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Influence of Information Asymmetry on Commercial Banks Lending Performance in Rwanda

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Abstract

This study about the influence of information asymmetry on the commercial banks' lending in Rwanda includes four specific objectives which to analyze the influence of moral hazard asymmetric information on the commercial banks' lending in Rwanda; analyze the influence of adverse selection asymmetric information to the commercial banks' lending in Rwanda; determine the correlation between monitoring costs information and commercial banks' lending in Rwanda and determine the link between asymmetric information and lending performance of commercial banks. This means that there a requirement of reducing information asymmetry in order to allow the performance lending in commercial banks of Rwanda. The study followed both correlation and comparative designs, and used both qualitative and quantitative. The population under study was comprised of board of directors, executives, top managers, middle managers and lower managers of 10 strong markets leadership in banking sector in Rwanda. The researcher used systematic random sampling method in each strata to select 278 from 931 people. The researcher used both primary and secondary source of data. Discriminating variables of ratios were analyzed using the Altman 'Z' score. The data were analyzed using Statistical Packaging for Social Sciences (SPSS) and E-Xcel. In relation to the first research objective, this research found that the coefficient r between moral hazard asymmetric information and performance of commercial banks equal to 0.980. This leads to confirm that there is significant relationship between moral hazard asymmetric information and performance of bank. In relation to the second research objective, the study found that the coefficient r equal to 0.986. This leads to

confirm that there is significant positive relationship between adverse selection asymmetric information and performance of bank. In relation to the third research objective, this research found that the coefficient r equal to 0.971. This leads to confirm that there is significant correlation between cost forecast asymmetric information and performance of bank. It is recommended for all registered commercial banks that decision to introduce to financial management information needs to be accompanied by strong commitment, sufficient manpower and financial resources, widespread internal support, and an agenda for effective communication.

Keywords: Moral Hazard, Adverse Selection, Monitoring Historical Costs, Information Asymmetry, Banks Lending.

Introduction

All-over the world, asymmetric information affects companies' business transactions, whereby company needs to undergo significant structural transformation to be able to become the main driver of economic growth due to the market microstructure information (Frank, 2000). Worldwide, the usage of asymmetric information has been a tremendous growth in manufacturing industries in the recent past. The most obvious example is perhaps the companies, where through the introduction of information technology related products in transaction, electronic payments, security investments and information exchange, companies now provide more diverse services to customers with less manpower (Gautam & Riitta, 2001).

As a result of industrialization, the need for corporate finance emerged. For this reason, the business managers needed in private companies were mostly transferred from State Economic Enterprises. Asymmetric information was useful tool designed to help in the management and control of the corporate-financial in Spain. In order to deploy financial performance strategies, Spanish firms have needed to invest in technology to promote information (Elena, Raquel, Pérez & Clara, 2011). According to Aysan (2006), Turkish accounting profession has been in progress since the establishment of Turkish Republic. According to Yosra and Sami (2013) asymmetric information complexity of Tunisian companies affected exports due to low level of cost forecast information. Indeed, openness to international markets encourages exporters to track changes at all levels in order to have information on time and thus act in a timely manner.

The main objectives of forecasting cost information in Ghana was to ascertain the financial position of the business in the future, the performance of the organization and be able to ascertain the breakeven point of the organization basing on the capital investment (Soudani, 2012). Business performance has increased over several years Uganda and this performance was mainly measured in the terms of financial performance. Businesses in Uganda contain transactions which generate information for better analysis of business performance (Augustine, Maureen & Jian, 2014).

In Tanzania, business forecast information plays a vital role in the capital formation of a country and people consider it as the life blood of a growing economy. Therefore, it is very important to forecast cost information effectively and efficiently. One of the major issues encountered by fund managers today in Tanzania is not the procurement of funds but also their meaningful deployment to generate maximum returns (Mohammad, 2013). Information is an important corporate financial decision since it directly affects the profitability of the firm (Arunkumar & Ramanan, 2013).

Asymmetric information is confronted with problem of alternative decision making especially knowing that resources are relatively scarce and limited, it is therefore pertinent that good information be made available for proper and accurate decision making, maximization of profitability and optimal utilization of scarce resource (Alzoubi, 2012).

Performance of company is a quality of company which can be achieved by valuable results. For example, a firm having high return on assets (ROA) is said to be performing well. But having high ROA is not a sign of good performance: there are some other variables to be considered such as sales, profit and expenses (Mehran & Izah). A market microstructure is the study of the trading mechanisms used for financial securities to exchanging assets under a specific set of rules (Gheorghe, 2007).

