



MACROECONOMIC DETERMINANTS OF BANKS' CREDIT RISK: THE CASE OF BAHRAIN



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ABSTRACT

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The aim of this research is to point out the macroeconomic variables which significantly effect (determine) the banks' credit risk (CR) in Bahrain. To acquire this aim, exploratory analysis design has been deployed. The sample of this study includes the seven listed banks in Bahraini bourse. Quarterly data collected about the research variables over the period 2009-Q1-2019-Q3. The banks' CR in this research is measured by non-performing loans ratio. Regression model was implemented to test the impact of three selected macroeconomic variables on Bahraini banks' credit risk. The analyses found that inflation significantly effect the banks CR and this relationship is positive while the Real Gross Domestic Product growth and oil returns significantly and positively effect it. The implication of this research highlights the credit policy makers in Bahraini banks the macroeconomic variables which could be taken into consideration to sidestep any drop in the loans repayment, this will avoid falling into banking crisis. The main limitation faced the researcher in this study is the test impact of the three macroeconomic variables only on the banks CR. although that it's justifiable, it is suggested to include more macroeconomic factors such as international reserves and unemployment rate or related to the banks such as loan growth rate; capital adequacy; loan to deposit ratio and income diversification.

Contribution/ Originality: This research is widening the available empirical literature in the area of banks' CR. Further, it could aid the Bahraini banks' supervisors and monetary policy designers to take some regulations and actions reducing the Bahraini banks' CR. Findings could also be beneficial to all stakeholders concerning the CR management.

1. INTRODUCTION

1.1. Background

The kingdom of Bahrain is considered one of the most important regional financial hubs in the Gulf Cooperative Council (GCC) countries. The financial industry is one of main contributors in the Bahraini GDP. However, financial crisis on 2008 exposed the susceptibility of the banking system globally and in GCC as well. The crisis demonstrated an increase in the (CR) in majority of the GCC banks (Espinoza & Prasad, 2010).

Credit provision is the main source of banks' income, as banks offer various credit products for debtors (borrowers) to attract them to borrow and repay the borrowed amount alongside with interest which will generate the income for banks. Most of banks' operations are accompanied with a wide range of risks, such as credit risk;

operational risks, market risks and other related risks. These risks have a long-term impact on the banks' performance and profitability. CR is deliberated as one of the highest risky challenges face banks, as it is much more complicated than other risks.

CR is an indicator for the quality of banking sector portfolio in the country. That's why banks' management and monetary authorities always worry when the banks' credit portfolio comprises a high proportion of loans. The CR could be the spark launch of the banking crisis, as it may lead to have less liquidity in the banks which is one of the major reasons of bankruptcy troubles. The importance of having a well-developed credit risk management technique in banks increased after the 2008-2009 crisis (Nikolaidou & Vogiazas, 2017). This attracted researchers to work intensively in this area (Castro, 2013; Louzis, Vouldis, & Metaxas, 2012; Nikolaidou & Vogiazas, 2017). Therefore, the identification of factors influence the degree of CR is a vital matter to attain banks' stability and manage the banks' risks effectively (Ozili, 2019).

In the Kingdom of Bahrain, majority of loans (54%) are borrowed by the business sector and (44%) are borrowed by households sector and the government borrows 3.2% of total loans. The default period of any loan varies from a country to another according to the implemented regulations. the Central Bank of Bahrain (CBB) considers the fall of loan or interest value repayment for ninety days or more as a default in the loan payment. The outstanding loans in Bahrain increased by 9% between 2017 and 2018. As it has increased from BD 8.7 billion at the end of 2017 to BD 9.5 billion at the end of 2018. 39% of defaulted loans in the Kingdom of Bahrain are for a period over three years, while 28% are for a period between one and three years and 33% are for a period less than one year (Central Bank of Bahrain, 2019).

