Innovations

Causes of Credit Default Risk & Its Impact on Financial performance of bank. A Case Study on Commercial Banks in Ethiopia

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Abstract
The aim of this study was to bring an insight about causes of credit default risk & its impact on the performance of commercial banks in Ethiopia. In order to do that, the researcher tried to investigate causes of credit default risk from bank specific, borrowers' specific and macroeconomics perspectives by using descriptive research design and examined the impact of credit default risk on performance of bank by employing random and fixed effect. Survey method was employed to get good picture on causes of credit default based on primary data collected from both government and private banks in Ethiopia. The study also used secondary data to investigate the impact of credit risk on the profitability of banks under the investigation-based data obtained from balance sheet & Income statement of each sample banks for eighteen consecutive years (2002-2019 and analyzed by employing panel data regression analysis using stata version 13. The finding obtained from primary data analysis shows bank specific, borrowers and macroeconomic specific factors contributed to loan repayment default during the study period. Results obtained from random and fixed effect panel regression have also tended to reveal adverse impact of credit default risk on the financial performance of banks under the investigation during the study period. The findings of the study suggest that it more advisable for banks to pay due attention to both internal and external factors that trigger loan repayment default to reduce credit default risk exposure and its adverse effect on the financial performance of banking industry.

Key words: 1. Credit Risk 2. Default risk 3.Credit Risk and Bank Performance

1. Introduction

In today's economy, financial institutions play an indispensable role in the overall economic development in any country.Through the process of transferring resources from net savers to net borrowers, financial institutions do not only ease credit flow in the economy but also enhance productivity by stimulating investment (Richard, 2011). Evidences suggest that economic development in any country would not possible without sound and well-functioning of financial institutions (Rajaraman and Visishtha,2002). Commercial banks are one of such essential financial institutions that plays decisive roles in the overall economic development of a country. In the modern economy, commercial banks act not only as the custodian of the wealth of the country but also as resources of the country by mobilizing capital required for the economic development of a country.As stated by Khan and Senhadji (2001), commercial banks are a symbol of financial

prosperity and economic stability in any country. As a key component of financial system, they allocate funds from savers to borrowers in an effective and efficient manner through specialized financial services which will make the overall economy & society more efficient &productive.
Despite crucial roles they play in the overall economic development and social transformation process, financial risks that are inherent with their nature of operation hinder commercial banks to successfully contribute to the economic development of a country. During the process of providing financial services, commercial banks assume various kinds of financial risks that adversely impede their intermediary role (Anthony,19967). Potential risks associated with nature of operation in commercial banks are liquidity risk, credit default risk, interest rate risk, market risk, foreign exchange risk and political risks (Campbell, 2007). Evidences suggest that the effect of credit default risk on the overall financial activities of banking industry is very severe when compared to other types of risks as it directly affects the core activity of commercial banks, which can in turn determine their survival in the financial sector. According to Bhattacharya and Roy (2008), among the various risk in bank, credit risk is the primary cause of bank failure. In a similar way, Gup et al. (2009) state that credit risk is the main cause of bank failures, and the most visible risk facing banks' manager. It has been widely argued that major risk of the banking business lies in the credit function, as there is high possibility of default. This can be supported by the idea of Zou & Li (2014), who argue that credit risk is one of significant risks of banks face due to their nature of activities. In a similar way, Kiyotaki and Moore (2008) argue that credit is one of the greatest sources of risk to a bank’s safety and soundness.

Evidences on the area suggest that credit risk has commonly been identified as the greatest risk which adversely affects financial performance of banking industry.According to Ricarda (2012), different from other industries, the success of banking industry depends on timely repayment of borrowed fund. According to evidences obtained from literatures on the area, credit default risk can directly lead to credit failure of bank, which will in turn reduce the efficient flow of funds to economic activities, among banks and other financial institutions. This situation would adversely affect general flow of credit in the economy & ultimately hurt efficiency and productivity of economic activities & other bank dependents in general (Chijoriga, 1997) &(Martin,1998**)**.By considering these adverse effects of credit default risk on economic activities, it is necessary to properly manage and monitor credit default risk in banking industry. In order to manage credit default risk in the banking industry, what triggers credit defaultrisk in the industry must be investigated and identified so that it could be controlled if occurred or it helps to control before it happens by taking appropriate measures.
Investigating and identifying causes of default risk therefore is very important to credit stability and healthy of banking industry and well-functioning of economic activities in general. With the deteriorating health of banking industry since the 2008 world financial crisis, credit default risk has got much attention from researchers on the area. Evidences suggest that extensive investigations have been conducted by focusing on different aspects of credit default risk in banking industry throughout the world. However, the subject has not been well studied in banking industry of Ethiopia. Based on accessible studies conducted on commercial banks of Ethiopia, the researcher can conclude that previous researchers have mainly emphasized on investigating determinants of Nonperforming loan, credit risk management in commercial banks & the impact of credit risk on the performance of bank. For instance, the study carried out by Negera (2012) on determinant of nonperforming loan in commercial banks of Ethiopia reveals that poor credit assessment, poor loan monitoring, underdeveloped credit culture, lenient credit terms and conditions, aggressive lending, compromised integrity, weak institutional capacity, unfair competition among banks, willful default by borrowers and their knowledge limitation, fund diversion for unintended purpose, under financing were identified as determinants of

Nonperforming loan in commercial banks of Ethiopia. In a similar way, the finding of Girma (2011) on credit risk management & its impact on performance of commercial banks in Ethiopia through cross sectional survey method also indicates that banks with good credit risk management policies have lower loan default rate and relatively higher return on asset.

As it can be evidenced from the aforementioned studies on the area, researchers on the area more in general have tended to focus only on determinants of Nonperforming loan, credit risk management & impact of credit default risk on the performance of banks and causes of credit default risk the default have not been emphasized by previous researchers in the rapidly growing banking industry. In addition, balance sheet of each commercial bank carries significant amount nonperforming loan ratio & factors that are contributing to high ratio of nonperforming loan must be studied & identified. The researcher further believes that banking industry in Ethiopia is rapidly expanding & getting more involvement with huge financial transactions, other financial sectors, economic activities, & many other bank dependents in general through advancement of enormous amount of loans each year, which indices the researcher to believe that probability of facing credit risk exposure would be high. All these claims motivated the researcher to conduct study on causes of credit risk. However, the researcher believes that investigating only causes of credit default risk is not enough to bring the issue of credit risk in banks to management attention and other stake holders. The quantitative impact of credit default risk on banks' ability to generate cash from its asset must be indicated, which would encourage bank management & controlling bodies to give much emphasis to credit default risk management in bank. This intention encouraged the researcher to study the impact of credit default risk on performance of banks. This study is therefore aimed to contribute to existing literature gap on the area by investigating causes of credit default risk & its impact on the financial performance of commercial banks in Ethiopia.

2. Literature review

Credit default (CD) is not a new concept. The chance that owed money may not be repaid has always been a daily fact of economic life. All commercial banks face a dilemma when lending money. On one hand, there is a wish to maximize profit by granting loan to almost every borrower that generates substantial amount of interest revenue. On other hand, each granted loans raise default risk when debtors are delinquent their debt obligation (muzicek, 2010).

Bank advances loans in the absence of precise knowledge regarding to the outcome of borrowers' repayment, which suggest that uncertainty relates to loan repayment emerges at a time of advancing loan. This nature of lending with both adverse selection and moral hazard will expose bank to credit default risk. The issue of credit default risk is thus a continuous problem in the day-to-day activities of commercial banks. Evidences suggest that credit default risk is one of the critical risks that commercial banks face and inability to manage it significantly influences financial performance & stability of banking industry and financial sector.

