, poor quality of management, lapses of laws and regulation and inefficient lending practices and accurate interference of central bank. So, credit risk management indispensable for profitability and bank survival. Credit risk is internal determinant of bank profitability. The higher the exposure to credit risk, the higher the tendency for banks to experience financial crisis. Chen & Pan (3) defined credit risk as the extent of value fluctuation of loans and derivatives due to change in the credit quality of borrowers and counterparts as well.

Management Accounting System (MAS) indicates to the systematic implement of management accounting to achieve the main goals of the organizations. Great design of MAS helps managers to be more efficacious in decision making, thereby aiding organization improving their efficiency and become more competitive toward any challenging environment, this definitely improves the performance of organizations (4). Few researches such as, Williamson (5) have claimed that management accounting system is backing risk management activities. Both of management accounting and risk management are expected to complement each

other and support enterprise decision making. MAS affect risk management through risk aggregation, reporting, monitoring and communication. MAS contribute on reducing management decision making uncertainty by providing appropriate information.

There is a growing body of literature that examines the effect of MAS and performance as well as RM and organizational performance, the knowledge of linkage method MAS and RM that can reinforce the banks performance remains a gap. Soin & Collier (6) argued that still the awareness about the relationship between risk management and management accounting system is weak. Therefore, this research intends to provide a proposed risk management framework especially credit risk management, depending on accurate information for management decision making and appropriate measurement of credit risk.

Hence, consistent with the discussion above, the main research objective is to examine the extent of MAS dimensions moderate the relationship between credit risk management policies and practices and banks profitability. In order to assess this relationship several objectives are tested at this study which are:

1- To determine the relationship between credit risk measured by capital adequacy and profitability in commercial banks of Palestine.
2- To evaluate the relationship between credit risk measured by credit monitoring and profitability in commercial banks of Palestine.
3- To assess the relationship between credit risk measured by income diversification and profitability in commercial banks of Palestine.
4- To examine the relationship between credit risk measured by operational performance and profitability in commercial banks of Palestine.
5- To identify to what extent Palestinian commercial banks follow credit risk management practices techniques and what their effects are on bank's profitability?
6- To achieve the efficiency of the moderating role of management accounting system between credit risk management policies and Palestinian banks profitability.
7- To achieve the efficiency of the moderating role of management accounting system between credit risk management practices and Palestinian banks profitability.

As shown by Figure 1 which summarizing the Theoretical Framework of the Research.

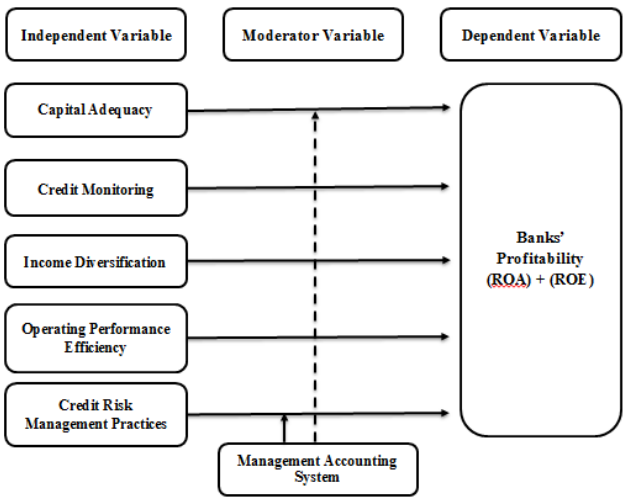

Fig. 1: Theoretical Framework of the Research

2. Theoretical Framework

Over the last 10 years, the quality of the loan and its portfolios across many economies worldwide stayed comparatively stable until the emergence of 2007-08 financial crises. Since then the quality of the bank assets declined quickly because of the world economic downturn. The reality is that the loan performance is closely associated with the economy of any country and decline in the loan performance was not yet standardized across the world economies.

Figures from several studies indicates that non-performing loans ratio which is a sign for bad loans through the world commercial banking sector was considerably high between years 2000 and 2011 (7, 8). This was defiantly because of several of reasons like poor loan processing, inadequate loan collaterals, inefficient credit risk management, and various negative impacts of banks profitability. Therefore, through ultimate importance of credit in the banking sector and it clear impacts on economic, it is totally significant to find the relation between credit and profitability of the banks. Hence, a sincere endeavor is established in this dissertation to make the modest contribution to the credit risk literature by analyzing the impact on Palestinian banking sector.

