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# Development of Financial Performance Assessment Indices for Bank Performance Rating in Ghana

By Mohammed Aidoo & Farouq Sessah Mensah
*Kwame Nkrumah University*

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# Development of Financial Performance Assessment Indices for Bank Performance Rating in Ghana

Mohammed Aidoo [α] & Farouq Sessah Mensah [σ]

*Abstract-* Financial ratio analysis has been the ultimate tool for assessing the financial performance of organizations. However, given the increasing complexities in business operations in recent times, there is increasing shift to alternative methods that takes a multi-dimensional approach and combine several indicators to assess the financial performance of an organization. This study, therefore, aims at establishing Financial Performance Assessment Indices for evaluating banks performance in Ghana. Secondary data which spans over a 5-year period, covering 14 financial ratios on 24 registered banks in Ghana, was extracted from the annual Ghana Banking Survey reports. Analysing the data using descriptive statistics, ANOVA, and Principal Component Analysis technique, the study confirmed the existence of correlation among sets of financial ratios. The study also identified four basic Financial Performance Assessment Indices; Share of Industry Asset Index, Bank Profitability Index, Return on Bank Loan Index, and Liquidity Index. Among these indices, the Share of Industry Asset index and the Bank Profitability index constitute the most important for assessing the financial performance of banking institutions in Ghana. Ranking the selected banks concerning the identified indices revealed that, banks with outstanding performance were SCB, TTB, and Barclays bank while ADB and GCB recorded the least financial performance. The indices can assist any organizations, investors, and individuals to undertake overall financial performance assessment and ranking of the banking institutions in Ghana.

## I. Introduction

### *a) Background to the Study*

The banking sector constitutes a fundamental component of a country's financial system. It plays a significant role in the economic growth and financial position. The banks act as a financial intermediary that provide an efficient means of transferring cash from cash-surpluses individuals and institutions to cash-deficit individuals. In the absence of financial markets, an individual who has cash surplus would have to search for an individual or business that has a cash deficit and arrange to loan the surplus cash to the deficit organization. Because of the difficulty of such direct transactions, institutions exist to acquire cash surpluses and lend them to individuals and institutions that face a deficit (GSE, 2010). Thus, the financial sector mobilizes savings and allocates credit to needy members. It enables firms and households to cope with economic uncertainties by hedging, pooling, sharing, and pricing risks. By this means, it facilitates the flow of funds from the ultimate lenders to the borrowers. The flow of funds leads to improvement in both the quantity and quality of real investments, increasing income per capita and raising the standard of living (Harker & Zenios, 2009).

Today the Banking institutions face a dynamic, fast-paced, competitive environment at the global scale. The increasing liberalization of domestic regulations in most developed and developing countries, and the intensified competition at the global market, fuel these changes. Additionally, the rapid innovation in new financial instruments, changing consumer demands and preferences, and the explosive growth in information technology contributed to the changes. Thus, the banking sector operations have taken a multi-dimensional structure with complex delivery channels, coupled with constant pressures for innovative products and services to survive and gain competitive advantage (Harker & Zenios, 2009).

In Ghana, the financial environment has changed dramatically since the 1980s. Beginning with the Structural Adjustment Program of the early 1980s and accelerating rapidly, there had been a deregulation of the financial services industry. The Financial Sector Assessment Program (FSAP) introduced in 2001 and updated in 2003, and the Financial Sector Adjustment Program (FINSAP) helped to remove legislative and administrative inefficiencies in the banking sector. These led to the removal of interest rate controls and sector allocation of lending, resulting in tremendous growth and competition in the banking industry (Price water house Coopers & Ghana Association of Bankers report, 2005).

As a means of enhancing the legal and regulatory framework, the Bank of Ghana (BOG) is established as the central bank to act as regulatory authority in all matters relating to banking and non-banking business. They are tasked with the purpose of achieving a sound and an efficient banking system in

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the interest of banks' clients and the economy as a whole (Bank of Ghana, 2007).