1.2. The Research Problem

Credit risk issue is one of major challenges face the banking systems in any country, as it negatively impacts the overall economic performance. Therefore, CR became one of major concerns for the decision makers even on the level of banks' supervisors or central banks. The high influence on the economic performance is strived form its' impact on the performance of the overall banking sector which influences the economic sustainability (Tsintsadze, Oniani, & Ghogheridze, 2018). Understanding the CR became more essential after the global financial crises (2008-2009) as the need to have effective credit risk techniques to avoid repetition of similar crises became a must.

With regard to the Kingdom of Bahrain, the CR level has been fluctuated last few years although the concrete effort taken to minimize the CR. This sheds the light on the urgent need to have an understanding to the CR in Bahraini banks and its' determinants. This understanding will enable the policy makers and banking supervisors to design policies and revise the procedures and regulations to have less CR and overcome the current challenge.

The literature found that many macroeconomic variables significantly influence the CR in many developed and developing countries. This directed the researcher to investigate the macroeconomic variables impact the CR in Bahraini banks to can point out the significant macroeconomic determinants. This could provide indicators for Bahraini monetary policy designers and banking supervisors. This research has three questions:

- What are the macroeconomic factors significantly influence credit risk in listed banks in Bahrain?
- What is the direction of the relationship between each selected macroeconomic variable and the banks' credit risk in listed banks in Bahrain?
- What are the recommendations to minimize the CR?

1.3. Aim and Objectives

This research aims mainly to point out the macroeconomic variables which effect the CR in Bahraini banks. To accomplish this intention, the research has the subsequent objectives:

- To identify the macroeconomic variables significantly effect the CR in listed banks in Bahrain.
- To measure the direction of the relationship between each selected macroeconomic variable and the banks'

credit risk.

- To suggest recommendations that could be employed by decision-makers and regulatory authorities in recognizing and bank's managing credit risk.

1.4. Significance of the Research

CR is one of most important issues impact the banking sector and the overall economic performance in any economy. This attracted immense number of researchers to analyse it from different perspectives, but still there is a scarcity of studies analysed it in the Kingdom of Bahrain. Accordingly, this research is an attempt to increase the empirical literature in this area by pointing out the macroeconomic variables significantly impact the CR of Bahrain's banks to be taken into consideration in while CR management process. Further, identification of macroeconomic variables insignificantly affect the CR will enable the policy makers to rational their effort and give less attention to these variables when design policies and procedures related to CR.

On another hand, the outcomes of this research may be beneficial to all stakeholders (credit regulators, providers, corporations, banks, and investors) concerning the significance and the impact of credit risk management and gaining knowledge about its' primary causes.

1.5. Organization of the Research

To achieve the objective, the research has been designed in five sections, this section (introduction) contains the study background, problem, objective, questions and significance. The review of related literature has been provided in the section two. Section three presents the research methodology while the section four demonstrates the findings and results analysis. Finally, the fifth demonstrates the discussion and conclusion including the implications and suggested future areas of research.

2. REVIEW OF LITERATURE

2.1. Credit Risk (CR) and its' Sources

The banking system is one of main components of the financial system and is considered one of most important financial mediators in economy, as it facilitates the flow of funds from borrowers to lenders. Accordingly, the two main tasks of the banks are i) to receive deposited funds from creditors and ii) to lend the funds to borrowers. This intermediation between savers and borrowers contributes in the economic growth of nations, as it facilitates the flow of funds to debtors which promote the investment and, consequently, contribute in the Gross Domestic Product (GDP) growth (Drake & Fabozzi, 2010).

Banks offers a wild range of products (loans) to borrowers which generates the initial source of banks' income. Therefore, banks can maximize profits via the increase of products (loans) offered to debtors. However, any loan is associated with risk. Managing the CR is one of the most critical tasks of banks, as it causes financial stability in the banking sector. Bank processes are fraught with several types of risks, such as investment risk; funding risk; CR and liquidity risk. Although banks face many risks, the CR and liquidity risk are considered the most critical risks face banks, as they are closely related to banks' activities. CR is the challenge which banks may face as a result of the fail of borrowers to fulfill their loan obligations towards the bank. In other words, CR reflects the debtor's failure of repayment as per the loan contract. Additionally, they might not be paying on the due date. Hence, the credit risk definition is close enough to Non-Performing Loans (NPL). This fail may lead to a loss for the bank (Thiel & Raaij, 2019) which may direct commercial banks to minimize the NPL ratio to be able to have good health of the bank portfolio and be able to achieve high profitability (Musau, Muathe, & Mwangi, 2018).