Credit default risk in banking industry has been defined from different perspectives by various researchers on the area. According to Ricardas (2012), credit default risk occurs when debtors are not able to meet their financial obligations as per loan agreement. According to credit management guidelines of BCBS (2005), credit default risk is considered to have occurred with regard to a particular debtor when bank ensures that the debtor is unlikely to pay its credit obligations in full without recourse by the bank to actions & the debtor is past due more than 90 days on any material credit obligation to the bank. In a similar way, Colquitt (2007) states that credit default risk in commercial bank occurs when lender is exposed to loss from borrowers & counterparties fail to honour their debt obligation as they have agreed or contracted. According to literatures on the area, credit default occurs when borrower a borrower is unwilling or unable to fulfill the obligations. According to evidences on obtained from literatures on the area,credit risk is the probable risk of loss resulting from a borrower's failure to meet stated contractual

agreement. As stated by Campbell (2007), credit default risk occurs due to debtor's non-payment of loan or other line of credit either the principal or interest or both.In general, credit default risk occurs when a debtor fails to pay both principal and interest within stated period of time. understanding why borrowers fail to obey contractual agreement is very important to credit stability of banking industry as credit default risk is very critical to financial wellbeing of bank. The following sections discuss causes of credit default risk in banking industry.

Causes of Credit Default Risk in commercial banks

The issue of credit default has been revisited several times from various angles both in theoretical and empirical results of banking literatures. According to evidences obtained from literatures on the area, banking literatures more in general tend to classify causes of credit default into bank specific factors & macroeconomic factors (Mohamed, 2007 |& (Negera, 2012) According to evidences obtained from accessible literatures on the area, great deal of literatures on the area has tended to classify causes of credit default risk into bank specific causes and macroeconomic causes. Evidences on the area suggest that extensive studies have been conducted on bank specific and macroeconomic causes of credit default risk. In line with previous studies on the area, this paper tried to investigate causes of credit default risk from bank specific, borrowers and macroeconomics perspectives.

Impact of Credit default risk on Profitability of banking Industry

There is substantial amount of empirical works on the impact of credit risk on the profitability of banking industry. Evidences obtained from accessible literatures on the area show that considerable number of studies has been conducted by various researchers in different countries. In depth review of literatures on the area suggest that there has been substantial amount of empirical works in banking literaturesregarding to theimpact of credit risk on the operating performance of commercial banks. According to empirical results of several studies, credit risk adversely affectsprofitability of banking industry. For instance,Sun & chang (2018) conducted investigation to examine the relationship between credit risk and profitability of US commercial banks based 83 sample commercial banks for the period from December 2010 to December 2017. The study used capital adequacy ratio and non-performing Loan ratio to measure credit risk and return on equity and return on assets to measure profitability of commercial banks. Finding obtained from OLS regressions analysis revealed that 1% increase in NPL decreases ROA by 0.0881% and decreases ROE by 0.141%. This can be substantiated by the idea ofkolapo (2012), who argues negative impact of credit risk on the financial performance of banks as large portion of banks' revenue accrues from loans portfolio.

According to evidences obtained from accessible literatures on the area, considerable amount of studies has reported adverse effect of credit default risk on the performance of bank. For instance, Felix and Claudine (2008) conducted study to investigate the relationship between bank performance and credit risk management by using ROA & ROE, as dependent variables and found that the ratio of non-performing loan to total loan of financial institutions lead to decline in profitability.This can be supported by the finding of Poudel (2012), who conducted investigation on the impact of credit risk management on financial performance of commercial banks in Nepal by using default rate, cost per loan assets and capital adequacy ratio as credit default risk parameter by using financial report of 31 banks for eleven years (2001-2011). By comparing profitability ratio to default rate, cost of per loan assets and capital adequacy ratio through descriptive, correlation and regression data analysis, the author found that all credit default risk parameters have an inverse impact on banks' financial performance. According to finding of the study, default rate is the most predictor of financial performance of bank.

Review results obtained from accessible literatures on the area suggest that substantial amount of previous studies on the area has reported negative relationship between credit default risk and bank performance. For instance,Musyoki and Kadubo (2012) conducted investigation on the impact of credit risk management on the financial performance of banks by using 10 banks the period of 7 years (2000-2006). The study used default rate, bad debts cost and cost per loan asset to measure credit risk management and return on asset (ROA) to measure profitability. The study found that mentioned parameters have statistically significant and negative impact on financial performance of banks. In a similar way, Noman et al (2015) conducted study ton investigate the impact of credit risk on the profitability banks based on data of eighteen private commercial banks in Bangladesh from 2003 to 2013. The study used NPLGL, LLRGL, LLRNPL and CAR as indicators of credit risk and ROAA and ROAE and NIM as profitability indicators. Findings obtained Using OLS random effect model, GLS and system GMM revealed that negative and significant effect of NPLGL, LLRGL on all profitability indicators.

3. Methodology

Source of Data

The study used both primary & secondary sources of data. Primary data was used to obtain information on banks specific, borrowers' specific & macroeconomic causes of credit default risk.It contains responses obtained from credit officers, internal auditors, accountants, managers of each commercial bank under the investigation through open & closed and questionnairesinterview with managers & credit officers. The study also used secondary source of data to examine the impact of credit default risk on the performance of bank based on data obtained from the balance sheet & Income statement of each sample banks for eighteen consecutive years (2002-2019). The study also used other supporting secondary sources, such as previous research findings, books, magazines, and newspapers, regulatory guidelines issued by the national bank of Ethiopia & other international regulatory bodies and institutions. The study further used other secondary data like reports & publications prepared by academic & professional organizations on area, that are assumed to be supportive.

Specification of Empirical Model

To specify empirical model for the study, extensive review of accessible literatures has been conducted to identity dependent and independent variables widely used by previous empirical studies on the area. Evidences obtained from accessible literatures on the area suggest that return on asset and return on equity have been widely used by a measure of bank performance by considerable number of previous studies on the area. Review results obtained from previous studies on the area also suggest various variables have been used to measure credit risk in banking industry. According to previous studies on the area, non-performing loan ratio, loan loss to total loan and advance ratio, loan loss provision to asset ratio, total loan and advances ratio& capital adequacy ratio have been used to measure bank credit risk by previous studies on the area. However, non-performing loan ratio has been mostly used by previous studies on the area. Based on aforementioned dependent and independent variables, various estimation techniques have been employed by previous researchers on the area to investigateempirical impact of credit default risk on the performance of commercial banks. Based on empirical models widely used by previous researchers on the area, the following panel regression models are formulated as estimation technique to investigate the impact of credit default risk on the performance of commercial banks under the investigation. Even though non-performing loan ratioinitially included in the model as a measure of credit default risk, it was excluded from the model as there searcher unableto access data on non-performing loan ratio both from national bank of Ethiopia &

balance sheet and income statement of sample banks under the investigation on the during the study periods.

$$ROA\ it = \alpha_0 + \beta_1\ LLPR\ it + \beta_2 LLPAR\ it + \beta_3\ EAR\ it + + \beta_4 LDR\ it + \beta_5 LAR it\mu it$$

$$ROE\ i\ t = \alpha_0 + \beta_1 NPLR\ it + \beta_2 LLPR\ it + \beta_3\ CAR\ it + + \beta_4 LQR\ it + \beta_5\ LAR it\mu it$$

$$NRMR\ i\ t = \alpha_0 + \beta_1 NPLR\ it + \beta_2 LLPR\ it + \beta_3\ CAR\ it + + \beta_4 LQR\ it + \beta_5 LAR\ it\mu it$$

ROA i t represents return of asset of bank i at t period.

ROE i t represents return on equity of bank i at t period

NRMR i t represents net interest margin ratio of bank i at t period.