Despite the internal efforts by the Bank of Ghana to strengthen the financial sector, it is highly exposed to the global occurrences. In the event of the Global Financial Crisis in 2008, the emerging markets with relatively developed financial systems were affected by their integration with a global market. Through their links, Ghana and other African countries such as Nigeria, Kenya, and South Africa had their share of the consequences, mainly falling equity markets, reversal of capital flows, rising inflation and pressures on exchange rates (Ghana Banking Survey, 2009). The recent global financial crisis has intensified the awareness of the need to check the health and stability of the sector and hence the financial institutions.

### *b) Statement of the Problem*

The Ghanaian banking industry constitutes an important aspect of the financial sector of the economy. Hence, any impact on the industry affects the economy and the financial position of the country. This situation influence the decision of foreign direct investors and the domestic investors as to how to invest their capital. There is, therefore, the need for regular check-up or performance review of the financial institutions to maintain and protect the confidence of investors (depositors, lenders, shareholders and other stakeholders). Furthermore, the gravity of the importance of a sound sector has increased tremendously after the international turmoil of the second half of the 1990s. Monetary authorities such as International Monetary Fund (IMF) and international financial institutions like the World Bank have underpinned the need for a healthy sector to build up the confidence of private sector in the liberalized system. Member countries have therefore been tasked to undertake reforms and conduct regular health check-up of the Financial Institutions (Baral, 2006).

The health of a financial sector depends on the health of the individual Financial Institutions and they are reflected in their performance over a period. Their performance is influenced by some factors which are intertwined. Regularly, in the quest to gain a competitive edge in the industry, undertake a review of their performance for informed decision making. However, such assessment has often been a single gap analysis as it relies on accounting ratios at a given time on specific areas of performance of services, product or process. There is, therefore, the need for a multidimensional approach to analysis of the financial performance of the banking industry taking into consideration the several factors that come into play in the industry.

The need for a multi-dimensional approach to financial performance assessment is widely utilized in the developed economies and they have been intensified since the recent global crunch and the increasing complexities on banking operations. Traditionally accounting methods that make use of ratios have been employed for assessing bank performance (Ncube, 2009). However, the limitations of this method coupled with advances in management sciences have led to the development of alternate methods that consider the influence of combined several financial ratios and other factors on firm performance (Berger & Humphrey, 1997). In Ghana, there is less application of such multivariate methods in the assessment and ranking of the performance of the financial institutions.

### *c) Purpose of the Study*

The purpose of the study was to establish financial performance assessment indices for evaluating banks performance in Ghana.

### *d) Research Questions*

The research question is whether banking performance indices can be developed and used for inter-bank performance analysis and ranking? The following research questions were addressed in the study:

1. Are there basic areas of the banking financial performance that could be developed into indices for comparative evaluation purposes?
2. Are there appropriate ratios along the identified dimensions that can be relied upon to develop indices?
3. To what extent can the established indices be used for inter-bank financial performance analysis in Ghana?
4. What has been the pattern of the financial performance of the Ghanaian banking industry?

### *e) Significance of the Study*

The study, which aims at identifying the key and most relevant indicators for assessing banks financial performance in Ghana, will ease bank managers and investors' evaluation of banks performance. It will also inform bank management about financial performance position of their bank concerning their competitors. Again, the study, which examines the pattern of financial performance of the banking industry over a time frame provides a broader and in-depth information for all bank's stakeholders. Findings from the study will indicate any changes and direction of growth in the industry. The result from the study could serve as a clue for future prediction.

With the increasing competition in the industry, the findings and recommendations will guide the bank institutions to develop appropriate policies and strategies to remain competitive in the market. Bank management can rely on the report as part of their industry and economic review during their SWOT (identification of Strength, Weaknesses, Opportunities, and, Threat of an organization) analysis. Furthermore, Investors, on the other hand, will know how the industry is faring and build their expectation model appropriately; that is, the expected returns on their investment and strategies to invest. The findings will also aid banks regulation and government policy formulation about the financial stability of the economy, thereby leading to a general improvement in the industry.