Recently, Management Accounting System (MAS) becomes an integral part of the management process and activities. According to (4, 9), appropriate and well-designed MAS helps organizations improving their efficiency and remain competitive will automatically improve the organization's performance. In theoretical terms, a variable can be considered as a moderating variable if it affects the strength and/or direction of the relationship among a predictor and an outcome. Generally, a moderator variable is a qualitative or quantitative variable that affects the direction and/or strength of the relation between an independent or predictor variable and a dependent (10). According to Mikes (11) and Woods (12), both of ERM and MAS are considered as control systems that complement each other which consistent with the contingency theory. Contingency theory depends on a main concept which is "Fit"(13). "Fit" clarification made by three different forms which is used in several previous contingency-based management accounting research, are selection, interaction and system approaches. Contingency theory is an approach to the study of organizational behavior in which illustration are given as to how contingent factors like; technology, culture and the external environment influence the design and function of organizations. The assumption underlying contingency theory is that no one type of organizational structure is evenly applicable to all organizations. To some extent, organizational effectiveness is relay on a fit or match between the type of technology, environmental volatility, the size of the organization, the features of the organizational structure and its information system. Contingency theories were developed from the sociological functionalist theories of organization structure such as the structural approaches to organizational studies by (9). These studies assumed that organizational structure was contingent on contextual factors such as technology, dimensions of task environment and organizational size. In some other literature, contingency theory was still regarded as a dominant paradigm in management accounting research (14).

3. Literature Review and Development of Hypotheses

3.1. Bank Capital and Profitability

According to Farrell & Newman (15), the main reason which generates the decrease in the dollar and foreign reserves is the variation in foreign exchange earnings which also affected banks' capital. Goddard, Molyneux, & Wilson (16) mention that a bank that is operating over-cautiously and ignoring potentially profitable trading chances should be signified by a high capital adequacy ratio, and a negative relationship between equity to asset ratio and bank performance is implied. Iannotta, Nocera, & Sironi (17) found an important positive relationship between regulatory capital ratios and two indicators of banks performance using 15 European countries as a sample. Likewise, Lee & Hsieh (18) found that capital ratios are positively correlated with banks when they examined some banks in Asia. Demirguc-Kunt et al. (19) stated that

in the time of the financial crisis 2007-2008, higher capital ratios have a positive effect on bank stock returns. Further, Ozili (20) studied some African banks and remarked that regulatory capital has a significant positive impact on profits of listed banks, while higher regulatory capital thresholds have a reciprocal influence on the profits of non-listed banks. For that we developed our first hypothesis:
H1: There is no significant relationship between capital adequacy and the Palestinian commercial banks' profitability.

3.2. Credit Monitoring and Profitability:

Measures in credit monitoring are used to ensure that the current financial condition of the borrower and counterparty is understood by the bank, to make sure that the existing covenant is in subjugation with all credits, to follow the use customer make of approved credit lines, to confirm that debt servicing requirements are in compliance with cash flow on major credits, and to ensure that where applicable, collateral provides adequate coverage relative (21).
Dugan (22) suggests that the level of loan loss provisioning have to be able to demonstrate the beliefs of bank management on the quality on the loan portfolio that they own stating that provisions must be able to include the whole spectrum of potential credit losses if they think of provisions as a measure of true credit risk. Gremi (23) analyzed the essential and the most important eternal factors that affect Albanian commercial banks profitability over the time from 2005 to 2012 through using regression analysis fixed effect. These factors are bank size, credit risk, loans, deposits and interest income. Findings come with various results and show that higher total asset leads to higher profit. Higher loans contribute toward profitability but it comes with less significant impact on overall profitability. There is a negative relationship between credit risk and banks profitability. Total deposits to total assets and total equity to total asset provide a positive and significant relationship with bank's profitability. Ramlall (24) talked about the negative relationship between credit risk and profitability. He shows that whenever there is a negative relationship between them, they reveal greater risk linked with loans, the higher the level of loan loss supplies which thereby and create a trouble at the profit-maximizing strength of a bank. For that we developed our second hypothesis:
H2: There is no significant relationship between credit monitoring and the Palestinian commercial banks' profitability.

3.3. Income Diversification and Profitability:

Huang & Chen (25) believed that non-interest income is one of the important sources of variegation for banks. In addition, changing their concentrations form traditional income sources into non-interest sources, banks will be able to increase shareholders' value (26). Despite of being an important source of diversification, DeYoung & Roland (27) considered that non-interest income increases the volatility of profits for the banks. The low switching cost, the high operating and the financial leverage requirements for fee based activities make non-interest income sources more volatile than traditional interest based activities. Delpachitra & Lester (28) mentioned that over-diversification of revenues increases the risk of default rather than improving profits. In addition, the strategy of income diversification needs great are as extensive diversification of income sources may reduce the financial performance of banks (29). Being involved in non-interest based activities; income diversification may show new risks for which specialized managerial expertise are required and being not well-planned, these risks could affect the performance (29). The effect of non-interest income and revenue diversification on performance of Australian banks was the study of (28) . It has found that non-interest income and diversification of revenue negatively affects the profitability. Besides, despite of the much reliance on non-interest income, the profitability and risk of default were not improved. Turkmen & Yigit (30) showed the negative effects of sartorial and geographic diversification on performance measures of banks working in Turkey. Gurbuz et al.(26) observed that income diversification improves the risk-adjusted performance of banks. For that we developed our third hypothesis:
H3: There is no significant relationship between income diversification and the Palestinian commercial banks' profitability.