In 2008, when the economic activity recovered, the overall Rwandan banking sector was almost in a collapsing position (National Bank of Rwanda, 2015). To enhance, this issue, the Government of Rwanda settled vision to develop a stable and sound financial sector that is sufficiently deep and broad, capable of efficiently mobilizing and allocating resources to address the development needs (Ministry of Finance and Economic Planning (Ministry of Finance and Economic Planning (Ministry of Finance and Economic Planning [MINECOFIN], 2015).

Significance of the Study

The research study is of paramount to the researcher, commercial banks, other researchers and University. The main significance of this study is to generate information about the role of asymmetric information in efficient and effective decision making in organizations which results into better performance. The information is anticipated to be vital to the management and staff at commercial banks and assist them to perform better in decision making and other companies. The study will act as a source of reference for other scholars who may undertake studies in the same field. University and other researchers will use this study in one way or other; act as a reference to other scholars who would want to venture into the same field, and thus contributing to the existence of literature. The study will enable the researcher to be acquainted with knowledge of how to deal with practical problem through research finding. The research will also enable the researcher to be awarded a master degree in Finance. This research will be used and consulted by other researcher to enhance their knowledge. Commercial banks and other companies will receive recommendations and suggestions concerning asymmetric information and lending according to the research findings.

Problem Statement

Campbell (2007) indicates that Rwanda has the highest level of NPLs compared to the rest of the East African States, the study of Lin and Yu (2002) stated that the analysis of information in commercial banks in developing countries remains unsatisfactory and studies on this area are rare in the literature. This could be the main cause of low lending performance of commercial banks in Rwanda, where non-performing loan ratio (NPLs ratio) increased to 6.2% as at end December 2015 compared to 6.0% recorded in December 2014. Although BNR has strengthened bank supervision and regulatory measures, NPLs still remain high and this influences the lending performance of commercial banks in Rwanda (National Bank of Rwanda, 2015).

The findings of Chiyachantana (2013) indicated larger firms; firms with high growth opportunity and superior performance are associated with level of information asymmetry. With respect to

type of information, firms with superior operating performance, high growth opportunity are likely to disclose the investment and structural change as well as legal and miscellaneous information. While, the findings of Yosra and Sami (2013) indicated that listed companies with low growth opportunity and low corporate disclosure have low relative bid-ask spreads and high share turnover.

Conclusively, the evidence supports the notion that increasing corporate disclosure and transparency reduce the asymmetric information between informed and uninformed traders. Furthermore, Yosra and Sami (2013) found that information asymmetry is negatively related to financial commercial banks lending, while Adam, Anders and Fred (2013) revealed that information integration provides significant independent influences on performance of USA companies. However, from the empirical literature, the researcher recognized that different researchers from different countries did not have same understanding on information asymmetry and performance of their case studies. This means that there a requirement of reducing information asymmetry in order to allow the performance lending in commercial banks of Rwanda.

Objectives of the Study

The general objective of the study is to analyze the influence of information asymmetry on the commercial banks lending in Rwanda. Specific objectives are;

1. To analyse the influence of moral hazard due to asymmetric information on commercial banks' performance in Rwanda;
2. To analyze the influence of adverse selection due to asymmetric information on commercial banks' performance in Rwanda;
3. To determine the correlation between monitoring costs information and commercial banks' performance in Rwanda.
4. To determine the link between asymmetric information and lending performance of commercial banks.

Research Hypotheses

1. H_{01} : There is no influence of moral hazard asymmetric information on commercial banks' performance in Rwanda.
2. H_{02} : There is no influence of adverse selection asymmetric information on commercial banks' performance in Rwanda.
3. H_{03} : There is no correlation between historical costs of information asymmetry and commercial banks' performance in Rwanda.
4. H_{04} : There is no link between asymmetric information and lending performance of commercial banks.

Scope of the Study

This subsection focuses on content scope, time scope and geographical scope. The researcher divided scope of the study into three parts in order to get accurate and update information concerning research objectives. Concerning content scope, this research focused on asymmetric information and lending in commercial. The researcher chose this field, because even if information influences business performance cycle, there are few researches carried out on this

field in Rwandan commercial banks. Concerning the time scope, this research considered a period scope of 10 years, such as 2006 – 2015, concerning geographical scope; this research was carried out on 10 strong markets leadership in banking sector in Rwanda located in Kigali City as indicated by Q1 2016.