## II. Methodology

*a) Research Design*

The study takes the form of applied research with explanatory research design. By the applied research, existing theories and principles are adopted and used in addressing observed phenomena. Thus, this study contributes to the empirical evidence of studies in the development of indices for financial performance. Explanatory research design is to help establish the causal relationship which in this study is about the correlation or the amalgamation of the ratios to address a specific aspect of the banking financial performance.

*b) Sources of Data and Method of Data Collection*

The study relies mainly on a pool of secondary data extracted from the Ghana Banking Survey reports published annually. They are jointly produced by Price Water House Coopers (PwC) and the Ghana Association of Bankers (GAB). Information in the annual reports of the selected banks was also accessed. The data covers twenty-four (24) registered banks, encompassing twelve (12) Ghanaian and twelve (12) Non-Ghanaian banks operating in Ghana. It spans over a 5-year period from 2003 to 2007, all covering about fourteen (14) computed ratios.

The data is collected by identifying the various ratios, outlining it in MS. Excel and entering the values from the yearly annual reports. The data is then exported to the SPSS for the actual data analysis.

## III. Results and Discussion

*a) Correlation Analysis of the Financial Ratios*

Performing correlational analysis on the financial ratios is of much importance in this study. By this analysis, possible structural relationships the variables are analysed. The analysis indicate of the extent to which data reduction could be achieved through groupings of related variables into a new set of reduced variables. Table 3.1 gives the summary of the correlation matrix on the financial ratios (variables) that were used to examine the financial performance of the banking industry.

*Table 3.1:* Correlation Matrix

| | SID | SIOA | SITA | NLLP | NS | NIM | ROA | ROE | LPP | LF/TD | TA/E | DP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SID | 1.00 | | | | | | | | | | | |
| SIOA | 0.97 | 1.00 | | | | | | | | | | |
| SITA | 0.97 | 1.00 | 1.00 | | | | | | | | | |
| LLP | -0.18 | -0.16 | -0.16 | 1.00 | | | | | | | | |
| NS | 0.08 | 0.09 | 0.09 | 0.24 | 1.00 | | | | | | | |
| NIM | 0.28 | 0.26 | 0.27 | -0.11 | 0.43 | 1.00 | | | | | | |
| ROA | 0.46 | 0.49 | 0.48 | -0.08 | 0.39 | 0.38 | 1.00 | | | | | |
| ROE | 0.54 | 0.55 | 0.55 | -0.24 | 0.26 | 0.33 | 0.80 | 1.00 | | | | |
| LPP | -0.01 | 0.01 | 0.01 | 0.02 | 0.81 | 0.40 | 0.45 | 0.35 | 1.00 | | | |
| LF/TD | 0.42 | 0.36 | 0.36 | -0.15 | 0.00 | 0.10 | 0.15 | 0.26 | 0.01 | 1.00 | | |
| TA/E | -0.01 | -0.04 | -0.04 | -0.14 | 0.19 | -0.22 | 0.20 | 0.25 | 0.11 | 0.07 | 1.00 | |
| DP | 0.57 | 0.61 | 0.61 | -0.22 | -0.01 | 0.27 | 0.45 | 0.52 | -0.02 | 0.15 | -0.10 | 1.00 |

The study limited the correlation coefficient to a cut-off point of 0.25; that is, any correlation figure of 0.25 or more is deemed significant for analysis. This low cut-off point is used to ensure that all relevant information were adequately covered for assessment in the next chapter. Figures from the correlation table show that there exists some level of interdependencies among the financial ratios. The share of industry deposits (SID), the share of industry operating asset (SIOA), and the share of industry total asset (SITA) are highly positively correlated among themselves. The high correlations imply that an increase in deposits and advances are highly likely to results in increase in operating asset and total assets. Thus, banks with a large share of industry deposit tend to have large share of the industry operating assets and total assets.