3.4. Operational Performance Efficiency and Profitability:

In 2006-2008 banks were characterized by overly loose lending standards and significant weaknesses in credit risk management by banks, especially in the case of consumer loans. Banks paid little attention toward borrower's ability of repaying their loans on the basis of their financial standing while sometimes banks depending too much on the verification of a positive credit history. Consequently, the overly optimistic credit risk assessment and too loose lending policy leads in an accumulation of credit risk on banks' balance sheets. A Debt to Income ratio (DTI) helps lenders to evaluate borrower's credit status and how much debt they can handle and how much of a credit risk they pose. A low debt to income ratio explains a suitable balance between debt and income. The ratio of debt to income expected to have a negative significant effect on the banks profitability, in which a lower ratio is the better for the bank's profitability. From a theoretical point of view, limits on DTI can kill two birds with one stone. They might enclosure the feedback between mortgage credit availability and house price appreciation and, by restraining household leverage they can help reduce the incidence and loss given default of residential mortgage loan delinquencies. Some cross-country evidences at the gross level are presented by (31). These evidences show that low DTI would decrease delinquencies in response to economic downturns and property price busts. For that we developed our fourth hypothesis:
H4: There is no significant relationship between operational performance efficiency and the Palestinian banks' profitability.

3.5. MAS and Banks Credit Risk Management Policies and Practices:

Distinctly that the linkage between both of management accounting and risk management is rapidly growing. Authors like Mikes (11) and Williamson (5) have reached and discussed this linkage. Williamson (5) conducted a research clarifying that management has know-how in determining, analyzing, and decision making and so on, be able to assist developing enterprise risk management tools and techniques. Moreover, well understanding of organizational economic implication also its behavior, management accounting should be ready for better explicate and communicate risk management information more effectively. Management accounting is supporting risk management and control whether by assessing, estimating the consequences of expected results from risk events, quantifying objectives, and analyzing risk management cost and benefits processes, or comparing the real performance of risks faced.
Zaleha Abdul Rasid et al. (32) studied the linkages between management accounting systems (MAS), enterprise risk management (ERM) and organizational performance. Finding of this study indicated that implementation of ERM requires the use of sophisticated management accounting system information. Both of ERM and MAS complement each other and they are integral to decision making, planning and control in an organization. In another study, (32) examined the link between management accounting and risk management through measures the extent to which management accounting practices assist in managing risk. His study implemented a survey directed to financial institutions listed in the Malaysian Central Banks web site. Finding indicated that budgetary control, budgeting, and strategic planning contribute significantly

in managing risk. Furthermore, the management accounting function was extremely involved in the organizations risk management. Mikes (11) conducted a research to discover the changing context and internal dynamic of a multiple control system in a financial services organization as a contribution to link between risk management and management accounting. The study showed how the firm-wide risk management system and accounting control complemented each other also competing between each other due to their relevance, importance, and attention from the top management. Consequently, accounting system was widely used in organization management decision making. For that we developed our fifth hypothesis:

H5: Palestinian banks profitability is positively related to the interaction between management accounting system and credit risk management policies.

Since exposure to credit risk consider the main source of problems in banks world-wide, banks and their supervisors should deal with this risk accurately. Bank of International Settlement (2013) set a sound practices to manage credit risk practices which are addressed through the following areas: (1) Establishing an appropriate credit risk environment. (2) Operating under a sound credit granting process. (3) Maintaining an appropriate credit administration, measurement and monitoring process. (4) Ensuring adequate controls over credit risk. (5) The role of supervisors. However specific credit risk management practices may vary among banks depending upon the nature and complexity of their credit activities, a comprehensive credit risk management program will address these five areas. For that we developed our sixth and seventh hypotheses:

H6: There is no significant relationship between credit risk management practices and the Palestinian banks' profitability.

H7: Palestinian banks profitability is positively related to the interaction between management accounting system and credit risk management practices.

4. Methodology

4.1. Study Design and Data Analysis Techniques:

This step is to determine the research design that would encourage and enable the researcher to provide answers for the research questions. There are two main objectives of this study as discussed before. The first part of objective is to study and realize the impact of credit risks policies on the profitability of Palestinian's commercial banks, while the second part of the study is to measure the management accounting system techniques and tools role on link between credit risk management policies and practices and banks performance.