Theoretical Framework

Asymmetric information is that market transactions on the two sides to deal with the subject or content of information in terms of quantity and quality that are not equal (Vojtech, 2013). Party transactions have frequently manifested itself even more complete information, while the other has only less information, which may lead to decision-making information vulnerable to mistakes in transactions, or information to the advantage of information not conducive to the behavior of the disadvantaged (Praveen, 1990).

According to Gale (2004), they are difference negative impact of asymmetric information such as Adverse selection- immoral behavior that takes advantage of asymmetric information before a transaction. For example, a person who is not in optimal health may be more inclined to purchase life insurance than someone who feels fine. This external feature drives off the sellers of good cars (who expect to receive a fair price for their goods), causing a fault in the market, also known as adverse selection (Varian, 2000). When this condition takes place consecutively, at most it creates the concept of a lemons market in which good quality goods are forced out of the market and only the poor quality items could remain.

A situation in which one party in a transaction has more or superior information compared to another, this often happens in transactions where the seller knows more than the buyer, although the reverse can happen as well. Potentially, this could be a harmful situation because one party can take advantage of the other party's lack of knowledge. This is a situation where there is imperfect knowledge. In particular it occurs where one party has different information to another. Information asymmetry often caused by the imbalance interests between market participants, impacts social the principles of equity, justice and the allocation of resources more efficient in the market. Moral Hazard- immoral behavior that takes advantage of asymmetric information after a transaction. For example, if someone has fire insurance they may be more likely to commit arson to reap the benefits of the insurance. Financial disclosures and disclosure arises from information asymmetry and agency conflicts between managers and outside investors (Paul, 2001).

Adverse Selection Theory

When two (or more) individuals are about to agree on a trade, and one of them happens to have some information that the other(s) do not have, this situation is referred to as adverse selection (Akerlof & Stiglitz, 1969). In 2001, the Nobel Prize in Economic Science was awarded to Akerlof, Spence and Stiglitz “for their analyses of markets with asymmetric information”. Each of the three quoted papers investigates the implications of adverse selection on the product, labor and insurance markets respectively.

According to Nwauko and Ashinze (2015) Spence in 1973 refers to a similar mechanism when workers “sell” their labor to firms and have private information about their skills. The literature on adverse selection then investigates arrangements that allow segmentation of the market according to unobserved quality, sellers signal the quality of their products by offering product-

warranties to customers, or workers signal their ability by getting academic degrees. It is important to emphasize that market segmentation does not primarily come from some information inherent to, say, warranties, but rather from menu of contracts offered to agents that leads to self-selection, revealing their private information.

Moral Hazard Theory

The framework often used to analyze moral hazard situations is the principal-agent problem, whereby one individual – the principal – wants to hire another individual – the agent – to perform a given task. However, once the contract has been signed, the agent can either take an action that is non-observable for the principal (hidden action), or obtain information about some characteristics of the environment that the principal cannot acquire (hidden information). As opposed to the previous case, in which agents were offered a menu of contracts, moral hazard situations imply that every agent is given the same contract; the contract must therefore take into account future information asymmetries, and hence address the incentives problem (Adam, Anders & Fred, 2013).

In addition to adverse selection, moral hazards are also a result of asymmetric information. A moral hazard is a situation where a party shall take risks because the cost that could incur shall not be felt by the party taking the risk. A moral hazard can occur when the actions of one party may change to the detriment of another after a financial transaction. In relation to asymmetric information, moral hazard may occur if one party is insulated from risk and has more information about its actions and intentions than the party paying for the negative consequences of the risk (Alexandra, 2006).

Historical Cost Information Theory

This study will be guided by historical cost theory, according to (John, 2008), cost control is concerned with past information and it requires consistency and comparability that is why it requires the accounting transactions to be recorded at their historical costs. This is called historical cost concept. Historical cost is the value of a resource given up or a liability incurred to acquire an asset/service at the time when the resource was given up or the liability incurred. In subsequent periods when there is appreciation in value, the value is not recognized as an increase in assets value except where allowed or required by accounting standards. The concept of historical cost is important because market values change so often that allowing reporting of assets and liabilities at current values would distort the whole fabric of accounting, impair comparability and makes accounting information unreliable (Alzoubi, 2012).

It is immediately clear that for financial statements to be meaningful, amounts of dissimilar items must be stated in similar units. Money becomes the obvious choice of “similar units”. By converting different kinds of objects into monetary amounts, they can be dealt with arithmetically. Revenue that has associated expenses within a given accounting period should be reported in the same period. Matching the expense element to the revenue element makes it possible to assess accurately whether a profit or a loss occurred within that period (Chiyachantana, 2013).