Hence, there is need of having effective credit risk management in the bank which includes policies and procedures enable to minimize credit risks and other related probable losses. The credit risk rises in periods of financial crisis (Nikolaidou & Vogiazas, 2017; Ozili, 2019). Therefore, risk management is very essential for the

bank as it has a significant impact on its' profitability. Banks manage their credit risks through strict implementation of risk and operating regulations.

The CR has different sources. First is banks themselves, such as poor risk management; less implemented control procedures; deficiency in follow-up measures; bank tolerance in credit assessment or inefficient credit practices. Second source can be from upper sources, such as ineffective laws; unfit credit policies or slack of central bank supervision. The third source of CR is related to borrowers, such as inappropriate disbursement of loans; insignificant control or evaluation of projects borrowers' deceitfulness (Addae-Korankye, 2014; Kithinji, 2010).

CR has a negative impact on the economic growth. It deteriorates the quality of bank's asset which may lead to falling into economic shocks. Banks' Non Performing Loans (NPLs) is one of determinants of the macroeconomic environment (Bernanke, Gertler, & Gilchrist, 1999; Kiyotaki & Moore, 1997). Therefore, CR is an important tool of the provision early signals of financial sector vulnerability (Agnello, Furceri, & Sousa, 2011). The significance of the CR impact on the macroeconomy differs from an economy to another (Tsintsadze et al., 2018).

The literature identified many determinants for CR. Some of them are macroeconomic determinants while other are Bank-specific determinants. The former variables will be discussed in details in the following two sections. The later refers to factors linked to banks polices, such as: Return on Equity (ROE) (Abid, Ouertani, & Zouari-Ghorbel, 2014; Shingjergji, 2013; Shkodra & Ismajli, 2017) Return on Assets (ROA) (Shkodra & Ismajli, 2017); Loan Growth Rate (Zheng, Bhowmik, & Sarker, 2019); Capital Adequacy Ratio (CAR) (Kjosevski, Petkovski, & Naumovska, 2019); Income Diversification (Templeton & Severiens, 1992; Winton, 1999); Liquidity Ratio (Manab, Theng, & Md-Rus, 2015); Bank Credit Growth (Shkodra & Ismajli, 2017; Vithessonthi, 2016) and Operating Expenses and Bank Size (Gulati, Goswami, & Kumar, 2019; Sufian & Noor, 2012).

2.2. Macroeconomic Variables Affect the CR

The literature provides an evidence of the impact of macroeconomic variables on banks' CR. These variables are Real Gross Domestic Products (GDP) growth, Inflation, and oil return (Beck, Jakubik, & Piloju, 2015; Klein, 2013; Louzis et al., 2012).

GDP Growth & CR: Beck et al. (2015) and Louzis et al. (2012) evidenced that Real Gross Domestic Product Growth Rate (RGDPG) negatively affect the banks' CR. The fluctuations in the business cycle affects the creditworthiness of debtors.

High RGDP growth indicates higher earnings, which been reflected into debtors' improvement in debt serving capability and, consequently, lower the credit risk for the creditors. On the contrary, negative RGDP growth leads a decline of the economic activities and, in turn, a fall in cash reserves which declines the loan repayment ability of the debtor. This will raise the credit risk for banks as the financial obligations might not be met by their debtors (Beck et al., 2015).

2.3. Inflation and CR

Inflation reflects the increase in the price level of goods and services. It can be calculated by the percentage change in the Consumer Price Index (CPI), Retail Price Index (RPI) or any other related index. The raise of price level implicitly means a decrease in the purchasing power of the currency in a given country.