LLPAR i t represents the ratio of loan loss provision to asset ratio of bank i at t period.

LLPR i t represents Loan loss provision to total loan ratio of bank i at t period.

EAR i t represents the ratio of total equity to asset of bank i at t period.

LDR, it represents ratio of total loans to total deposits of bank i at t period.

LAR, it represents the ratio of total loans to Total assets of bank i at t period.

μit represents error terms

4. Results& Discussion.

The last part of paper discusses findings obtained on bank specific causes of credit default risk and impact of credit default risk on the performance of bank. It first discusses findings obtained from primary sources of data on bank causes of credit default risk. It ends up upon discussing empirical findings obtained from secondary source of data on the impact of credit default risk on the performance of bank.

Findings on bank specific causes of credit default risk

Findings obtained from credit officers, internal auditors, accountants & managers on causes of credit risk through closed ended are presented in the following table.

Table1. Findings on cause of credit default risk

I. Responses on bank specific Causes of Credit Default Risk

No		**Responses**				
		Strongly disagree	**disagree**	**neutral**	**agree**	**Strongly agree**
1	Lending Policy of Bank	1(3.5%)	4(14.3%)	4(14.3%)	16(57.1%)	3(10.7%)
2	lenient credit policy	5(17.9%)	2(7.1%)	3(10.7%)	3(10.7%)	15(53.6%)
3	Rapid Loan Growth	-	3(10.7%)	3(10.7%)	17(60.7%)	5(17.9%)
4	Limited relationship-based lending	2(7.1%)	2(7.1%)	4 (14.3%	18(64.3%)	2(7.1%)
5	Poor credit Assessment & under Writing Process	-	3(10.7%)	5(17.9%)	17(60.7%)	3(10.7%)
6	weak internal credit assessment	-	-	5(17.9%)	19(67.9%)	4(14.3%)
7	Weak Internal Credit Scoring System	1(3.6%)	7(25.0%)	16(57.1%)	16(57.1%)	4(14.3%)
8	Lack of Credit Follows Up	-	1(3.6%)	2(7.1%)	19(67.9%)	8(21.4 %)
9	Lack of Effective Credit Risk Management Information System		3(10.7%)	2(7.1%)	18(64.3%)	5(17.9%)
10	Absence of Loan Diversification	1(3.6%)	1(3.6%)	3(10.7%)	4(46.4%)	10(35.7%)
12	Inadequate Oversight by Board of Director	1(3.6%)	3(10.7%)	4(14.3%)	16(57.1%)	4(14.3%)
13	Inadequate Management Oversight	3(10.7%)	3(10.7%)	2(7.1%)	17(60.7%)	3(10.7%)

11	Government Influence	1(3.57%)	13(46.43%)	7(25%)	7(25%)	-
	II. Responses on Macroeconomic Causes of Credit Default Risk					
15	Inflation	2(7.14%)	4(14.29%)	2(7.9%)	15(53.57%)	5(17.86%)
16	Change in Foreign Exchange Rate	1(3.6%)	3(10.7%)	4(14.29%)	18(64.29%)	2(7.14%)
17	Low GDP Growth	2(7.14%)	2(7.14%)	2(7.14%)	20(71.43%)	2(7.14%)
18	High Interest Rate	3(10.7%)	5(17.9%)	6(21.4%)	12(42.9%)	2(7.1%)
III. Responses of Borrowers Specific Causes of Credit Default Risk						
19	Poor Business Performance	3(10.7%)	2(7.14%)	2(7.14%)	11(39.3%)	10(35.7%)
20	Business Failure	3(10.7%)	8(28.6%)	3(10.7%)	12(42.9%)	2(7.14%)
21	Diversion of fund	-	2(7.14%)	5(17.9%)	16(57.1%)	5(17.9%)
22	Under Financing	5(17.9%)	13(46.4%)	4(14.3%)	6(21.4%)	-
23	Poor Borrowers Credit History	3(10.7%)	4(14.3%)	4(14.3%)	14(50%)	2(7.1%)
24	Fund Management Problem	3(10.7%)	6(21.4%)	2(7.1%)	14(50%)	3(10.7%)
25	Lack of Business Management Experience	-	1(3.6%)	3(10.7%)	17(60.7%)	7(25%)
26	Short Term Business Operation	-	8(28.6%)	7(25%)	11(39.3%)	2(7.1%)
27	Absence of Asset Ownership	2(7.1%)	(42.9%)	5(17.9%)	8(28.6%)	1(3.6%)
28	Personal Name on loan Contract	9(32.1%)	7(25%)	9(32.1%)	3(10.7%)	-
29	Marketing Problem	3(3.6%)	7(25%)	3(10.7%)	12(50%)	3(10.7%)
30	Ignorance of Credit Terms/Strategic Default	-	4(14.3%)	3(10.7%)	15(60.7%)	6(21.4%)

Lending Policy of Bank

Review results discussed in review literature indicates that lending policy followed by a bank affects credit decision & exposes bank to default risk. As discussed in the literature review part, banks often criticized for drastic variation in their lending policy. Evidences discussed in the literature review part suggest that inappropriate credit policy, particularly by lowering credit standard either to increase market share or to achieve other objectives, increases the probability of loan repayment default. Bank may follow lenient or restrictive lending policy & these two types of lending policy have its own default risks associated with it. The review results of literature review also indicate that lending policy of bank should be in accordance with the overall strategy of bank and bank is expected to consider existing credit policy, industry norms, general economic condition in the country and the prevailing economic climate during designing credit policy.

Finding obtained from credit officers, internal auditors, accountants & managers on lending policy of bank & credit default risk is presented in appendix table 1 shows that out of 28 sample respondents, 3(10.7%) strongly supported that lending policy following by bank leads to loan repayment default. In a similar way, about 16(57.1%) respondents also supported the influence of lending policy followed by a bank on loan default at the maturity. On other hand, about 3.6% sample respondents were strongly disagreed that lending policy of bank does not lead to credit default risk. In addition, 14.3% were also disagreed on lending policy followed by the bank & credit default risk.As it can be evidenced from responses of sample respondents presented in table 1 regarding to the effect of credit policy on credit default risk exposure, majority of sample respondents supported that lending policy followed by a bank affects credit quality of bank & exposes bank to default risk. Empirically, this finding supports empirical results of Sergio (1996) &Fons (1991), who found that an increase in the riskiness of loan asset is rooted in lending policy of bank. Responses of sample respondents presented in the above table also show that lenient

credit policy has an effect on loan credit quality of bank. As it can be evidenced responses of sample respondents presented in table1, majority of sample respondents (53.6%) agreed that lenient credit policy increases loan default at the maturity. This can be substantiated by the finding of McGoven(1993),who found that banks suffer loan losses through relaxed lending standards & unguaranteed credit

Rapid Loan Growth

According to arguments & empirical results discussed in the literature review part, competitive nature of banking industry forces banks to compete for market share by increasing credit extension to borrowers, whose credit quality are un known due to asymmetric information. Review results discussed in the literature review part also suggest that rapid loan growth strategy followed by a bank for different reasons increases credit default risk exposure of bank. As discussed in the literature review part, bank may follow rapid loan growth through market share strategy by lowering its normal credit standards. This would lead to adverse selection of risky borrower and lowers credit quality of bank. As evidenced in the literature review part, rapid loan growth requires bank to deviate from their normal lending policy, particularly by lowering their normal lending standards and sacrificing objectivity in credit evaluation standardsand increase loan growth indiscriminately at the expense of future loan quality.