Capital Structure Theory

According to Javad, Hamed and Elham (2012) a firm funds its operation with capital raised from varied sources of information. A mix of these various sources is generally referred to as capital structure (CS). The CS has been defined as "that combination of debt and equity that attains the stated managerial goals (i.e.) the maximization of the firm's market value". The optimal CS is also defined as that "combination of debt and equity that minimizes the firm's overall cost of capital. The firm's balance sheet constitutes different proposition of debt instruments, preferred and common stock, which represents the CS of the firm.

The CS is an unsolved problem, which has attracted both academics and practitioners as the objective of financial management is to maximize shareholder's wealth (Elena, Raquel, Pérez, & Clara, 2011). The key issue here is the relationship between CS and firm's value, the firm's value is maximized when cost of capital is minimized. In a long term with the combination of low-cost source of financing (more debt) and expensive source of financing (less stock) in capital structure, a firm reaches a descending (Alexandra, 2006).

Risk Return Theory

The risk return theory developed by Olweny and Shipo in 2011 argues that information asymmetry and financial performance of organization are negatively associated. The risk return theory argues that increasing risks by increasing leverage of the organization leads to higher expected returns. This suggests that if an organization intends to increase its profits by increasing leverage, the equity to asset ratio (capital) has to be reduced. Hence, the risk return theory is relevant to this study, because the performance of organization should be affected by its working capital information.

Critical Review and Gap Identification

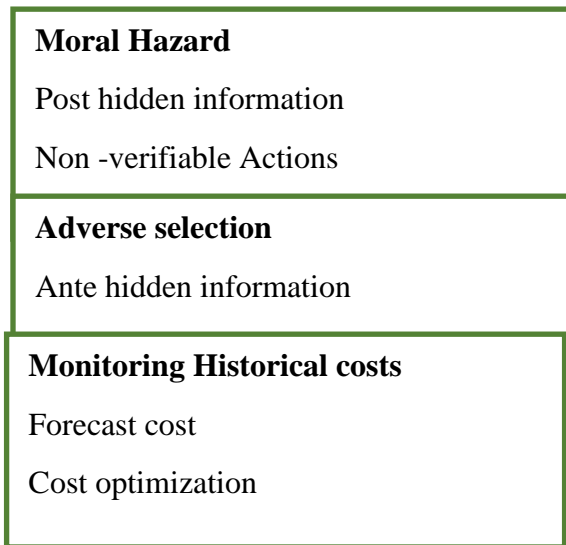
Gheorghe (2007) carried out a research on the importance of information in making decisions. He found that the hidden costs management approach should be included in the short-term administration of the company. Alexandra (2006) carried out a research on the influence information on buyer-supplier negotiations in different power settings. The results founded indicate that the performance disadvantage of less powerful buyers was less pronounced when the buyer had detailed cost information and that this result can be explained by the buyer's negotiation behavior. The studies of Gheorghe (2007) and Alexandra (2006) contributed to academic industry, but they did not use both primary and secondary data, so that they may come out with comparative analysis. Petur (2010) carried out the research on the classification and estimation of information. He conclude that having and maintaining costs of IT has never been as important, and will give companies a competitive edge and he said that knowing the accuracy of the estimate motivates businesses to improve the cost estimates until they have an acceptable granularity. The study of Petur (2010), only focus on cost information technology, but it did not indicate the benefits companies gain from cost information. The above critics indicate that, other studies did not show how asymmetric information should affect commercial banks lending using both primary and secondary sources of data. From the empirical literature, the researcher recognized that different researchers from different countries did not have same understanding on information asymmetry and performance of their case studies. However, studies have been

conducted in different sectors and there are few previous studies which have labored to investigate the concept of information asymmetry and commercial banks' lending in Rwanda. There is lack of academic knowledge on the subject of information asymmetry and commercial banks' lending in Rwanda context which the current study seeks to bridge by availing data on the same subject using Commercial Banks as a case study. Moreover, the researcher also realized a gap where other researchers did not indicate how the performance of companies should be affected by asymmetric information in developing countries like Rwanda.