Oil prices and CR: Oil returns depends on many factors, mainly international supply; international demand and political factors. The changes in one or more of these factors fluctuates the oil prices which, in turn, fluctuates the oil returns for the oil producing countries and consequently the financial performance of these countries. The rise of oil returns directly increase the government expenditure for these countries and vice versa. Hence, the relationship between oil returns and non-performing loans is negative (Hesse & Poghosyan, 2016; Saif-Alyousfi, Md-Rus, & Mohd, 2018).

Hesse and Poghosyan (2016) investigated the impact of oil price's shocks on their profitability in the oil-

exporting countries located in Middle East and North African (MENA). They found that although there is an insignificant direct effect of oil prices on the banks' profitability. The same study found that the impact on the investment banks is more than its' impact on Islamic and commercial banks. A similar finding found for the Qatar economy (one of the oil-rich countries) by Saif-Alyousfi et al. (2018) who investigated the influence of fluctuations in oil price on NPL of Qatari banks. They found that no direct effect of oil price fluctuations on NPLs even for the Islamic or commercial banks. However, there is an indirect impact channeled through macroeconomic variables and bank-specific variables.

2.4. Macroeconomic Determinants of Credit Risk

Immense number of studies investigated the macrocosmic determinants of CR even on the level of single country or cross countries levels. There is no full consensus on the macroeconomic variables significantly affect the banks' CR, however, the literature found some variables commonly have significant effect.

The macroeconomic determinants of banks' CR in Nepal was investigated by Poudel (2013). He argued that CR is negatively influenced by foreign exchange rate and inflation. While there is no significant impact of the GDP growth, interest rate or money supply on the CR. Similar results found for the Russia, as Stolbov (2017) tested the determinants of CR using ARDL and VECM models. The study found that foreign reserves has a significant effect on CR. Moreover, the results showed that the implemented macroeconomic policy has a partial impact on banks' CR in Russia (Stolbov, 2017).

Louzis et al. (2012) investigated the impact of business loans and consumer loans and mortgages were investigated in Greek banking sector. The study found that the loan dilemma in could be interpreted by four macroeconomic variables: public debt; RGDP growth rate; interest rates and unemployment rate. Further, indicators of bank efficiency and bank performance were explanatory factors for that dilemma (Louzis et al., 2012). The macroeconomic determinants for CR were tested in Turkey on both the short and long run. It was found that the bank's CR is mainly impacted by GDP growth rate and Istanbul Stock Exchange index in the long run (Yurdakul, 2014). Another empirical study employed the ARDL method aiming to detect determinants of bank's credit risk for five Sub-Saharan Africa (SSA) countries. Outcomes signify the negative relationship between money supply and Banks's CR (Nikolaidou & Vogiazas, 2017).

The macroeconomic determinants of banks' CR have been tested for five European countries [Greece; Ireland; Portugal; Spain and Italy (GIPSI)] by Castro (2013). The research concluded that the banks' CR is affected significantly by the macroeconomic variables in different directions. The GDP growth rate and the housing price have a negative influence on the CR while there is a positive effect between the unemployment rate, interest rate, credit growth increase and real exchange rate on the banks' CR (Castro, 2013). Another study investigated the determinants for banks' CR in France and Germany. The study deployed dynamic panel data method to analyze the non-performing loans' factors. It found that macroeconomic variables, except inflation rate, affect the NPL in the banks of the two investigated countries (Chaibi & Ftiti, 2015).

Another study investigated the same relationship on three South Asian countries (Pakistan, India, and Bangladesh) by Waqas, Fatima, Khan, and Arif (2017). The study categorised the determinants into two groups (macroeconomic variables and bank specific variables). It concluded that systematic risk is influenced by macroeconomic variables, while the unsystematic risk is influenced by the bank-specific variables (Waqas et al., 2017).

2.5. The Theoretical Framework

Figure 1 demonstrates the theoretical framework of the study, where the dependent variable (Banks' Credit Risk) represented by Non-performing loans (NPL) and it's influenced by the macroeconomic variables as

independent variables: Real Gross Domestic Product Growth (RGDPG), Inflation (INFLTIN), and finally Oil Return (OIL_RET).