According to results obtained from credit officers and managers of banks under the investigation regarding to the influence of rapid loan growth and credit default risk exposure, rapid loan growth strategy of bank affects credit decision & increases loan repayment default exposure of banks. As shown in the appendix table 1, about 17.9% respondents strongly agreed that rapid loan growth affect credit quality of bank & increase the probability of loan default. In addition, 60.7% of respondents were also agreed that rapid loan growth exposes bank loan repayment default.On other hand, about 10.7% of sample respondents were strongly disagree on the impact of rapid loan growth on credit default risk & the reaming 10.7% of sample respondents were neutral. Result presented in the appendix table1 more in general suggest that about 78.6% sample respondent agreed on impact rapid loan growth on the credit default risk. This result supports the argument of (Keeton, 1999). According to the author, credit returns maximization strategy of bank through aggressive credit policy affect loan repayment at the maturity. This finding is also in line with empirical results of Sinkey and Greenwalt (1991), who found a positive relationship between loan loss & excessive lending. Empirical finding of Capri and Klingebiel(1996) also supports this finding. According to their finding, rapid loan growth that takes place during economic boom time increases credit risk crisis of bank.

Limited Relationship between bank &borrowers

Like any other businesses, banks are expected to maintain long-term relationship with their credit customers. Evidences on the area suggest that importance of relationship-based lending should not be overlooked as it provides inside information about borrowers and helps banks to get more understanding of borrower's business and financial situation by providing private information.Results presented in the appendix Table-1 shows findings obtained from sample respondents on the extent to which limited relationship between bank & borrower leads to loan repayment default. As shown in the appendix table-1, about 64.3% of respondents were agreed that limited relationship between bank & borrowers increases loan default. In addition, about 7.1% of sample respondents were also strongly agreed that limited relationship increases loan default at the maturity.

Responses of sample presented in the appendix table-1 also shows that only few respondents were disagreed on the extent to which limited relationship between bank & borrower leads to loan repayment default.The result is in line with the finding of Chikoko, Mutambanadzo,

&Vhimisai (2012), who found that nonperforming in bank is due information asymmetry between bank & borrowers that occurs limited relationship between bank and borrowers. It is also inline with the argument off Kashyap et al. (2002), who argue that lending requires obtaining high-cost information concerning non-transparent borrowers by maintaining strong relationship between customers and giving out loans on the basis of the information they have.

Poor Assessment Credit & Under Writing Process

Evidences obtained from accessible literatures on the area suggest that adequate credit underwriting process enhances credit decision of bank & reduces default risk associated with lending. According to evidences obtained from literatures on the area,it is necessary to establish a proper credit risk assessment environment & sound credit granting processes (Basel, 1999). Finding obtained from sample respondents on the extent to which poor credit assessment and underwriting process increases credit default risk exposure of bank is presented in the appendix table1. Based on majority responses of sample respondents, it is possible to conclude to finding obtained from sample respondents also supports the arguments reflected in the literature review.
As shown in the appendix table 1, majority of sample respondents were agreed that poor credit underwriting does lead to credit default risk. As it can be evidenced from results shown in table 1, about 60.7% of sample respondents were agreed on the impact of poor credit underwriting process on probability of loan default at the maturity.
As it shown in table1, about 10.7% of sample respondents were also strongly agreed that poor credit underwriting process increases default associated with lending. On other hand, 10.7% of respondents strongly disagreed that poor credit underwriting has no effect on loan repayment default & 17.9% respondents were remained neutral. As it can be evidenced from appendix table 1, majority of credit officers, internal auditors, accountants & managers supported that poor credit assessment and underwriting process exposes banks to loan repayment default. This finding can be substantiated by the idea of Sheila (2011), who argues that proper and adequate appraisal is key to control and minimize default risk. It can also be substantiated by the idea of Abebaw (2015), who assertsthat proper loan appraisal is the primary method in reducing credit risk.

Weak Internal Credit Scoring System

Evidences suggest that effective credit risk management requires adequate internal credit assessment & credit scoring system. In credit default risk management, a usual goal should be to price loans according to their risk exposure (Saunders and All, 2002). To reduce credit default risk exposure,bank must take into consideration maximum available attributes of borrowers; financial as well as managerial, quantitative as well as qualitative information in order to design internal credit scoring system. Evidences obtained from literatures on the area suggest that good internal credit scoring system helps bank to implement active credit risk management both at the individual transaction and at the overall portfolio levels. Responses of sample respondents in the appendix table 1 show that about 14% of sample respondents strongly agreed on the impact of weak internal credit scoring system on credit default risk exposure. In a similar way, about 57% of respondentsalso supported the influence of lack of internal credit scoring system on credit risk. On the other hand, about 4 % of sample respondents strongly disagree on the impact of weak internal credit scoring system on the credit default risk and 25% of respondents also did no support the impact of credit default risk on the credit default risk.
Responses of sample respondents presented in the appendix table 1 more in general suggest that about 71% of sample respondents agreed that weak internal credit risk credit scoring system exposes bank default risk. This result supportsarguments discussed in the literature review part. As discussed in the literature review part, continuous rating of each borrower acts as a basis for a continued loan review process and helps banks to focus attention on deteriorating credits well

before they become impaired. For instance, it can be substantiated by the idea of Saunders & Allen (2002), who insist pricing of loans according to their risk exposure.

Lack of Credit Follows Up

Absence of credit follows up is one factor that affects credit quality of bank & finally leads to default risk. Bank is expected to properly monitor the situation of loan portfolio effectively & take appropriate measures based on the results of monitoring.Effective credit monitoring requires bank to look into various operations of borrowers, checking whether the fund is properly managed, and the environment in which the borrower is carrying out its business.In this regarding, branch manager & credit officers are expected to regularly monitor existing credits to make sure that borrowers will able to meet their future loan repayment obligation. As it can be evidenced from response of sample respondents presented in the appendix table-1, except few respondents, majority of the sample respondents agreed that lack of credit follow up increases the probability of loan default. This finding is in line with the argument of Agresti et al. (2008), who argue that regular monitoring loan quality as early warning system is essential to ensure a sound financial system and prevent systemic credit crisis. The finding also supports the argument of (kolapo, 2012). According to the author, credit department of the bank is expected to evaluate credit applications, monitor existing credit to make sure that borrowers' will able to meet their future loan repayment obligation.

Lack of Effective Credit Risk Management Information System

Effectiveness of bank's credit management process heavily depends on the quality of management information systems being used during credit decision.Evidences obtained from both theoretical and empirical literatures suggest that effective credit risk management information system (CRMIS) is essential for sound credit decision. Effective credit risk management information system provides accurate and reliable information that enhances credit decision of bank. Arguments and empirical results discussed in the literature review part further indicate that. The Finding in the table- 1 shows that about 64.3 % of sample respondents were agreed that lack of effective credit risk management information system will lead to the probability of facing credit default risk. In addition, about 17.9 % were also strongly agreed on lack of effective credit risk management information system expose banks to credit default risk. Based on majority responses of sample respondents, it is possible to conclude lack of effective credit risk management system hampers quality of credit decision and exposes banks to credit default risk exposure. This finding can be confirmed the arguments of (Ditcher, 2003). According to the author, that success of lending out of credit depends on the information being used to evaluate and appraise the credit. Finding of the study suggest that banks should base their credit decision based on accurate and reliable information by designing and implement efficient and effective credit risk management information system.

Lack of Loan Diversification

Loan diversification remains an important part of managing credit default risk in the banking industry. It is widely argued in the literatures that loan diversification will decrease default risk exposure associated with lending. According to literatures on the area, good credit risk management requires proper loan diversification & absence of loan diversification increases probability of facing credit default risk. The response of sample respondents in table- 1indicates that about 64% of sample respondents agreed on absence of loan diversification & default risk exposure.This finding can be supported by the idea of Markowitz (1959), who argue that banks should diversify their loans to decrease credit risk, which is also in accordance with portfolio

theory. The finding of the study suggests that banks should properly diversify credit among various borrowers in way that it reduces credit default exposure of bank.