According to this particular study the adopted design on this research are as follows:

In one hand, Secondary data study using regression analysis was implemented for this study to understand the impact on credit risks policies on profitability. SPSS statistical software was used in the analysis process for the following purposes: Multiple Liner Regression: was used since there were several independent variables. The T Distribution test which used for the proposed hypothesis was used to examine the relationship between the dependent and independent variables. The F-Test. was used to examine the appropriateness of the model as a whole. The Variance Inflation Factor was used to examine the overlap (relationship) between the independent variables. Durbin –Watson Test: Statistics is the ratio of sum of squares of successive differences of residuals to the sum of squares of errors.

In second hand, survey method was adopted for the risk management in banks, management accounting system practices, and credit risk management practices. After the stage of collecting survey questions from responses, and establishing coding procedure, the responses data was coded and transferred to the computer for analysis level through using SPSS Windows which is considered statistical software. we followed six steps in the process of analyzing the data: (1) Successive interval which allows classifying, sort rank, measure and compare the size difference between the value. Beside the calculation of the median, mode, and the percentage, the calculation of average and range can already be used on an interval technique. (2) Methods of data analysis included descriptive statistics (e.g. mean and S.D.), factor analysis, reliability analysis, and relevant tables. (3) Correlation analysis to study the relationship between variables. (4) Multiple hierarchical regressions to test and then analyse whether trust and satisfaction mediate the relationship among the independent variables and the dependent variable. (5) Multiple moderated regression (MMR) strategies to test and then analyse whether organizational support the relationship among the independent variables, mediators, and the dependent variable. (6) A moderating model, interaction effect approach and application were also used in this study (10, 33).

4.2. Study Methodology

This study conducted an empirical examine for quantitative effect of credit risk on the Palestinian banks' performance over the period of 7 years (2008-2014) whereas 11 commercial banks were chosen from the total existing banks operating in the country. The banks are: first bank of Palestine, Arab Bank, Cairo Amman Bank, Bank of Jordan, Quds Bank, The National Bank, Palestinian Investment Bank, Jordan Ahli Bank, Palestine Commercial Bank, Jordan Commercial Bank and Jordan Kuwait Bank. Data pooled into a panel data set and estimated using Panel Data Regression. Panel data technique features that it's more comprehensive and able to remove some of the drawbacks of auto-correlation and multicollinearity. Significant results of Hausman test and rejection of null hypothesis advocated the application of fixed effect regression analysis.

The study measures credit risk by using the ratio of Total Shareholders' Equity to Net Assets (EQ/TA) to measure Capital Adequacy, Loan Loss Provisions to Net Interest Income (LLP/I) is considered as proxy of credit monitoring, Total Revenue – Interest Income to Total Revenue (NIDR) as proxy of income diversification. The performance of banks is measured by through very common proxies of Return on Asset (ROA) and Return on Equity (ROE). Below are the models developed to analyse the relationship between credit risk and banks performance.

$$Y= \alpha +\beta_1 X1+ \beta_2X2+ \beta_3X3+ \beta_4X4 + \varepsilon$$

Where;

Y: Profitability Indicator which contain (Return on Asset (ROA) and Return in Equity (ROE))

X1: Capital Adequacy (EQTA-credit risk management indicator)

X2: Credit Monitoring (LLPI- credit risk management indicator)

X3: Income Diversification (NIDR- credit risk management indicator)

The study instrument is the survey questionnaire. This instrument was developed by the researcher and other question being adopted by Zaleha Abdul Rasid et al.(32) . Since the information required being focused on management accounting tools and credit risk management practices of the banks, this information must be collected from most qualified respondents were those in the risk management department on banks such as chief executive officers (CEOs), chief risk officers (CROs), chief financial controllers, general managers, risk managers, and bank employees at departments related to risk management in Palestinian commercial banks. Therefore, purposive sampling technique was adopted. In order to test the reliability of the instrument, the most commonly used test is Cronbach's Alpha. Reliability means the consistency and stability of a particular set of items used in measuring a variable. The results show high alpha values (> 0.7) which indicate that each scale of the questions measures a single concept and the items that make up the scale are internally consistent. The recorded score (0.900) indicate that there was a good internal consistency among the items.

There were four essential variables at this section, MAS, credit risk management policies, credit risk management practices and organizational performance. Table (1) shows the operational definitions of the four main variables.

Table 1: Operational Definition of Variables

Management Accounting System (MAS)	The extent to which financial institutions use MAS information in term of costing system, budgeting, information for decision-making and performance evaluation (PE).
Credit Risk Management Policies	Credit risk management policies measured through (EQTA, LLPI, NIDR and DTI).
Credit Risk Management Practices (CRMP)	CRMP measures the extent of CRMP implementation based on the Bank of International Settlement report.
Organizational Performance	The extent to which the organization has been successful in attaining its planned targets.