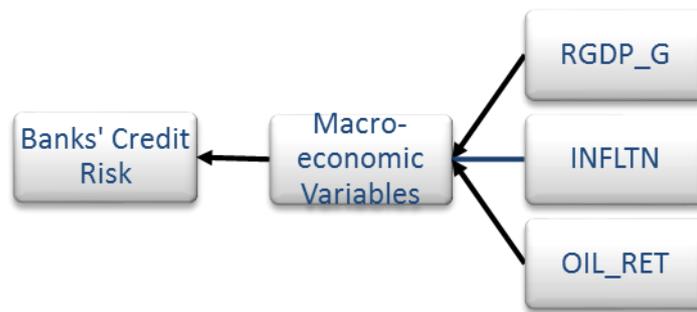


Figure-1. The theoretical framework.

2.6. Hypothesis of the Research

In view of the literature results, three hypotheses can be hypothesized for this research:

H1: The Bahraini Real Growth Domestic Product Growth (RGDPG) has a significant negative effect on the CR in Bahraini listed banks.

H2: The inflation rate in Bahrain has a significant positive effect on the CR in Bahraini listed banks.

H3: The Bahraini oil returns has a significant negative effect on the CR of Bahraini listed banks.

3. RESEARCH METHODOLOGY

3.1. Research Design and Sample

The research employed quantitative research method as it is the way to investigate the relationship between variables (Creswell, 2009). The data has been collected from seven Bahraini listed banks. The selection of Bahraini banks is justified that Bahrain is recognized as one of most important financial hubs in the middle east and it is a very much offshore centre with advanced regulatory framework and well-educated workforce. The sample contains all the listed banks in Bahrain Bourse. The study used secondary data acquired from Bloomberg (Bloomberg Terminal is an electronic trading system that provides data for the financial sector), Bahrain bourses, Annual Reports and publications of banks in Bahrain. The data were collected on quarterly basis starting from 2009-Q1 to 2019-Q3 (Almost ten years).

3.2. Research Methods

The quantitative method has been deployed to identify the macroeconomic variables which significantly determine the CR in listed banks in the kingdom of Bahrain. The NPL are considered as a measure of CR, the same was implemented by literature investigated the impact of CR in the banks. Real GDP growth rate (RGDPG), inflation rate (INFLTIN), and oil returns (OIL_RET) are used as explanatory variables. Such factors have been chosen as they are commonly available to commercial banks. Hence, this research investigated the macroeconomic determinants of CR in Bahrain's listed banks using a model similar to what has been used in the literature investigated the same relationship even in single country or cross countries.

3.3. Data Analysis

The data is analysed using many statistics; they are:

3.4. Descriptive Statistics

The descriptive statistics deployed to comprehensive trend for dependent and independent variables. Specifically, researchers used the following descriptive statistics: i) mean; ii) median; iii) standard deviation; iv) minimum and v) maximum values.

3.5. Correlation and Multicollinearity

The correlation test used to identify the extent of the correlation between each Macroeconomic variable (independent variables) and the CR (the dependent variable). Further, the correlation between the independent variables to test the multicollinearity problem which occurs when having high correlation between two or more independent variables which occurs if there is high correlation (above 0.8) between the independent variables as evidenced by Brooks (2008) or above 0.7 as referred by Kennedy (2008).

3.6. Regression

The regression analysis has been implemented to test the significance of the full model and each explanatory variable on the dependent variable. R-squared explains the variance percentage in the dependent variable explained by the used independent variables. The “F-statistic” measures the significance of the effect of the all explanatory variables collectively on the dependent variable. t-statistic results measure the significance of the effect of each explanatory variable on the dependent variable.