The Return on Asset (ROA), Return on Equity (ROE), Dividend Payment ratio (DP), and the Net Interest-Margin ratios (NIM) are highly positively correlated among themselves, and each is positively correlated with the industry share. That is, a change in Return on Asset (ROA), Return on Equity (ROE) or Net

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Interest-Margin (NIM) implies a corresponding change in the other. Again, banks with large asset size are highly likely to generate higher ROA, ROE and or NIM. Other higher positive correlations can be noticed between Net Spread (NS), Net Interest-Margin (NIM) and Loan Portfolio Profitability ratio (LPP). As can be seen in the correlation analysis table, profit made on loan portfolio is highly influenced by Net Spread as indicated by the highly positive correlation figure of 0.8. That is, there is a high return on Loan Portfolios when there is an increase in Net Spread (NS) and vice versa. Still judging by the correlation figures, Table 1 indicates that the net spread influences Net Interest-Margin (NIM). It can also be observed that the ratio of Liquid Fund to Total Deposits (LF/TD), which is a measure of the liquidity position of an institution, is highly positively correlated with only bank's shares of the industry. The correlation indicates that changes in the liquidity position of a bank are influenced by changes in the bank's share in the industry. Banks with huge assets are highly likely to establish a strong liquidity position and therefore able to settle its short terms obligations as and when they occur.

The ratio Total Asset to Equity (TA/E), which measures the financial leverage of an institution, appears to be independent of all other ratios as none of the correlation coefficients between Total Asset to Equity (TA/E) and the other ratios are higher than the cut-off point.

*b) Variance-Covariance Analysis of the Financial Ratios*

Since the financial ratios measure banks' performances, analysis of the variance-covariance matrix is a direct assessment of the variability in the financial performance of the banking industry. Table 3.2 gives a summary of the covariance output.

*Table 3.2:* Variance-Covariance Matrix of the Financial Ratios

| | SID | SIOA | SITA | LLP | NS | NIM | ROE | ROE | LPP | LF/TD | TA/E | DP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SID | 29.2 | | | | | | | | | | | |
| SIOA | 24.6 | 25.9 | | | | | | | | | | |
| SITA | 25.8 | 24.3 | 24.1 | | | | | | | | | |
| LLP | -2.0 | -1.2 | -1.3 | 5.2 | | | | | | | | |
| NS | 1.4 | 0.9 | 0.9 | 3.3 | 36.2 | | | | | | | |
| NIM | 5.4 | 5.0 | 5.0 | -0.7 | 3.4 | 6.3 | | | | | | |
| ROA | 7.0 | 6.8 | 6.7 | -0.6 | 4.2 | 3.3 | 9.6 | | | | | |
| ROE | 53.8 | 50.0 | 49.6 | -10.0 | 20.1 | 19.2 | 49.1 | 422.9 | | | | |
| LPP | -2.3 | -2.7 | -2.5 | -0.2 | 27.2 | 4.6 | 4.6 | 29.9 | 31.0 | | | |
| LF/TD | 9.8 | 7.8 | 7.9 | -1.9 | -1.1 | 2.2 | 2.2 | 23.7 | -0.8 | 38.7 | | |
| TA/E | -1.0 | -1.1 | -1.1 | -1.0 | -2.6 | 1.8 | 1.8 | 19.3 | 4.4 | 1.5 | 22.9 | |
| DP | 88.9 | 84.3 | 84.5 | -16.8 | -9.1 | 25.8 | 38.5 | 281.6 | -8.8 | 20.9 | -13.1 | 767.7 |

In Table 3.2, figures along the leading diagonal constitute the variance, and the rest forms the covariance of the ratios. Observably, each ratio exhibits some level of variation and hence, variation in the performance of the institutions. The Return on Equity (ROE) and Dividend Payment (DP) ratios can be observed to have the highest variance, which indicates that, there are substantial differences in the financial performance of banks in areas in which these ratios measure. On the other hand, the variance of New Loan Loss Provision (NLP), Net Interest-Margin (NIM), and Return on Asset (ROA) are all small compared to the other ratios' variance. This implies thata majority of the institutions performed keenly in the areas in which these were assessed.