5. Results and Discussions

At the beginning we tested the first four hypotheses (H1, H2, H3 and H4). Firstly, we applied the ROA as the dependent variable, as shown on table (2) that explains the results obtained by the time period effect regression analysis for model (1):

$$ROA = \alpha + \beta_1(EQTA) + \beta_2(LLPI) + \beta_3(NIDR) + \beta_4(DTI) + \varepsilon$$ Model (1)

Results for EQTA affected ROA negatively. EQTA β coefficient was -0.707 which indicates that the effect of Equity Capital on ROA was week also means that one unit increases in EQTA decreases ROA by 70.7% unit while the rest of variables are held constant. The statistical significance of EQTA on ROA is 0.572 more than 0.05 which was a sign of insignificant relationship. This means that EQTA predicts effect on ROA with 42.8% probability. Then Loan Loss Provisions to Net Interest Income Ratio (LLPI) is negatively related to (ROA), the profitability measure. LLPI, it also had a negative effect on ROA with β coefficient of -3.419. The statistical significance of LLPT is 0.008 which is less than 0.05 which is a significant relationship. It implies that LLPI predicts effect on ROA with 99.2% probability.

While, Income Diversification Ratio (NIDR) was positively related to (ROA), the profitability measurement. The statistical significance of NIDR on ROA is 0.007 which is less than 0.05 which is significant relationship also this means that NIDR predicts effect on ROA with 99.3% probability. Then operational performance efficiency (DTI) is positively related to (ROA), the profitability measurement. The statistical significance of DTI on ROA is 0.272 which is more than 0.05 which is insignificant relationship also this means that DTI predicts effect on ROA with 72.8% probability.

R^2 represents the prediction level of variance in return in assets (ROA) by capital adequacy (EQTA), credit monitoring (LLPI), income diversification (NIDR) and (DTI) operational performance. Which is 0.209. This means that 20.9% of ROA can be predicted from the independent variables mentioned above. Durbin-Watson (DW) statistics test is based on the assumption that the errors in the regression model are generated by a first order autoregressive process. The Durbin-Watson statistic was 1.458; it means there was serial correlation between independent variable and ROA.

Table 2: Model (1) Dependent Variable ROA

Variable	Coefficients β	Std. Error	Significant-Statistic
Constant	1.855	0.523	0.001
EQTA	-0.707	1.247	0.572
LLPI	-3.419	1.248	0.008
NIDR	2.765	0.413	0.007
DTI	0.000	0.000	0.272
R^2	0.209	F-statistics	3.747
		Prob. (F-statistics)	0.005
Adjusted R^2	0.153	Durbin-Watson	1.458

For that we found the results of model (1) where we use the ROA as our dependent variable, as summarized on the following Table (3).

Table 3: Summarizing the Model (1) Results

Hypotheses	Research Hypotheses	Probability	Finding
H1	There is no significant relationship between capital adequacy and the Palestinian commercial banks' profitability.	0.572	Not significant
H2	There is no significant relationship between credit monitoring and the Palestinian commercial banks' profitability.	0.008	Significant
H3	There is no significant relationship between income diversification and the Palestinian commercial banks' profitability.	0.007	Significant
H4	There is no significant relationship between operational performance efficiency and the Palestinian commercial banks' profitability.	0.272	Not significant

Secondly, once we apply the ROE as the dependent variable, significant results for fixed effect regression analysis as shown on the regression results for the model (2).

$$ROE = \alpha + \beta_1(EQTA) + \beta_2(LLPI) + \beta_3(NIDR) + \beta_4(DTI) + \varepsilon$$ Model (2)

Results for EQTA affected ROE negatively. EQTA β coefficient was -44.927. The statistical significance of EQTA on ROE is 0.000 less than 0.05. This means that EQTA predicts effect on ROE with 100% probability. LLPI, it also had a negative effect on ROE with β coefficient of -19.382. The statistical significance of LLPT is 0.001 which is less than 0.05 it implies that LLPI predicts ROE with 99.9% probability. Whilst, NIDR affected ROE positively. The statistical significance of NIDR on ROE is 0.005 which is less than 0.05 this means that NIDR predicts effect on ROE with 99.5% probability. While, DTI affected ROE negatively. The statistical significance of DTI on ROE is 0.005 which is less than 0.05 this means that DTI predicts effect on ROE with 99.5% probability

Table 4: Model (2) Dependent Variable ROE

Variable	Coefficients β	Std. Error	Significant-Statistic
Constant	22.781	2.447	0.000
EQTA	-44.927	5.831	0.000
LLPI	-19.382	5.831	0.001
NIDR	5.581	1.931	0.005
DTI	-0.005	0.002	0.005
R^2	0.555	Durbin- Watson =0.914	F-statistics = 17.736
Adjusted R^2	0.524		Prob.(F- statistics) = 0.000

For that we found the results of model (2) where we use the ROE as our dependent variable, as summarized on the following Table (5).