Inadequate Oversight by Board of Director

Effective credit default risk management requires well informed board of directors regarding to credit default risk situation of bank. The board is expected to issue different credit risk management guidelines & supervises its proper implementation. The Board is also expected to continuously supervise periodically trend of banks' credit default situation & other credit related issues. In addition, board is expected to examine adequacy of banks' credit decision & investigate the reason behind existing performing loan. Board is further required to set up policies and procedures, which at a minimum should address credit default risk exposure of bank (Angela, 2010).The findings from sample respondents presented in the table 1 indicates that about 71% respondents were agreed that inadequate board oversight on banks' credit activity increases credit default exposure of bank. From majority responses of sample respondents, it is possible to conclude that inadequate board oversight on banks' credit activity is one cause of credit to default risk in banks. This result supports empirical results of Njanike(2009), who conducted study on bank of Zimbabwe and found that poor corporate governance led to credit crisis of bank. Finding obtained from majority responses of sample respondents suggests that board of directors should regularly follow up credit situation of bank and take appropriate measure that would reduce credit risk exposure of bank.

Inadequate Oversight by branch Management at branch level.

Effective loan portfolio risk management requires proper bank management oversight on all credit related activities of bank at branch/ district level. In addition to board of directors, adequate oversight by bank manager during & after credit granting has significant effect on credit default risk exposure of in the banking industry. District or branch manager of bank is responsible for the implementation of sound credit risk management policies and procedures as promulgated by board of directors.It is the responsibility ofbranch managers to oversee day to day credit activities of bank ®ularly follow up the situation of outstanding credit portfolio.

Responses of sample respondents presented in the table1 indicate that about 71% of sample respondents supported that inadequate bank management oversight at branch level increases credit default exposure of bank. This can be substantiated by the argument of Berger and De Young (1997), who argue that poor management is one of the major causes of problem loans. They insist that managers in most banks with problem loans do not practice adequate loan underwriting, monitoring and control. Empirical finding of Ahmad (2007) also supports this result. By conducted study on key determinants of credit risk of commercial banks, the author found that management quality very critical to loan quality determinants.

Government Influence

Evidences from accessible literatures on the area suggest that state ownership of bank is expected to increase credit default risk of bank as government in most cases influence on banks' lending policy in order to achieve different economic & social policies. Evidences suggest that government influences bank's lending activities by using its ownership rights or by inducing banks to advance loans towards government priority areas. As stated by Salas and Saurina (2002), to enhance economic development of the country, state owned banks have more induced to finance riskier projects and allocate more favorable credit to small and medium enterprise. Findings obtained from sample respondents on the influence of government ownership on credit default risk exposure suggest that government ownership does not influence credit default risk exposure of banks under the investigation. According to responses obtained from sample

respondents, about 46.43% of respondents did not support loan repayment default due to government influence of bank by using its ownership right or discretionary power. As it can be evidenced from appendix table-I, only 25% of sample respondent supported loan repayment default due to government influence. This finding is in contrary with arguments reflected in the literatures regarding to the influence of government on bank's lending activity, which affect credit default risk exposure of bank. For instance, this finding is contrary with the argument of Micco, Panizza & Yanez (2004), who argue that state owned banks tend to have higher levels of nonperforming, due to their weak credit recovery capacity compared to privately owned banks. The author insists that nonperforming loans tend to be higher for banks with state ownership than for other groups.

Finding on Macroeconomic Causes of Credit default risk in Commercial Banks
Inflation

Increase in living cost due to inflation can affect borrowers' ability to repay their debts. Arguments and empirical results discussed in the literature review part suggest that inflation reduces debt servicing capacity of borrowers. Responses obtained from credit officers, internal auditor, accountant and managers regrading to the influence of inflation in the economy on loan ability of borrowers also shows that inflation in the economy adversely influence loan paying capacity of borrowers. As shown in the table - 1, about 71% of sample respondent agreed that loan payment default increases during inflation. As it can be evidenced responses of sample respondents presented in the table- 1, majority of sample respondent supported the idea that inflation in the economy affects loan repayment ability of borrowers. This finding supports theoretical arguments and empirical that have advocated a positive inflation and probability of loan default as discussed in the literatures review. For instance, it can be supported by the idea of Nkusu (2011), who argues that increased inflation weakens the loan payment capacity of the borrowers by reducing the real income. It can also be supported by the finding of Zribi and Boujelbene (2011), who found that the inflation rate has a negative impact on the credit risk.

Change in Foreign Exchange Rate

Change in foreign exchange rate is another macroeconomic factor that influences loan paying capacity of borrowers. The theoretical arguments in the literature discussed in the literature review shows part that an increase in foreign exchange currency adversely affect the loan payment capacity of home borrowers. Response obtained from credit officer, internal auditor, accountant and managers presented in the table- 1 also tend support arguments and empirical results reflected in the literature review regarding to the impact of change in exchange rate on borrowers' loan repayment ability. As shown in table- 1, majority of sample respondents agreed that increase in exchange rate influence loan repayment ability of borrowers. As it can evidenced from responses of sample respondents presented in table- 1, about 7.14 % of credit officer, internal auditor, accountant and managers strongly agreed loan repayment default that happens as result increase in foreign exchange rate. In a similar way, about 64.9% of credit officer, internal auditor, accountant and managers also supported statement that claim positive impact of increases in foreign exchange rate on credit default risk in banking industry.As shown in the table-1, majority of credit officer, internal auditor, accountant and managers agreed that on positive relationship between increases in exchange rate and credit default risk.This finding is in line with ideas discussed in the literatures review regarding to the impact of increase in exchange rate on credit risk.

GDP Growth

It has been widely argued that growth in the country's domestic product has significant impact both on the growth of credit & probability of default. Finding obtained from credit officer, internal auditor, accountant & managers support the idea that economic condition influences loan payment capacity of borrowers. As it can be seen from table- 1, about 78.57% of respondents were agreed that low GDP growth weakens loan paying capacity of borrowers. This result is in line with the finding of (Allen and Saunders, 2002). They found that default probabilities tend to be higher in recession state & changes over time depending on the trend of GPD growth. The finding also supports the finding of Aver(2008), who conducted study credit risk of the Slovenian banking and found that loan portfolio depends on the economic environment. In addition, the result supports empirical results found by (Ricardas, 2012). The author found that the macro level, GDP determines credit default risk. In general, this finding supports arguments and empirical results discussed in the literature view part.

High Interest Rate

The level of interest rate that banks charge on loan is expected to influence loan repayment ability of a borrower. The theoretical & empirical results in the literature review suggest that the level of interest rate charged on loan has significant effect credit default risk exposure of a bank. Evidences obtained from sample respondents on the effect of high interest rate on loan repayment default shows about half of sample respondents supported the idea that high interest adversely influences loan paying capacity of borrowers. On other hand, about 28.6 % of sample respondents disagreed that high interest does not affect loan repayment & about 21.4% of respondents were neutral on the influence of interest on loan default. As it can be seen from table-1, majority responses of sample respondents supported that high interest rate increases credit default risk. Finding obtained from sample respondents supports argument and empirical results discussed in the literature review. For instance, it can be confirmed by the finding of Sinkey and Greenwalt (1991), who found that significant positive relationship between the loan loss rate and high interest rates. The finding also supports empirical finding of Jimenez and Saurian (2005), who found that nonperforming loans in Spanish banks are determined by high real interest rates used by bank managers.