3.7. The Model

$$NPL_{it} = \alpha_0 + \beta_1 RGDPG_t + \alpha_2 INFLTIN_t + \alpha_3 OIL_RET_t + \varepsilon_{it} \quad (1)$$

Where:

- NPL is the bank's non-performing ratio (Which represents the banks' CR).
- β_0 is an intercept, $\beta_1, \beta_2 \dots \beta_N$ represent estimated coefficient for macroeconomic and bank-specific variables. $RGDPG_t$ represents the Real GDP growth at time(t), $INFLTIN_t$ refers to the Inflation rate at time(t), OIL_RET_t is the oil returns at time(t) and ε_{it} refers to the error.
- Non-performing loans ratio (NPL) represents the Banks' credit risk (CR) [The dependent variable in this study]. The NPL ratio can be calculated through divide the non-performing loans by total loans.

$$NPL = \frac{\text{Non - performing loans}}{\text{Total loans}}$$

The three independent variables are:

- i) Real GDP Growth Rate (RGDPG) is calculated as according to the following formula:

$$RGDPG = \left(\frac{RGDP_t - RGDP_{t-1}}{RGDP_{t-1}} \right) \times 100\%$$

- ii) Inflation rate (INFLTIN) is calculated according to the following formula:

$$INFLTIN = \left(\frac{CPI_t - CPI_{t-1}}{CPI_{t-1}} \right) \times 100\%$$

Where CPI refers to the Consumer Price Index (CPI)

- iii) Oil returns (OIL_RTN) which is presented by the oil prices.

3.8. Normality Test

It is a test used to verify the normal distribution of the used data. Figure 1 shows the results of the normality test for the used data.

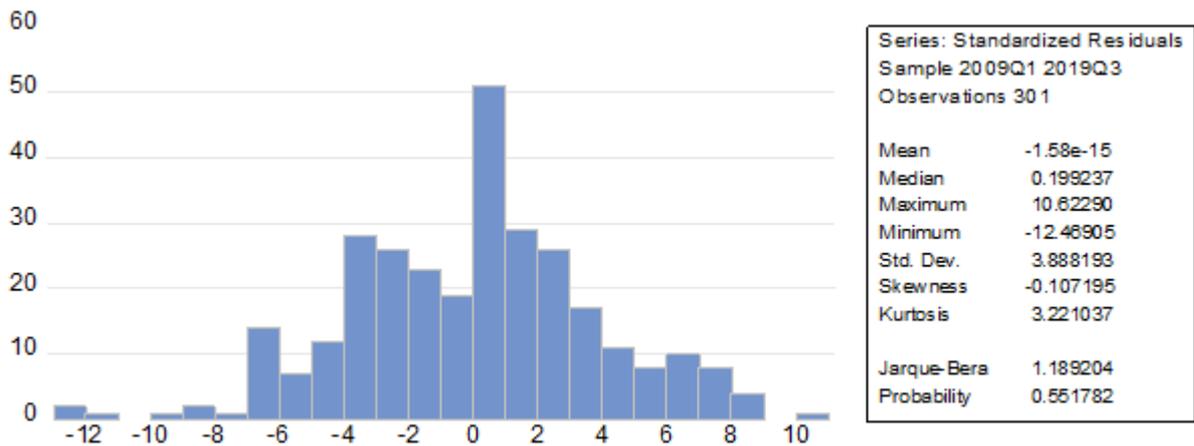


Figure-2. Normality test.

Figure 2 demonstrates the Skewness value is (-0.107195) which is close to zero and kurtosis = (3.221037) which is close to (3). The P-value of Jarque-Bera was 0.551782 (not significant). This result accepts the null hypothesis that residuals reflect a normal distribution, which come in line with Brooks (2008).

4. ANALYSIS

4.1. Descriptive Statistics

The descriptive statistics analyzed each macroeconomic variable affect the banks' credit risk in the listed banks in Bahrain Bourse. Table 1 shows the descriptive statistics for the NPL as dependent and the independent variables, which are: Real GDP growth rate (RGDPG), inflation rate (INFLTIN) and oil return (OIL_RET).

Table-1. Descriptive Statistics.