Another observation from Table 3.2 is that a number of the ratios have high covariance values which suggest that, a combination of two or more of the ratios can account for more variations in evaluating banks' financial performance. That is, there is a high difference of obtaining accurate results when evaluating bank performance with two or more financial ratios than reliance on the results of a single ratio.

*c) Bank's Share of Industry Asset*

The graph in Figure 3.1 is an illustration of the changes in the average percentage share of the industry's assets from the year 2003 to 2007.

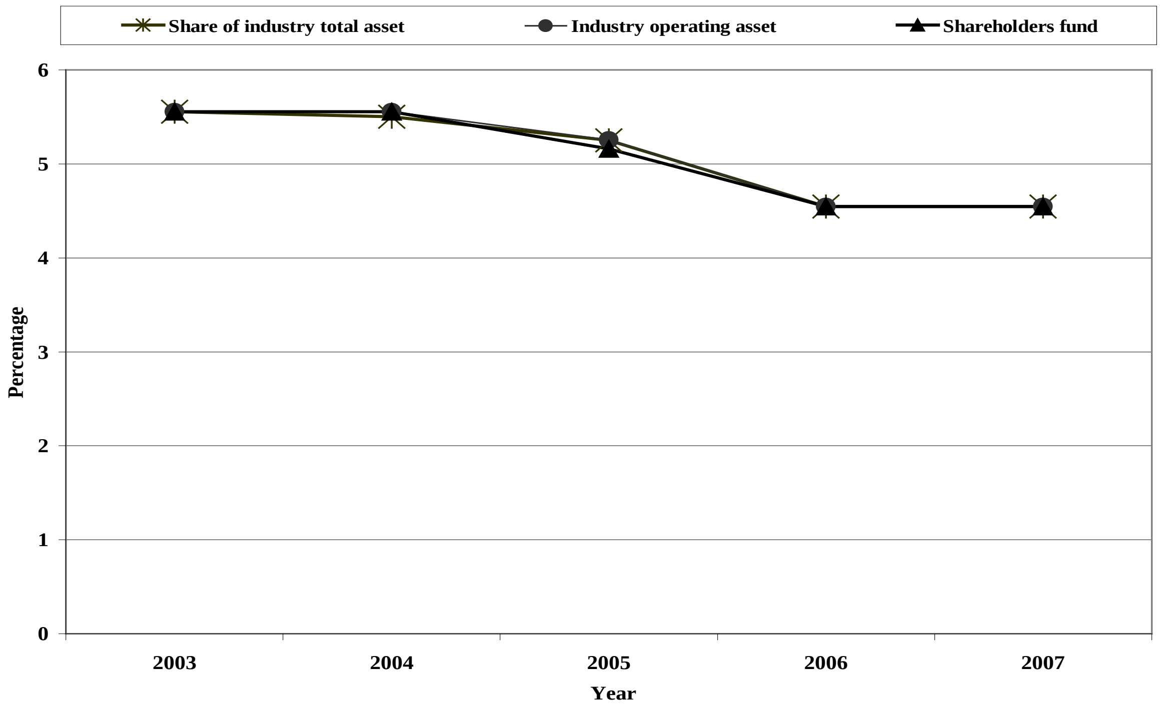


*Figure 3.1:* Trend (in Mean Percentage) of Individual Banks' share of Industry Asset from 2003 to 2007

It is observed from the line graphs in Figure 3.1 that there is a consistent decline in the percentage share of the industry assets owned by individual banks. The average percentage share of the industry assets that belong to individual banks has decreased from about 5.6% in 2003 to 4.5% in 2007. This is an indication that, banks' percentage share of the industry assets tends to be shrinking as the year progresses.