Finding on Borrowers' specific causes of credit default risk in commercial banks

Poor Business Performance

Evidences obtained from literatures on the area suggest that poor business performance of borrowers is one of borrowers' specific causes of credit default risk. As discussed in the literature review, credit default risk due to poor business performance on the side of borrowers happens due to lack of properly examining feasibility of proposed business plan presented by the borrower.

The problem also arises due to lack of adequate training on the part of borrowers regarding to how to fund management. Table-1 show information provided by sample respondents regarding to the extent to which agree or disagreed on poor business performance of borrowers as a cause of loan repayment default. As it can be evidenced from table-1, about 35.7% of sample respondents strongly agreed that poor business performance of borrowers affects loan paying capacity of borrowers. In a similar way, about 39.3% of sample respondents were also agreed that poor business performance lead loan repayment default at maturity of credit terms. On the other hand, about 10.7 % respondents were strongly disagreed that poor business performance does not lead to loan repayment default & 10.3% were neutral. As it can be evidenced from table-1, majority of sample respondents supported the idea that poor business is one source of borrowers' related causes of credit default risk in commercial banks. This finding supports the

argument ofOssom(2011), who argues that credit officers should conduct in depth analysis on the feasibility of business plan present by a borrower at a time of loan application. Based on the finding of the study, the researcher suggests that it is more advisable if banks cooperate with academic institutions that provide capacity building training for borrowers regarding to business management.

Business Failure

As discussed in the review literature part, business failure is another borrower specific factor that significant influence loan repayment capacity of borrowers. As shown in the table- 1, about 7.1 % of respondents strongly agreed that business failure leads to loan default & 42.9% of respondents also agree that business failure leads to loan repayment default. On other hand, about 10.7% of sample respondents strongly disagree that business failure does not lead to loan repayment default. The findings presented in the table- 1 further indicates that about 28.6 % did not support the idea that loan repayment default due to business failure.

From majority responses of sample respondents, it possible to conclude that business failure leads to loan repayment default. The finding is in line with the arguments of Ossom (2011) as discussed in the literature review part.The finding suggests that commercial banks are expected to critically examine sustainability of business to be financed. The finding also suggests that bank must to follow financial situation of business financed through credit. This would help banks to take appropriate measures before whole business is closed. The result further suggests that banks are expected have business consultant group that periodically contact & advice borrower based on financial situation of business being financed. This would help bank to reduce default risk due to information asymmetry on subsequent lending to borrower and increase the safety of fund lent for business. It would also enhance borrowers' capacity on how to manage business and ultimately lead to long term relationship between borrowers& bank.

Diversion of Fund

Evidences on the area suggest that considerable portion of loaned funds usually ends up being diverted into other business that was not intended earlier. Fund diversion may occur when borrowers use short term borrowed fund for long term benefits, spend borrowed funds for purposes / activities other than those for which the loan granted or transferring funds to another business without approval of banks. Evidences suggest that when borrowers do not spend borrowed funds for purpose of money is borrowed; the probability of default would be high as risk of doing different activity is not the same. The problem happens due to absence of follow up by a bank once credit has been granted. Responses obtained from sample respondents in the table- 1indicatesuggest that about 17.9% respondents strongly supported loan repayment default due to diversion of funds. In addition, about 57.1% of respondents also agreed that borrowers' diversion of fund lead to loan default. On other hand, about 25% of sample respondents did not support loan repayment due to diversion of fund &the remaining respondents did not indicate the extent to which they agree or disagree with the statement.As it can be evidenced from responses of sample respondent presented in the appendix table- 1, majority of sample respondents supported the idea that diversion of fund by borrowers for another purpose lead to loan repayment default. The result suggests that lending bank is expected to follow whether borrowed fund is spent on the purpose of credit. This finding can be supported by the argument of Ahmad (1997), who argue that lack of willingness to pay loan is coupled with diversion of fund. As discussed in the literature review par, the argument of Ossom (2011) &Hons (2009) also supports this finding.

In adequate Amount credit for the Purpose Credit (Under Financing)

According to literatures on the area, underfinancing has been identified as a cause of delay in loan repayment in the previous literatures on the area. According to evidences on the area, if credit amount is not adequate for the intended purpose, it may lead to loss of credit & repayment default. Results presented inthe table- 1 indicates information provided by sample respondents on the extent to which they agree or disagree on inadequate amount of credit exposes borrowers to loan repayment default. According to results of sample respondents presented in table-1, about 64% of sample respondent did not support under financing as a causes of credit default risk. According to response presented in the table- 1, only few respondents, (25%) of sample respondents agreed with the statement. This result is in contrary with the arguments of Ossom (2011) & Hons (2009) as discussed in the literature review part.It also contradicts with the finding of Balogun and Alimi (1990), who identified loan shortage as the major causes of loan default.

Poor Credit History

As discussed in the literatures review, credit history of borrowers determines probability of facing loan default at the maturity of loan terms. Evidences suggest that borrowers with good credit quality are less likely to default when compared to borrowers with poor credit history. Result in the appendix table-I shows response of sample respondents on the extent to which poor credit history of a borrower will lead to loan default. As shown in the table- 1, about 64% of sample respondents agreed that poor credit history a of borrowerwill lead to loan repayment default. On other hand, about 21% of respondents did not support the statement that statespoor credit history of borrowers does lead to loan repayment default. The finding from majority responses of sample respondents indicates that poor credit history ofborroweris one source loan repayment default. The result suggests that banks should adequately examine credit background of borrowers before granting credit. The argument of Andrea (2010**)** supports this finding. According to the author, borrowers with good personal credit histories are more likely to repay their loans.

It can also be confirmed by the finding of Okorie (1986), who conducted study conducted by in Ondo state in Nigeria and found that loan delinquency is associated with poor credit history of borrowers.

Fund Management Problem

Lack of proper fund management by a borrower is another borrower specific cause of credit default risk. Borrowed fund would not produce desired results both for borrowers & lenders unless it is properly managed. How borrowers manage their fund has significant effect on the safety of credit for lenders. Finding obtained from sample respondents indicates that about 60.7% agreed that lack fund management problem leads to loan repayment default at the maturity. On other hand, about 32 % sample respondents did not agree on loan repayment default that happens due to lack of fund management. Majority responses of sample respondents indicate that lack of proper fund management practices will lead to loan repayment default. The result suggests that creditors should maintain strong relationship with borrowers, which will help them to regularly monitor how borrowed fund is being used by borrowers.

Lack of Business Management Experience

It is known that borrowed money would no generate desired benefit unless business financed by credit is properly managed. A borrower has to understand every aspect of a business as it has significant impact on the financial performance of the business.Evidences on the area suggest that business run by an experienced person improves financial performance a business, which in turn lead to timelyrepayment of loan.

Finding obtained from sample respondents indicates that about 60.7% of sample respondents agreed that lack of business management experience will lead to loan repayment default. In a similar way, about 25% of sample respondentsalso strongly agreed that lack of business management experiencewill lead to loan repayment default. On other hand, about 14% of sample respondents did not support loan repayment default that occurs due to lack of business management experience. Findings of the study more in general tend to suggest that lack of business management experience increases credit default. This can be confirmed by the argument of Andrea(2010), who argues thatborrowers with more management experience will likely run better businesses and pay back loans better.