Conceptual Framework

Independent Variable

Information Asymmetry



Dependent Variable

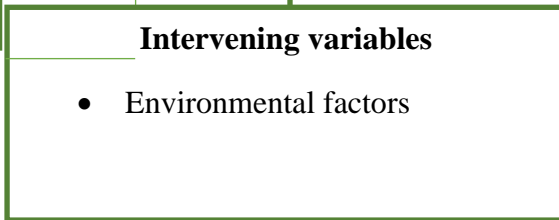
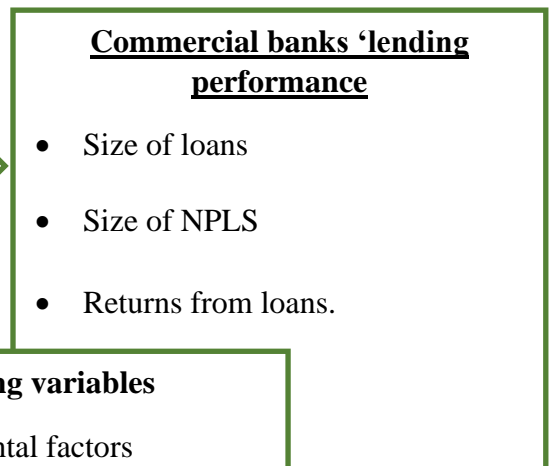


Figure 2.1. Conceptual Framework

Research Methodology

The study followed both correlation and comparative designs, and was both qualitative and quantitative. This is because the researcher quantitatively determined the relationship between variables and linear regression analysis is seen as the most appropriate for application in the study. Quantitative approach will also be used in order to achieve a higher degree of reliability. This study compared the lending performance of commercial banks in Rwanda in relation to the scope of the study. Population is the study object, which may be individuals, group, organizations human and events, or the conditions to which they are exposed. The population under study was comprised of board of directors, executives, top managers, middle managers and lower managers of 10 strong market leadership in banking sector in Rwanda as indicated by Q1 2016(BNR & Researcher, 2016). The total target population will be 931 people as indicated in Table 3.1.

Table 1: Sample frame

Targeted Banks	Target Population	Proportion (%)	Sample
Bank of Kigali	112	12.03	33
Bank Populaire du Rwanda	149	16.00	44
I &M Bank	87	9.34	26
Cogebanque	79	8.49	24
Ecobank	102	10.96	30
KCB	104	11.17	31
Equity	63	6.77	19
GT-Bank	103	11.06	31
Access Bank	68	7.30	20
CraneBank	64	6.87	19
Total	931	100	278

In practice, the sample size to be used in the study was determined based on the expense of data collection, and the need to have sufficient statistical power. The level of precision or sampling error is 5% and 95% confidence level, total population(N) is 931, the sample size is selected using the Yamane formula $= \frac{N}{1+N(e)^2} = \frac{931}{1+931*(0.05)^2} = 278$, and then, n= 278 employees . The researcher's intention was to ensure that the sample includes the elements that are directly relevant to the problem being investigated. The sample size is then proportionately distributed among the 10 commercial banks.

With stratified sampling, the researcher divided the population into separate groups, called strata. Then, a probability sample was drawn from each group, because stratified sampling has advantages over simple random sampling. Therefore, the researcher first classified population into strata. After grouping respondents, respondents were selected, such that everyone has the probability of being selected to be in the sample. The simple random sampling method gave each member an equal opportunity of being chosen. Hence, the study population was stratified into strata (groups) as indicated in the Table 3.1. From these strata, the researcher used systematic random sampling method in each strata to select 278 from 931 people as these enabled the

researcher to give respondents equal opportunity to provide information related to research objectives.

The researcher used both primary and secondary data as practical means of obtaining information related to the research topic. The primary data was obtained using questionnaire and interview. Secondary data were sourced from annual reports of 10 selected commercial banks.

Questionnaire were used to collect primary data during the study, where each respondent was given blank questionnaire and fill it according to the research objectives. Interview guide was used to collect in-depth qualitative data; it was used for board of directors and executives.

Documentary review was also used because it helps the researchers to know and document the kind of additional data needed in the study. This is the second hand data that was specifically collected from respondents. For this study, the researcher used annual reports of selected commercial banks.

The researcher tried as much as possible to ensure that the findings of the research were properly analyzed and interpreted for accurate conclusions. The validity of this study was constructed by the use of sources of evidence during the data collection, the establishment of a chain of evidence which is based on the principle of allowing the external observer to follow the source of any evidence from initial research questions to the conclusions of the case study. Therefore, the researcher first carried out a pilot study in Bank of Kigali by testing questionnaires to 22 employees. And then after, the researcher tested questionnaire and calculated the Cronbach's Alpha coefficient, which was 0.893 and greater than 0.70.