Variables	NPL	RGDPG	INFLTIN	OIL_RET
Mean	1.716	1.964	0.914	1.003
Median	1.141	2.201	2.912	1.028
Maximum	14.697	8.831	14.173	23.845
Minimum	0.056	-6.943	-14.82	-21.770
Std. Dev.	2.017	2.406	6.767	8.858
Skewness	4.156	-0.651	-0.751	0.335
Kurtosis	24.733	6.662	2.938	4.052
Sum	516.87	591.43	275.28	301.66
Obs.	301	301	301	301

Table 1 shows that the value of mean for the dependent variable (NPL) is (1.716). Its' value fluctuated between (0.05) and (14.7). Thus, we can state that (1.72%) of loans given by Bahraini listed banks during the sample term were defaulted. Over the same period, the standard deviation of NPL is (2.02), which signifies that the variation among the listed Bahraini banks in the capability of loans' recovering differs by 2.02% from the mean.

The mean value of the Bahraini Real GDP growth rate (RGDPG) is 1.97% during the sample period. It has fluctuated between 8.8% in 2010-Q4 and -6.9% in 2011-Q1. This reflects the continuation of Bahraini economic growth (in real terms). The mean value of the Bahraini inflation rate (INFLTIN) was 0.91 during the sample period. The maximum inflation was (14.2%), reported in 2011-Q1 while the minimum was (-14.8%) in 2009-Q2. The

mean value of oil returns (OIL_RET) was 1.0% over the sample period. It fluctuated between the minimum (-21.8%) in 2014-Q4 and the maximum which was 23.9% in 2016-Q1.

4.2. Correlation and Multicollinearity

Table 2 shows the correlation coefficient between variables used in the model.

Table-2. Correlation matrix.

	NPL	RGDPG	INFLTIN	OIL_RET
NPL	1			
RGDPG	-0.017	1		
INFLTIN	0.132	-0.1827	1	
OIL_RET	-0.003	-0.0523	-0.0851	1

As shown in Table 2 among the macroeconomic variables, Real growth rate and oil returns have weak negative correlation with the NPL, as the correlation is -0.017 and -.003 respectively, while the inflation has a weak positive relationship with NPL with a correlation coefficient = 0.132. The results of Table 2 show also that there is no high correlation between the independent variables used in the model. Hence, there is no multicollinearity in the implemented regression model.

4.3. Regression Analysis

The following regression model was implemented to identify the macroeconomic Bahraini variables that significantly affect the CR in Bahrain's listed banks. Table 3 shows the results of the regression test which has been done for the following model.

$$NPL_{it} = \alpha_0 + \beta_1 RGDPG_t + \alpha_2 INFLTIN_t + \alpha_3 OIL_RET_t + \varepsilon_{it}$$

Table-3. Results of the regression test.

Dependent Variable: NPL				
Variable	Coeff.	Std. Err.	t-Stat.	Prob.
C	1.66839	0.141075	11.82633	0.0000**
RGDPG	0.00538	0.044805	0.120301	0.9043
INFLTIN	0.03967	0.01597	2.486293	0.0135*
OIL_RET	0.00194	0.012001	0.162155	0.8713
R squared	0.200729	Mean dependent var		1.7173
Adjusted R squared	0.176008	S.D. dependent var		2.016341
S.E. of regression	1.830315	Akaike info criterion		4.07953
Sum squared resid	974.8643	Schwarz criterion		4.20269
Log likelihood	-603.9661	Hannan-Quinn criter.		4.128795
F-statistic	8.120158	Durbin-Watson stat		0.403567
Prob(F-statistic)	0.00000			

Note: ** Correlation coefficient significant at (1%), *correlation coefficient significant at (5%) significance level.
NPL= 1.66839 + 0.00538 RGDPG + 0.03967 INFLTIN + 0.00194 OIL_RET

Table 3 shows that the used independent macroeconomic variables are collectively significant in influence the CR for Bahraini listed banks. The value of "F-statistic" is 8.120158 and the significant level is 0.0000 at 1% significance level. R-squared is 0.200729 and the Adjusted R-squared is 0.176008, this means that 17.7% of the variation in the CR of the listed Bahraini banks is resulted from the used independent variables (RGDPG; INFLTIN; and OIL_RTIN), whereas the remaining percentage of the variation could be caused by other variables.