Short Term operation (Age of the Business Operation)

We are living in rapidly changing business environment. Success in rapidly changing business environment requires considerable skills and competencies that are key to a sustainable business operation. As discussed in the literature review part, cash flows from a business depend on the age of the business. Evidences suggest that long term business experience enhanceloan repayment capacity of a borrower. Results presented in the table- 1show response of sample respondents on the impact of short-term business operation on loan repayment default. The responses provided by sample respondents indicate that about 46% of sample respondent agreed loan repayment default short term operation leads to loan repayment. On other hand, about 28 % did not support loan repayment default due to short term business operation & the reaming 28% sample respondents were neutral. The argument of Andrea (2010)supports this finding. The author insists that older businesses tend to be more stable and probably can absorb negatives turns in the business cycle better than start-ups.**Asset ownership**

Evidences suggest that quality asset owned by a borrower serve as alternative guarantee in case borrowers face financial problem and asset being used as collateral has significant effect on loan repayment of a borrower. As shown in the table- 1, majority respondents did not support the idea that loan repayment default due to lack of asset ownership. This finding is in contrary with the arguments of (Andrea, 2010).According to the author, borrowers with the ability to liquidate other assets to pay back the loan are more likely to be able to repay.

Personal name on loan Contract

According to evidences on the area, personal name on the loan agreement is also expected to influence loan repayment default. The finding obtained from sample respondent indicates that personal name on loan contract does not lead to loan default. As shown in the table - 1, about 57% of respondents did not agree on the influence of personal name on loan contract & loan repayment default. The finding is in contrary with the idea of (Andrea, 2010**)**. The author insists that borrower will probably be less likely to default if the loan is in their name rather than in the business's name.

Marketing Problem

Marketing related problems are also expected to influence of loan paying capacity of borrowers. Borrowers fail to design and implement appropriate marketing strategies for their products or services due to lack of marketing knowledge and experience. This would adversely affect success of business in highly competitive business environment. Evidences suggest that competitive factors in the market expose a borrower loan default in many businesses. Result obtained from sample respondents on the extent to which they agree or disagree on loan default due to lack of marketing problem is presented in the table- 1. As indicated in the table- 1, majority responses of sample respondents suggest that loan default in business associated with lack of designed appropriate market strategies. This finding can be supported by the argument of Hons (2009) as

discussed in the literature review. The finding suggests that banks should critically examine appropriateness marketing strategies that borrowersfollowfor their products or service by working with experts on the area.

Ignorance of Credit Terms/Strategic Default

Non-conformity with credit term is also other borrowers' related causes of credit default risk. Some borrowers intentionally declare bankruptcy even though they have financial ability to pay both principal and interest within stated period of time. The finding obtained from sample respondents also suggests that borrowers intentionally fail to pay loan as per loan agreement. As shown in the table- 1, about 60.7 % of respondents supported that borrower exposed to loan repayment due to noncompliance with credit terms. In addition, about 21.1% of sample respondents also agreed that noncompliance with credit term will lead to loan repayment default. The argument of Hons (2009) supports this finding. The responses gathered through open ended questionnaires from sample respondents on causes of credit default risk also indicates that absence of adequate evaluation on financial concerns of borrowers by credit officers & managers through credit granting committee, information gap between bank & borrowers, willingness & capacity of borrowers to pay back loan, poor credit appraisal & processing system, educational background of borrowers, poor credit history, business management problem, high tax, multiple borrowings, lack of credit follow up(after credit granting), lack of fund management problem, credit duration, credit policy of bank, business loss, lending to risky borrowers were identified as causes of loan repayment default risk. According to written results obtained from open ended questionnaires, poor credit assessment (lack of properly applying 5c's during credit analysis), diversion of funds and Lack of detail analysis of borrowers proposed projects/ business contribute to credit default risk in banks under the investigation.

Information obtained from written response of sample respondents suggest that lending strategy of bank, borrowers' lack of awareness, competition between banks for market share, lack of thorough analysis about borrowers financial status during credit granting process, absence of adequately investigating reason behind failed borrowers, lending to borrower who do not fulfill the requirement of banks' credit policy, misleading financial statement offered by borrowers, lack of continuous credit follow up, screening problem, absence of properly implementing credit risk management guidelines, lack of information, lack of regular supervision by regulatory authority & weak internal credit assessment were pointed out by sample respondents as bank specific causes of credit default risk in banking industry.Responses obtained through unstructured interview with managers & credit officers (where manger was not available) to gather supportive information on borrowers related causes of credit default risk suggest that borrowers do not spend money for the purpose of credit. Responses obtained from managers and credit officers through interview method suggest that borrowers use borrowed fund to pay liability of another person & they borrow fund from one bank to pay liability of another bank. According to interview results obtained from bank managers and credit officers, in addition to diversion of funds, marketing problem is the main causes of credit default risk. Majority mangers indicated that business borrowers borrow fund mainly by expecting good market condition & market problem led many borrowers to loan repayment default. According to their idea, majority borrowers are not professional in their business & this has its own effects on proper fund management & appropriate business decision and timely loan payment.

Information obtained through interview with credit officers and bank manager suggest that once credit is granted, borrowers do not give much emphasis to credit terms. This is due to the fact that when bank takes legal measure, legal process takes much time & even it takes long time for bank to arrange sell of collateral & some borrowers intentionally default to take the advantage of long-

time legal process.The interview results further suggest that it is very difficult to obtain borrower who meet credit standard of bank & bank always forces to lend on flexible basis &this will expose bank to loan repayment default.

Findings on the Impact of Credit Default Risk on Performance of Bank

The last part of the paper discusses findings obtained ondiagnostic tests and regression analysis. This part of the paper first discusses findings obtained on required econometrics tests and ends up discussing regression results obtained byemploying fixed and random effect estimation techniques.

Unit root tests

It is necessary to check stationarity of panel data before conducting empirical analysis. Testing unit root is very important before estimating panel regression model. In order to check whether panel data of the study are stationary and do not possess unit root, Augmented Dickey Fuller (ADF) was employed and results obtained under each testing method is presented in the following table.

Table 2: Stationarity test results at I(0)
Ho: Panel data contain unit root
Ha: panels are stationary

Variable	**Unit root testing methods**							
	LevinLin–hu method	Hamis-Travalis method	Breitung method	Im-pesaran-shin method	Fisher-type method			
					Inverse chi squared	Inverse normal	Inverse logit	Modified Inv.Chi squared
	P - value	P - value	p- value	p- value	p- value	p- value	p- value	p- value
ROA	0.0059	0.0000	0.1112	0.0016	0.0000	0.0000	0.0000	0.0000
ROE	0.0129	0.0000	0.0651	0.0065	0.0002	0.0004	0.0002	0.0000
NIMR	0.0028	0.0000	0.0075	0.0058	0.0020	0.0009	0.0014	0.0001
LLPAR	0.0000	0.4234	0.7209	0.7652	0.0913	0.6803	0.4528	0.0799
LLPR	0.0633	0.7992	0.4004	0.7811	0.9592	0.8847	0.8619	0.9245
EAR	0.3482	0.9971	0.3522	0.2509	0.0000	0.0243	0.0001	0.0000
LDR	0.0594	0.0022	0.0018	0.3051	0.5890	0.4072	0.4142	0.6351
LAR	0.2927	0.2804	0.0080	0.6039	0.9097	0.7594	0.7355	0.8848

Unit root test results presented in the above table shows that pane data of ROA, ROE & NIMR are stationery and don not possess unit. As it can be evidenced from the above table, p- value of each unit root testing method suggests rejection of hull hypothesis in favor of alternative hypothesis.On the other hand, the remaining variables of the study display non-stationarity properties.

As it can be seen from stationarity test results presented in thetable2, panel data of LLPAR, LLPR, EAR, LDR & LAR have unit root problem as P- value of all stationarity testing methods suggests lack stationarity property in the panel data of these variables. To detect unit root problem in the

data distribution of these variables, first difference was calculated for each variable and unit root tests results after firstdifferencing is presented in the following table. As it can be seen from p – value of each unit root testing method, panel data distribution of all variables became stationary after first differencing.