Before the data is entered into the computer for analysis and interpretation, the researcher will code and cross check responses. Both qualitative and quantitative techniques were employed to data manipulation. They included editing, coding and summarizing the data into frequencies and percentages using SPSS so as to aid the researcher to meaningfully describe the distribution of responses using a few indices. Qualitative data obtained were analyzed where opinions, ideas, beliefs, attitudes, statements or arguments were classified into themes, categorized and then discussed within the context of interpretation of research finding. The study variables were measured by designing questions on each variable, where each question (Close ended only) have different response options. Discriminating variables of ratios were analyzed using the Altman 'Z' score in order to arrive at the study findings. An integration of both qualitative and quantitative methods were relied upon in the course of this study. The data further were presented using equations, graphs, and tables, the data were also analyzed using regression analysis techniques to determine the relationship between the variables and the degree to which the independent variable explain the variation in the dependent variable. The data obtained were subjected to various computations and analysis. In the analysis percentages and ratios were done. The data were analyzed using Statistical Packaging for Social Sciences (SPSS) and E-Xcel .Altman Z-Score for private and non-manufacturing companies ; $Z = \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon_t$, where X_1 =Working capital/Total assets, X_2 = Retained Earnings/Total assets, X_3 =Earnings before interest and taxes/Total assets, X_4 =Market value equity/Book value of total debt, and Z =Overall Index, and then β_1 , β_2 , β_3 ,and β_4 are respectively the coefficients of X_1 , X_2 , X_3 and X_4 were predicted using Altman Z-score calculator(Altman, 1993).

Presentation of Findings

This parts focuses on the analysis of research objectives, such as the effect of moral hazard asymmetric information on the performance of commercial banks in Rwanda; the influence of adverse selection asymmetric information to the performance of commercial banks in Rwanda and the correlation between cost forecast asymmetric information and performance of commercial banks in Rwanda.

Table 2: Relationship between moral hazard asymmetric information and performance of bank

		Moral Hazard	Performance
Moral Hazard	Pearson Correlation	1	.980**
	Sig. (2-tailed)		.000
	N	79	79
Performance	Pearson Correlation	.980**	1
	Sig. (2-tailed)	.000	
	N	79	79

** . Correlation is significant at the 0.01 level (2-tailed).

Table 2 indicates relationship between moral hazard asymmetric information and performance of bank. This research used SPSS programm and found that the coefficient r equal to 0.980. The variation of Pearson coefficient correlation is between -1 and 1. According to Pearson, the correlation of 0.980 (98.0%) is categorized as positive correlation and this leads to confirm that there is significant relationship between moral hazard asymmetric information and performance of bank. Therefore, this research found that there is a positive correlation between moral hazard asymmetric information and performance of bank.

Table 3: The correlation between cost forecast asymmetric information and performance of bank

		Cost Forecast	Performance
Cost Forecast	Pearson Correlation	1	.971**
	Sig. (2-tailed)		.000
	N	79	79
Performance	Pearson Correlation	.971**	1
	Sig. (2-tailed)	.000	
	N	79	79

** . Correlation is significant at the 0.01 level (2-tailed).

Table 3 indicates correlation between cost forecast asymmetric information and performance of bank. This research used SPSS programm and found that the coefficient r equal to 0.971. The variation of Pearson coefficient correlation is between -1 and 1. According to Pearson, the correlation of 0.971 (97.1%) is categorized as positive correlation and this leads to confirm that there is significant correlation between cost forecast asymmetric information and performance of bank. Therefore, this research found that there is a positive correlation between cost forecast asymmetric information and performance of bank.

Table 4: Relationship between information asymmetry and performance of bank

		Asymmetric Information	Performance
Asymmetric Information	Pearson Correlation	1	.982**
	Sig. (2-tailed)		.000
	N	79	79
Performance	Pearson Correlation	.982**	1
	Sig. (2-tailed)	.000	
	N	79	79

** . Correlation is significant at the 0.01 level (2-tailed).

Table 4 indicates relationship between information asymmetry and performance of bank. This research used SPSS program and found that the coefficient r equals to 0.982. The variation of Pearson coefficient correlation is between -1 and 1. According to Pearson, the correlation of 0.982 (98.2%) is categorized as positive correlation and this leads to confirm that there is significant relationship between information asymmetry and performance of bank. Therefore, this research found that there is a positive relationship between information asymmetry and performance of bank.