Table 5: Summarizing the Model (21) Results

Hypotheses	Research Hypotheses	Probability	Finding
H1	There is no significant relationship between capital adequacy and the Palestinian commercial banks' profitability.	0.000	Significant
H2	There is no significant relationship between credit monitoring and the Palestinian commercial banks' profitability.	0.001	Significant

H3	There is no significant relationship between income diversification and the Palestinian commercial banks' profitability.	0.005	Significant
H4	There is no significant relationship between operational performance efficiency and the Palestinian commercial banks' profitability.	0.005	Significant

To test the Hypothesis Number 5 (H5), a further preliminary step before conducting multiple regression analysis is to construct a bivariate correlation matrix for all variables. The correlation between the independent, the moderator and the dependent variables are not significant or very low; therefore, moderator effects should not be influenced unduly by multicollinearity. Data analysis confirmed that none of the variables exceeded an acceptable threshold (10.00) and (2.545) for variance inflation factor (VIF) and Goodness-of-Fit Tests (ANOVA F). They indicate that there are no problems with multicollinearity that would violate assumptions for the general linear model (34). As Table 6 Insignificant correlations between Credit Risk Management Policies and management accounting system on organizational financial performance (OFP).

Table 6: Correlations between CRM Policies and MAS on OFP

	Costing System	**Budgeting**	**Info. for decision-making**	**PE**	**OFP**
EQTA	0.002	0.015	0.092	0.319	0.070
LLPI	0.276	0.329	0.353	0.235	0.135
NIDR	0.416	0.372	0.405	0.112	0.205
DTI	0.490	0.305	0.341	0.463	0.351
Note: ** Correlation is significant at 0.01 level (2-tailed).					

To examine the interaction between management accounting system and different variable on organizational financial performance, we apply the Multiple Linear Regression, consistent with finding of Bisbe & Otley (35), the interaction effect between MAS and CRMP was tested using moderated multiple regression. Table 7 shows that CRMP is not significant or very low correlated with financial organizational performance. The interaction tests whether the relationship between MAS and organizational performance change with the extent of CRMP implementation.

Table 7: Results of Moderated Regression (Dependent Variables: Profitability)

	Regression Coefficient	**Coefficient Value**	**SE**	**t-value**	**Probability**
EQTA × MAS	B	0.342	0.384	2.189	0.032
LLPI × MAS	β	0.352	0.381	2.276	0.026
NIDR × MAS	β	0.347	0.382	2.235	0.029
DTI × MAS	β	0.351	0.385	2.243	0.028

The results shows that interaction of costing system, budgeting, and information for decision making with capital adequacy on banks profitability is positive significant (β=.342, $p < 0.05$), interaction of costing system, budgeting, and information for decision making with credit monitoring on banks profitability is positive significant (β=.352, $p < 0.05$), interaction of costing system, budgeting, and information for decision making with income diversification on banks profitability is positive significant (β=.347, $p < 0.05$), interaction of costing system, budgeting, and information for decision making with operating performance on banks profitability is positive significant (β=.351, $p < 0.05$). Therefore, the result indicates that management accounting system with credit risk management policies has positively affected the organizational financial performance. The finding indicates the more important role of MAS in the relation between credit risk management policies and Organizational financial performance. As H5assumes that the interaction CRM policies and MAS is positively associated with organizational performance, and we found that this hypothesis is fully supported.

To test the Hypotheses Number 6 and 7 (H6 and H7), a further preliminary step before conducting multiple regression analysis is to construct a bivariate correlation matrix for all variables. Table (8) shows significant correlation between CRMP and organizational financial performance.

Table 8: Correlation of CRM and MAS

	Costing System	Budgeting	Info. For Decision-Making	PE	OFP
CRMP	0.033	0.034	0.453	0.458	0.001
Note: ** Correlation is significant at 0.01 level(2-tailed).					

Through investigating the characteristics of MAS information that match CRM implementation using the selection form of "fit" and exploring the performance effect of matching between MAS information characteristics and CRM implementation, implementing the interaction form of "fit" to contingency-based research, the appropriate "fit" between CRM, MAS information characteristic and organizational performance is represented by the relationship between the variables. The relationship between CRMP and MAS was analysed using the correlation matrix. Results indicates that CRMP was insignificant related to MAS that are information for decision- making and performance evaluation Table (8) The positive and significant relationship between CRMP and MAS just appeared in two dimensions which are costing system and budgeting. This insignificant relationship between CRMP and last two dimensions of MAS (information for decision –making and performance evaluation) suggest that an increase level of ERM implementation is necessary associated with an increase level of implementing MAS.