Variable	**Table 3: stationarity test results at I(1)** **Ho: Panel data contain unit root** **Ha: panels are stationary**							
	Unit root testing methods							
	LevinLin–hu method	Hamis-Travalis method	Breitung method	Im-pesaran-shin method	Fisher-type method			
					Inverse chi squared	Inverse normal	Inverse logit	Modified Inv.Chi squared
	P - value	P - value	p- value	p- value	p- value	p- value	p- value	p- value
LLPR	0.0001	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000
LLPAR	0.0000	0.0000	0.0328	0.0000	0.0000	0.0000	0.0000	0.0000
EAR	0.0138	0.0000	0.0033	0.0000	0.0000	0.0000	0.0000	0.0000
LDR	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
LAR	0.3842	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Correlation Analysis

It is necessary to identify direction and magnitude of relationship among independent variables of the study before running regression analysis.To evaluate strength and direction of association among independent variables of the study, correlation analysis was conducted by applying Pearsoncorrelation testand its result is presented in the following table.

Table 4: Correlation test results

	LLPR	LLPAR	EAR	LDR	LAR
LLPR	1.0000				
LLPAR	0.0639	1.0000			
EAR	0.0545	-0.1471	1.0000		
DLR	-0.0019	0.0623	-0.1074	1.0000	
LAR	-0.2652	0.0623	0.2879	0.0846	1.0000

Pearson correlation coefficient presented in the above table shows that there is no there is no multi collinearity among predictors of the study. As it can be evidenced from the above table, correlation coefficient of each independent variable is less than 0.7, suggesting absence of multicollinearity problem among independent variables.

Regression Analysis

The final part of the paper discusses findings obtained from regression analysis on the impact of credit default risk on the performance commercial banks under the investigation. To investigate empirical relationship among dependent variables and independent variables of the study, the researcher applied panel regression analysis by using fixed effect and random effect as statistical estimation techniques.The following table presents Regressionresults by using return on asset (ROA), return on equity (ROE) & Net interest margin ratio (NIMR) as dependent variables and loan loss provision ratio (LLPR), loan loss provision to asset ratio (LLPAR), Equity to asset ratio (ER), loan to deposit ratio (LDR) & loan to asset ratio as independent variables.

Table 5: Regression Results

Random effect method							Fixed effect method					
Model – I			Model-II		Model- III		Model - I		Model- II		Model -III	
Variable	Coef.	P>|z|	Coef.	P>|z|	Coef.	P>|z|	Coef.	P>|z|	Coef.	P>|z|	Coef.	P>|z|
LLPR	-.0305	0.304	-.5931	0.160	-.0881	0.084	-.0397	0.153	-.3086	0.416	-.0755	0.102
LLPAR	-.3027	0.017	-5.19	0.004	-.0722	.740	-.3928	0.002	-3.6	0.035	.1379	0.494
EAR	.0043	0.789	-.0118	0.959	-.0097	.728	-.0008	0.958	-.1681	0.437	.0160	0.539
LDR	.0075	0.435	.0159	0.907	-.0099	0.547	.00799	0.373	-.0425	0.728	-.0064	0.665
LAR	-.0066	0.439	-.1249	0.307	-.0091	0.535	-.0061	0.443	-.0724	0.509	-.0117	0.376
cons	2.7	0.000	25.64	0.000	6.6	0.000	2.7	.000	25.9	0.000	6.6	0.000

As it can be seen from the above table, loan loss provision ratio (LLPR) has negative impact on return on asset (ROA) both under random effect and fixed effect. The regression output presented in the above table shows that loan loss provision ratio has adverse effect on return on equity (ROE) according to estimation made by random effect and fixed effect. As it can be evidenced from table5, about one percent increase in loan loss provision ratio contributed to 0.0305%, 0.5931% &0.0881 decrease in return on asset, return on equity and net interest margin ratio respectively during the study period according to finding obtained by applying random effect estimation technique. In a similar way, findings obtained from applying fixed effect suggest that about 0.0397%, 0.3086% &0.0755% decrease in return on asset, return on equity and net interest margin ratio observed respectively as a result of about one present increase in loan loss ratio during the study period by assuming that other being constant. As it can be evidenced from regression output presented in the above table, both random effect and fixed effect revealed similar findings regarding to the impact of loan loss provision ratio on ROA, ROE & NIMR of banks investigation during the study periods.

The above table also shows that loan loss provision to asset ratio was found to have a negative impact on return on asset, return on equity and net interest margin ratio respectively according to finding obtained by applying random estimation technique. Finding obtained by applying fixed effect estimation technique also revealed that loan loss to asset ratio has negative impact on return on asset and equity on equity.However, finding obtained on the impact of loan loss to asset ratio on net interest margin ratio under random effect contradicts withthe findingof fixed effect. As it can be evidenced from the above table, loan loss to asset ratio was found to have a negative effect on net interest margin ratio under random estimation technique and positive impact under fixed estimation technique. Regression results presented in the above table alsoshow that equity to asset ratio has negative impact on return on equity (ROE) according to estimation made by fixed effect and random effect. However, it was found to have a positive impact on return on asset under

random effect and negative impact on return on asset under fixed effect estimation technique. In a similar way, inconsistent finding was found regarding to the impact of loan loss provision to asset ratio on net interest margin ratio both under random effect and fixed effect. As it can be seen from the above table, it was found to have a negative impact on net interest margin ratio under random effect and positive impact on net interest margin ratio.

Regarding to the impact of loan to deposit ratio (LDR) on return on asset of banks under the investigation, it was found loan to deposit ratio has positive impact on return-on-return asset. As it can be seen beta coefficient of LDR in the above table, an increase in the ratio of loan to deposit led to increase in performance of banks under the investigation during the study periods according to estimation made both by fixed effect and random effect by assuming that other things being constant. However, findings obtained from random and fixed effect regression analysis revealed negative impact of loan to deposit ratio on net interest margin ratio. On the other hand, loan to deposit ratio was found to have positive impact of return on equity according to random effect estimation technique and negative impact of return on equity according finding obtained by applying fixed effect regression analysis. Lastly, regression results presented in the above table show negative relationship between loan to asset ratio and return on asset, return on equity and net interest margin ratio respectively. As shown in the above table, regression results of both random effect and fixed effect revealed negative ofloan to asset ratio has a negative impact on return on asset, return on equity & net interest margin ratio respectively.

Findings presented in the above table regarding to the impact of credit default risk on the performance of tend to suggest that credit default risk has negative impact on the performance of banks under the investigation. As shown in the above table, majority of independent variables used to measure credit risk were found to have a negative relationship with dependent variables of the study. As it can be evidenced from beta coefficient of majority of independent variables both under random effect and fixed effect, the findings of the study tend to reveal adverse impact of credit default risk on the performance of banks under the investigation during the study periods. This can be substantiated by substantial number of arguments and empirical results of literatures on the area regarding to the impact of credit risk on the performance of banking industry.

As discussed in the literature review part, considerable number of previous studies on the area has reported negative of credit risk on the performance of banking industry. Findings of the study on the negative relationship between bank credit risk indicators variables and bank performance indicators variables of the study therefore support pervious empirical results that have reported negative impact of credit default risk on the performance of banks. For instance, it can be substantiated by the finding of Sun & chang (2018), Felix and Claudine (2008), Poudel (2012), Musyoki and Kadubo (2012) &Noman et al (2015), who found negative impact of credit risk on the profitability of banking industry. On the other hand, findings of the study on the positive relationship between credit risk indicators variables and performance indicators of banks under the investigation contradict with considerable number of arguments and empirical studies that reported adverse impact of credit risk on the financial performance of banking industry.

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