The analysis of Performance of Commercial banks Using Altman Z-score

This section indicates the analysis of performance of selected commercial banks, such bank of Kigali and BPR, as indicated into tables. The test of performance of selected commercial banks was testing using Altman Z-Score where; $Z = \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \dots + \varepsilon_t$, X_1 = Working capital/Total assets, X_2 = Retained Earnings/Total assets, X_3 = Earnings before interest and taxes/Total assets, X_4 = Market value equity/Book value of total debt, X_5 = Sales to Total Assets and Z = Overall Index, and then $\beta_1, \beta_2, \beta_3, \beta_4$ and β_5 are respectively the coefficients of X_1, X_2, X_3, X_4 and X_5 will be predicted using Altman Z-score calculator (Altman, 1993). According to Altman (2000), for commercial banks $Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5$. Hence, $\beta_1 = 1.2, \beta_2 = 1.4, \beta_3 = 3.3, \beta_4 = 0.6$ and $\beta_5 = 1.0$.

Table 5: Analysis of bank of Kigali financial performance in 2014

Altman Factors	Value of factors "000 Frws"	Five ratio	Value of ratios	Z Score value
Working Capital(WC)	33,226,114	WC/TA	0.69	Z = 5.4
Retained Earnings (RE)	20,359,836	RE/TA	0.42	
EBIT	22,758,705	EBIT/TA	0.47	
Sales	51,909,827	Sales/ TA	1.08	
Market Value Equity (MVE)	89,547,734	MVE/BVD	2.24	
Total Asset (TA)	48,260,796.4			
Book value of total debt (BVD)	39,929,967			

Source: Bank of Kigali, 2014

Table 5 presents test for bank of Kigali performance in 2014, where $Z = 1.2 * 0.69 + 1.4 * 0.42 + 3.3 * 0.47 + 0.6 * 2.2 + 1.0 * 0.108 = 5.4$. This value indicates that, there was very healthy performance of bank of Kigali in 2014.

Table 6: Analysis of bank of Kigali financial performance in 2013

Altman Factors	Value of factors	Five ratios	Value of ratios	Z Score value
Working Capital	74,126,523	WC/TA =	1.755055171	Z = 6.18
Retained Earnings	8,947,377	RE/TA =	0.211842396	
EBIT	18,756,236	EBIT/TA=	0.444081654	
Sales	45,210,752	Sales/ TA=	1.070431485	
Market value equity	70,763,684	MVE/BVD=	2.069687331	
Total asset	42,236,007			
Book value of total debt	34,190,519			

Source: Bank of Kigali, 2013

Table 6 presents test for bank of Kigali performance in 2013, $Z = 1.2 * 1.755 + 1.4 * 0.211 + 3.3 * 0.444 + 0.6 * 2.070 + 1.0 * 0.107 = 6.18$. This value indicates that, there was very healthy performance of bank of Kigali in 2013.

Table 7: Analysis of bank of Kigali financial performance in 2012

Altman Factors	Value of factors	Five ratios	Value of ratios	Z Score value
Working Capital	-16,822,722	WC/TA	-0.521159341	Z = 2.78
Retained Earnings	6,893,076	RE/TA	0.213543976	
EBIT	14,466,909	EBIT/TA	0.448177457	
Sales	32,069,789	Sales/ TA	0.993505695	
Market value equity	63, 107,293	MVE/BVD	10.61522734	
Total asset	32,279,421			
Book value of total debt	59,449,780			

Source: Bank of Kigali, 2012

Table 7 presents test for bank of Kigali performance in 2012, $Z = 1.2 * (-0.52) + 1.4 * 0.21 + 3.3 * 0.45 + 0.6 * 10.615 + 1.0 * 0.99 = 2.78$. This value indicates that, there was healthy performance of bank of Kigali in 2013. In comparison of results of 2014, 2013 and 2012, this study revealed that bank of Kigali has a positive financial performance.

Table 8: Analysis of BPR financial performance in 2014

Altman Factors	Value of factors "000 Frws"	Five ratios	Value of ratios	Z Score value
Working Capital	-9,854,894	WC/TA	-0.020420082	2.73
Retained Earnings	-2,222,237	RE/TA	-0.004604642	
EBIT	1,467,694	EBIT/TA	0.003041172	
Market value equity	15,880,898	MVE/BVD	4.523688774	
Sales	19,544,228	Sales/ TA	0.04049711	
Total asset	482,607,964			
Book value of total debt	3,510,608			

Source: BPR, 2014

Table 8 presents test for BPR performance in 2014, $Z = 1.2 * -0.020 + 1.4 * -0.005 + 3.3 * 0.003 + 0.6 * 4.523 + 1.0 * 0.04 = 2.73$. This value indicates that, there was healthy performance of BPR in 2014.