A further exploration was made into the growth of the industry concerning the asset. Assessment based on the industry operating assets over the period under review is as summarized in Figure 3.2 below:

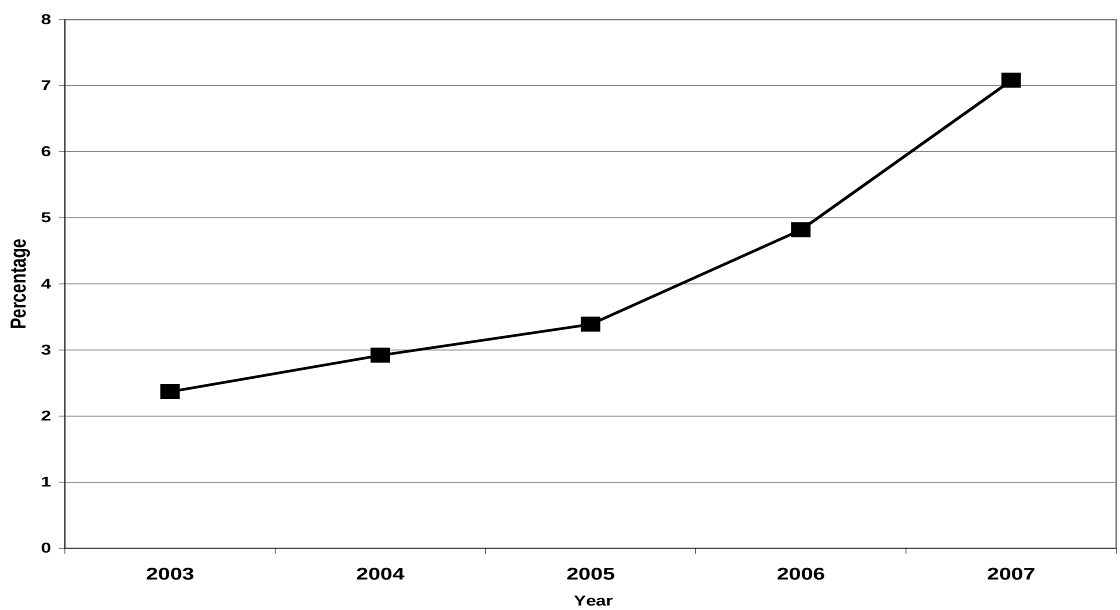


*Figure 3.2:* Average Percentage Growth of the Industry Operating Asset from 2003 to 2007

A noticeable observation from Figure 3.2 is that, the industry realized a consistent increase in its operating assets from 2.4% in 2003 7.1% in 2007. That is, the individual bank institutions that constitute the industry have increased their asset base. A similar analysis concerning the industry deposits resulted in similar growth in the industry. A summarized output of the industry deposit analysis is illustrated in Figure 3.3.