As presented in Table 3 Inflation (INFLTIN) has a positive and statistically significant at 1% significance level. This suggests that inflation positively impacts the Bahraini listed banks' CR. On another hand, an insignificant positive coefficient for both the Real GDP growth and oil returns on the as the coefficient for these variables are 0.00538 and 0.00194 respectively.

5. DISCUSSION AND CONCLUSION

The research aimed to provide evidence on the macroeconomic determinants for the credit risk in listed banks in the kingdom of Bahrain. To achieve this objective, data were collected for seven listed banks from secondary sources for 26 quarters (2009-Q1 to 2019-Q3). The study applied the regression model to test the three hypotheses of the study. The statistical analysis found a positive insignificant effect for the Real GDP growth on the CR. This result means a rejection to the first hypothesis of the study, which states that “There is a significant negative relationship between Bahraini Real GDP Growth and the CR of Bahraini listed banks”. This contradicts findings of the literature (Beck et al., 2015; Louzis et al., 2012) which evidenced a negative impact of the Real GDP growth on banks’ CR. The positive relationship found in this study may result from uncertainty events that affected the Bahraini economy of yet the consumers were not directly affected by the diversification effort of this the economy. The growth in RGDP may lead to an expansion in economic activities and, consequently, in the volume of cash held for the business and households’ sectors. This may motivate these sectors to demand for more loans which may be over their capacity and may increase the probability of having more NPL ratio for the banks.

With regard to inflation, this study evidenced that it has a significant positive effect on the Bahraini banks’ CR at 5% significant level, which means an acceptance for the second research hypothesis “The inflation rate in Bahrain has a significant positive effect on the CR in Bahraini listed banks”. As detailed earlier, the literature found the impact of inflation on CR may be positive or negative. The first group of literature found high inflation rate may reduce the real value of the outstanding debt which will, consequently, ease the debt repayment for the debtors and decrease the banks’ CR (Klein, 2013). Other literature evidenced that high inflation rate may depress the debtors’ capacity to fulfill their debt obligation via reduction of the real income value, which may increase the banks’ CR (Louzis et al., 2012). The findings of this study came in consistent with the first group of literature. The significant positive impact of inflation rate in Bahrain on Bahraini banks’ CR could be interpreted that the existence of a high inflation rate may impair the borrowers’ repayment capability via reducing their real income. This may match the structure of loans in Bahrain which reflects high proportion to households’ sector in comparison with corporate sector. Hence, high inflation rates will reduce the real income and weaken their capability to serve the debt. The statistical analysis found that oil returns have insignificant positive effect on Bahraini Banks’ CR. This leads to a rejection for the third research hypothesis which states “The Bahraini oil returns has a significant negative effect on the CR of Bahraini listed banks”. These findings are in the same line with the findings of Saif-Alyousfi et al. (2018) who found inflation has no direct effect on the CR on Qatari banks. On another hand, the results of this study are inconsistent with the results of Hesse and Poghosyan (2016) which evidenced that oil returns have a positive significant impact on the banks’ CR for major oil-exporting countries in MENA. Further, the impact on investment banks found greater than commercial and Islamic and banks.

The insignificant relationship between oil returns and Bahraini banks’ CR could be interpreted that there is no direct impact of fluctuations in oil prices on borrowers as the impact could be more for the governmental sector.

Investigate the impact of three macroeconomic variables only on the Bahraini banks’ credit risk is the main limitation of the study. Although dropping some of other variables is justifiable that they were almost fixed without any change (such as exchange rate) or to match with Brooks (2008) who argued that “embedding all explanatory variables in a single model is not possible”. Hence, Future studies are recommended to be conducted with the inclusion of more variables related to the banks such as loan growth rate; capital adequacy; loan to deposit ratio and income diversification. More macroeconomic variables can be also included in the model, such as international reserves and unemployment rate.

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