Following Bisbe & Otley (35), the interaction effect between MAS and CRMP was tested using moderated multiple regression. The interaction tests whether the relationship between MAS and organizational performance change with the extent of CRMP implementation.

Table 9: Results of Moderated Regression (Dependent Variables: Profitability)

	Coefficient Value	**SE**	**t-value**	**Probability**
Profitability × CRMP	0.367	0.159	3.416	0.001
Costing System × CRMP	-0.248	0.252	-2.371	0.020
Budgeting × CRMP	-0.089	0.270	-6.73	0.503
Info. for Decision-making× CRMP	0.260	0.364	1.758	0.083
Performance Evaluation × CRMP	0.074	0.201	.634	0.528

Table 9 shows the overall moderator multiple regressions results of the relationship between management accounting system and credit risk management practices on banks profitability. The results show that credit risk management practices affect banks profitability positively and significantly (β= .367, $p < 0.05$). Hence, H6which assume that there is positive significant relationship between credit risk management practices and the Palestinian banks' profitability. Is fully supported.

Also Table (9) shows the moderated regression for the effect of the interaction between MAS and CRMP on organizational financial performance. The results show that interaction of costing system with CRMP on banks profitability is negative significant (β= -.248, $p < 0.05$), interaction of budgeting with CRMP on banks profitability is negative insignificant (β= -.089, $p > 0.05$), interaction of information for decision making with CRMP on banks profitability is positive insignificant (β=.260, $p > 0.05$), interaction

of performance evaluation with CRMP on banks profitability is positive insignificant (β=.074, p > 0.05). Therefore, the result indicates that management accounting system with credit risk management practices has insignificant affected the organizational financial performance. Hence, H7 assumes that the interaction CRM practices and MAS is positively associated with organizational performance. This hypothesis is minimally supported.

6. Summary and Conclusion

Credit risk is one of the decisive risks the banking sector faces; it is considered the essential cause of serious banking problems resulting from poor credit risk management and policies of such risks. There are two main aims of this study firstly, to find out the impact of credit risk policies adopted by Palestinian commercial banks on their profitability. Secondly, to investigate the linkage role of management accounting system between credit risk management system and organizational performance in Palestinian commercial banks. The following conclusions are made from the panel data regression analysis of the effect of credit risk on Palestinian commercial banks performance measured by (ROA) and (ROE). In the ROA model, the results showed that EQTA was negatively insignificant; LLPI was negatively significant, NIDR positively significant and DTI positively insignificant. Interesting but quite surprising, the study results showed that in ROE model, all variables, namely EQTA, LLPI, NIDR and DTI were significant. The improvement in ROA and ROE as profitability indicators consider positive, but still weak comparable with the international industry standards.

Based on study findings, it is recommended that borrowers in Palestine strongly depend on banks as the major source of credit provider in the domestic market. Therefore, Palestinian banks need to increase their capital base and equity capital especially. That promotes incentives for banks to reduce their risk of their activities and enhance the stability and competitive status in the financial sector. Furthermore, the study surveyed 11 commercial banks in Palestine. To study the moderated role of management accounting system between credit risk management system and organizational performance. Obtained results from the regression models shows that, financial information provided by MAS is useful in measuring credit risk. Integration between costing system, Budgeting and information for decision making MAS × CRM Policies is positively associated with organizational performance. Furthermore, results from the regression models show that, a positive and significant relationship between CRM practices and organizational performance. Finally, result from testing the interaction between financial information provided by MAS and CRM practices indicates that management accounting system with credit risk management practices has insignificant affected the organizational financial performance. Therefore, the Palestinian banks managements need to be more accurate in setting up credit policies to be sure they would not negatively affect profitability. The central bank as the main regulating body should promote best practices of MAS and ERM among their banks for competitive advantages as well as compliance with regulation.

References

[1] Rampini AA, Viswanathan S, Vuillemey G. Risk management in financial institutions. 2016.

[2] Kithinji AM. Credit risk management and profitability of commercial banks in Kenya. 2010.

[3] Chen K, Pan C. An empirical study of credit risk efficiency of banking industry in Taiwan. Web Journal of Chinese Management Review. 2012;15(1):1-16.

[4] Ismail K, Isa CR. The role of management accounting systems in advanced manufacturing environment. Australian Journal of Basic and Applied Sciences. 2011;5(9):2196-209.

[5] Williamson D, editor A call for management accounting control research into risk management. MARG Conference, Aston Business School, Aston; 2004.

[6] Soin K, Collier P. Risk and risk management in management accounting and control. Elsevier; 2013.

[7] Haneef S, Riaz T, Ramzan M, Rana MA, Hafiz MI, Karim Y. Impact of risk management on non-performing loans and profitability of banking sector of Pakistan. International Journal of Business and Social Science. 2012;3(7).