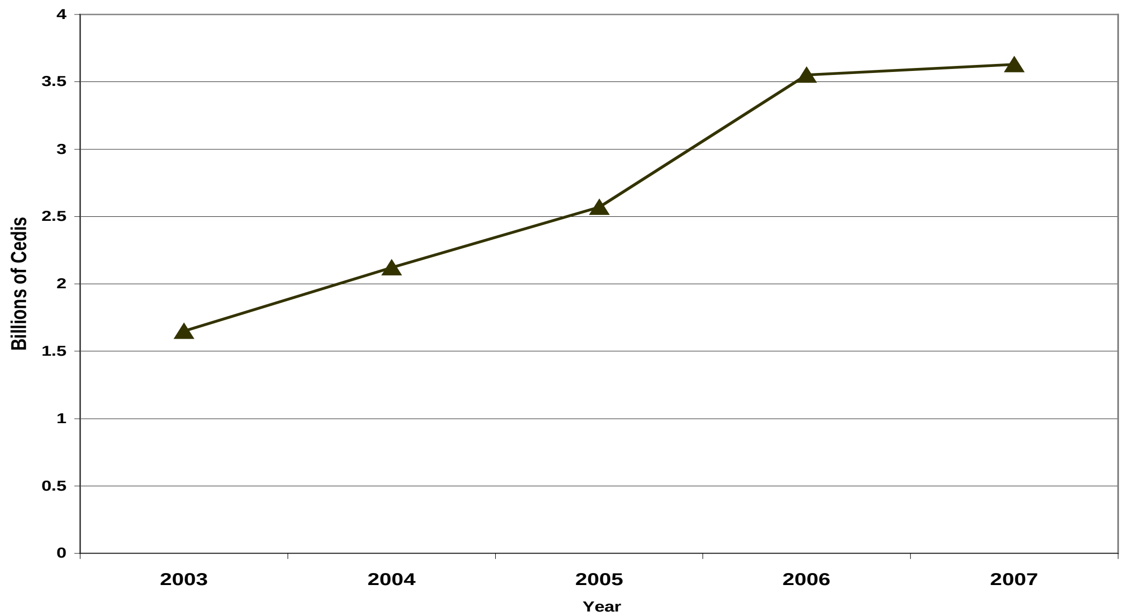


*Figure 3.3:* Average Growth (in billions of cedis) of the Industry Deposits from 2003 to 2007

Contrary to the shrinking of individual banks' share of the industry asset, Figure 3.2 and 3.3 shows that, the industry's assets have increased significantly from 2003 to 2007. This means that, although individual banks are continually increasing their asset size, their percentage share in the industry gradually decline.

*d) Return on Asset (ROA), Return on Equity (ROE), Net Interest-Margin (NIM) and Net Spread (NS)*

This combination of ratios tells the extent to which profits or returns are made on the assets owned by institutions. Higher values suggest higher returns and vice versa. Figure 4.4 is a graph of the means of the ratios for each year, depicting the trend in the financial performance of the banking industry concerning the ratios.