Table 9: Analysis of BPR financial performance in 2013

Altman Factors	Value of factors "000 Frws"	Five ratios	Value of ratios	Z Score value
Working Capital	11,639,744	WC/TA	0.027558817	1.17
Retained Earnings	-3,317,644	RE/TA	-0.007855013	
EBIT	-6,839,612	EBIT/TA	-0.016193794	
Market value equity	13,781,375	MVE/BVD	1.9262414	
Sales	19,989,207	Sales/ TA	0.047327407	
Total asset	422,360,073			
Book value of total debt	7,154,542			

Source: BPR, 2013

Table 9 presents analysis of BPR financial performance in 2013, $Z = 1.2 * 0.028 + 1.4 * -0.008 + 3.3 * -0.016 + 0.6 * 1.93 + 1.0 * 0.047 = 1.17$. This value indicates that, there was weak performance of BPR in 2013.

Table 10: Analysis of BPR financial performance in 2012 “000 Frws”

Altman Factors	Value of factors	Five ratios	Value of ratios	Z Score value
Working Capital	-10,163,457	WC/TA	-0.031485871	1.48
Retained Earnings	-82,351	RE/TA	-0.000255119	
EBIT	-229,558	EBIT/TA	-0.000711159	
Market value equity	18,947,887	MVE/BVD	2.418211868	
Sales	22,574,358	Sales/ TA	0.069934209	
Total asset	322,794,214			
Book value of total debt	7,835,495			

Source: BPR, 2012

Table 10 presents analysis of BPR financial performance in 2012, $Z = 1.2 * 0.028 + 1.4 * -0.008 + 3.3 * -0.016 + 0.6 * 1.93 + 1.0 * 0.047 = 1.48$. This value indicates that, there was weak performance of BPR in 2012. This results also confirmed by the annual reports of BPR in 2012.

Conclusions

This research concluded that bank focuses on the analysis of asymmetric information so that it can compare of its benefits to the stakeholders. This research concluded that bank makes related information comparable between different items in order to minimize asymmetric information in the organization .Therefore this is the most important tool available to financial analysts of bank for their work. bank analysis its performance using shareholders. This implies that bank maximize its performance through optimization of its price, variable cost per unit and price.

This study also concluded that the performance disadvantage of less powerful buyers was less pronounced in bank when the buyer had detailed cost information and that this result can be explained by the buyer’s negotiation behavior. It is also concluded that decision to introduce to financial management information needs to be accompanied by strong commitment, sufficient manpower and financial resources, widespread internal support, and an agenda for effective communication.

This study also concluded that, financial markets create their own incentives to acquire and process information for listed firms. The larger and more liquid financial markets become the more incentive market participants have to collect information about these firms. However, because information is quickly revealed in financial markets through posted prices, there may be less of an incentive to use private resources to acquire information. In financial markets information is aggregated and disseminated through published prices, which means that agents who do not undertake the costly process of ex ante screening and post monitoring can freely observe the information obtained by other investors as reflected in financial prices. This research concluded that management of information asymmetry influence performance of bank.

Recommendations

Even if this study found that bank used different elements in terms of asymmetric information management, it focused only on its performance in consecutive period rather than performance

with other companies in the same industry. Hence, bank should use comparative analysis using comparison with other companies in the commercial banks sectors.

Basing on the findings related to the problems as well as the theoretical aspects presented in the literature review this research recommends commercial banks of Rwanda to speed up the campaign to focus on the management of asymmetric information as among the best tool to the profitability of commercial banks. This research also recommended that, the employees are considered as a very important requirement to the operation and the procedures in every organization, so bank have to improve the skills of the employees working in the management of asymmetric information.

The researcher recommended commercial banks that, management of bank must have interdependent relationships that management needs to perform its activities. Since commercial banks contribute to the highest cost among the related elements in cost of raw material, the improvement of profitability efficiency could change the overall profitability.

This research focused on asymmetric information and performance of commercial banks. Future researchers should focus on the contribution of asymmetric information in public institutions, the contribution of asymmetric information to shareholders retention in public company listed under stock exchange. Future researchers should also focus on the analysis of cost in a broad sense that might help to integrate the advantages from different application cases to overcome their current disadvantage. They should also verify if the review of asymmetric information systems provides a clearer notion on performance applications in cost control activities. Lastly, the development of commercial banks is still vigorous in the following decades and the asymmetric information concepts might be applied in more fields. The other researchers should also analyze the different factors concerning asymmetric information policies that should affect the performance of listed commercial banks.

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