[8] Petersson J, Wadman I. Non Performing Loans-the markets of Italy and Sweden. Företagsekonomiska institutionen; 2004.

[9] Chenhall RH. Management control systems design within its organizational context: findings from contingency-based research and directions for the future. Accounting, organizations and society. 2003;28(2-3):127-68.

[10] Baron RM, Kenny DA. The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of personality and social psychology. 1986;51(6):1173.

[11] Mikes A. Interactive control use as a political and institutional phenomenon–the case of divisional control in a financial services organization. 2006.

[12] Woods M. Linking risk management to strategic controls: a case study of Tesco plc. International Journal of Risk Assessment and Management. 2007;7(8):1074-88.

[13] Drazin R, Van de Ven AH. Alternative forms of fit in contingency theory. Administrative science quarterly. 1985:514-39.

[14] Fisher J. Contingency-based research on management control systems: categorization by level of complexity. Journal of accounting literature. 1995;14:24.

[15] Farrell H, Newman AL. Making global markets: Historical institutionalism in international political economy. Review of International Political Economy. 2010;17(4):609-38.

[16] Goddard J, Molyneux P, Wilson JO. The profitability of European banks: a cross-sectional and dynamic panel analysis. The Manchester School. 2004;72(3):363-81.

[17] Iannotta G, Nocera G, Sironi A. Ownership structure, risk and performance in the European banking industry. Journal of Banking & Finance. 2007;31(7):2127-49.

[18] Lee C-C, Hsieh M-F. The impact of bank capital on profitability and risk in Asian banking. Journal of international money and finance. 2013;32:251-81.

[19] Demirguc-Kunt A, Detragiache E, Merrouche O. Bank capital: Lessons from the financial crisis. Journal of Money, Credit and Banking. 2013;45(6):1147-64.

[20] Ozili PK. Bank profitability and capital regulation: Evidence from listed and non-listed banks in Africa. Journal of African Business. 2017;18(2):143-68.

[21] Seppälä J. The term structure of real interest rates: Theory and evidence from UK index-linked bonds. Journal of Monetary Economics. 2004;51(7):1509-49.

[22] Dugan JC. Remarks by John C. Dugan Comptroller of the Currency before the Institute of International Bankers. 2009.

[23] Gremi E. Internal factors affecting Albanian banking profitability. Academic Journal of Interdisciplinary Studies. 2013;2(9):19.

[24] Ramlall I. Bank-specific, industry-specific and macroeconomic determinants of profitability in Taiwanese banking system: under panel data estimation. International Research Journal of Finance and Economics. 2009;34(2):1450-2887.

[25] Huang L-W, Chen Y-K. Does bank performance benefit from non-traditional activities? A case of non-interest incomes in Taiwan Commercial Banks. Asian journal of management and humanity sciences. 2006;1(3):359-78.

[26] Gurbuz AO, Yanik S, Ayturk Y. Income diversification and bank performance: Evidence from Turkish banking sector. Journal of BRSA Banking and Financial markets. 2013;7(1):9-29.

[27] DeYoung R, Roland KP. Product mix and earnings volatility at commercial banks: Evidence from a degree of total leverage model. Journal of Financial Intermediation. 2001;10(1):54-84.

[28] Delpachitra S, Lester L. Non-Interest Income: Are Australian Banks Moving Away from their Traditional Businesses? Economic Papers: A journal of applied economics and policy. 2013;32(2):190-9.

[29] Mishra P, Sahoo D. Structure, conduct and performance of Indian Banking Sector. Review of Economic Perspectives. 2012;12(4):235-64.

[30] Turkmen SY, Yigit I. Diversification in Banking and its Effect on Banks' Performance: Evidence from Turkey. American international journal of contemporary research. 2012;2(12):111-9.

[31] Wong CY, Boon-Itt S, Wong CW. The contingency effects of environmental uncertainty on the relationship between supply chain integration and operational performance. Journal of Operations management. 2011;29(6):604-15.

[32] Zaleha Abdul Rasid S, Ruhana Isa C, Khairuzzaman Wan Ismail W. Management accounting systems, enterprise risk management and organizational performance in financial institutions. Asian Review of Accounting. 2014;22(2):128-44.

[33] Yousef DA. Organizational commitment: A mediator of the relationships of leadership behavior with job satisfaction and performance in a non-western country. Journal of Managerial Psychology. 2000;15(1):6-24.

[34] Kanya W. SPSS for Windows for Data Analysis. Chulalongkorn University, Bangkok. 2005.

[35] Bisbe J, Otley D. The effects of the interactive use of management control systems on product innovation. Accounting, organizations and society. 2004;29(8):709-37.