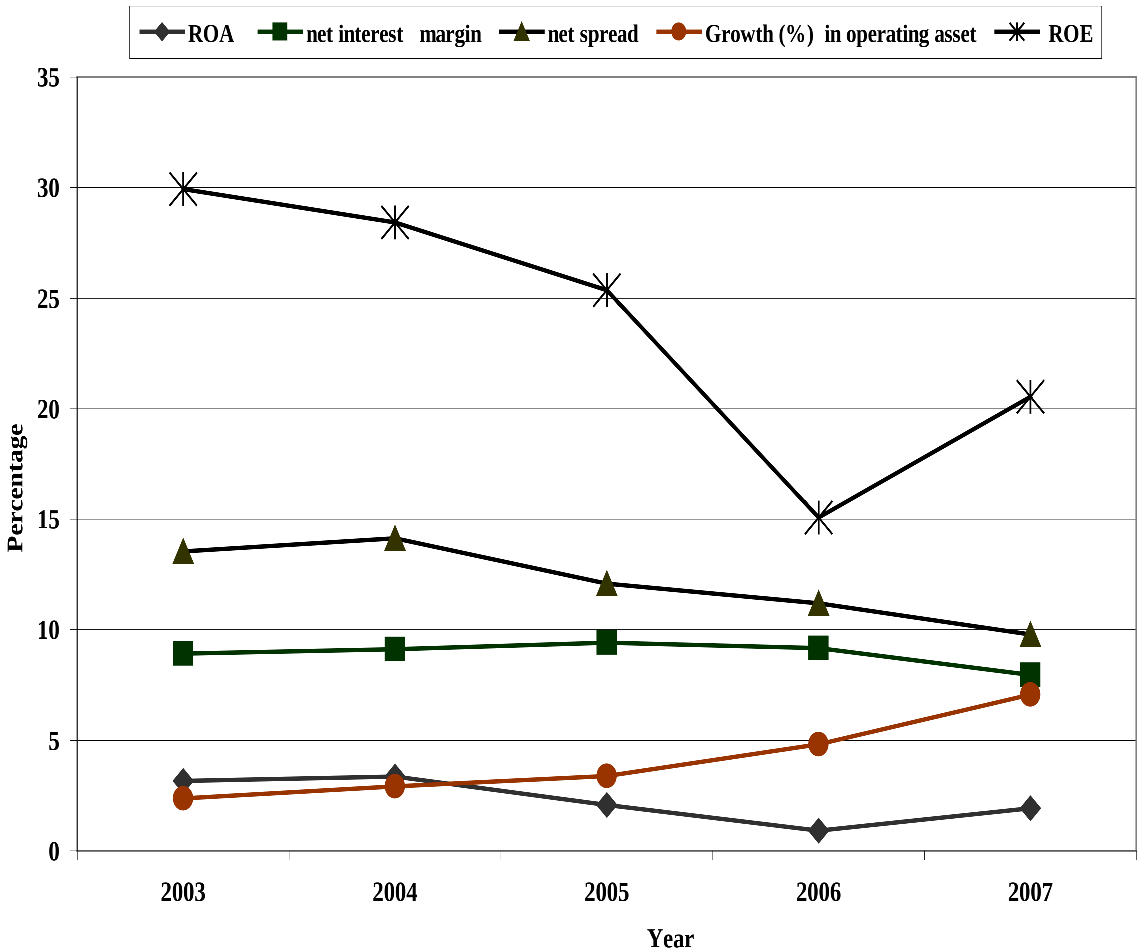


*Figure 3.4:* Trend (in Mean Percentage) in the Industry's ROA, ROE, Net Interest-Margin, Net Spread from 2003 to 2007

Observation from Figure 3.4 is that figures of ROA and ROE decrease significantly as the year progresses. That is, the net income generated per cedi of an asset owned by a bank reduces for subsequent years. Specifically, the year 2006 experienced the worst output of ROA and ROE. In most of the years, the figures of ROE are about four to five times higher than that of ROA. Net interest or profit margin has however been quite stable though it shows a gradual decline.

The decline in the figures of ROA and ROE is largely attributed to the increase in the growth of the industry's assets without a corresponding increase in profit levels, due mainly to narrowing net spreads. This is confirmed by the high decline in the net spread from 13.54% in 2003 to 9.79% in 2007, and net interest margin from 8.92% in 2003 to 7.96% in 2007, as well as the tremendous increase in the growth of the industry's operating asset (Figure 3.2) over the period from 2.38% in 2003 to 7.08% in 2007.

Table 3.3 gives the summary of the distribution of the ratios-ROA, ROE, Net Interest Margin (NIM) and Net Spread (NS).

*Table 3.3:* Distribution of ROA, ROE and Net Interest-Margin

| Financial Ratio | Descriptive Statistics | Year | | | | |
|---|---|---|---|---|---|---|
| | | 2003 | 2004 | 2005 | 2006 | 2007 |
| ROA | Skewness | 0.03 | -0.12 | -2.93 | -2.11 | -2.00 |
| | Kurtosis | 0.53 | -0.75 | 10.96 | 4.93 | 6.53 |
| Net Interest-Margin | Skewness | 0.07 | 0.16 | -0.54 | 1.17 | -0.53 |
| | Kurtosis | -0.87 | -1.03 | 0.64 | 2.66 | -0.02 |
| ROE | Skewness | 0.54 | -1.30 | 0.66 | -0.48 | -0.31 |
| | Kurtosis | -1.18 | 3.65 | -0.93 | -0.29 | 0.47 |
| Net Spread | Skewness | -0.29 | -0.19 | -0.46 | -0.22 | -0.82 |
| | Kurtosis | 3.17 | 0.51 | 1.45 | -0.57 | 3.57 |

Observation from Table 3.3 is that, the distribution of the ratio figures is mostly negatively skewed and some tend to be more negative (especially net spread) as the year goes by. The skewness indicates that a majority of the banks' figures of ROA, ROE, NS, and NIM is lower than the recorded averages. The industry was therefore handicapped in generating higher returns on shareholders' investment as the year progresses. Additionally, the general realization of positive kurtosis for the ratio figures for each year suggests that, recorded figures are close to each other, indicating that, the industry has been keenly competitive over the years.

*e) Loan Portfolio Profitability Ratio (LPP), New Loan Loss Provisions (NLP)*

Figure 3.5 is a graph of the means of the financial ratios- Loan Portfolio Profitability and New Loan Loss Provision ratio. It illustrates the trends in these ratios as the year progresses.

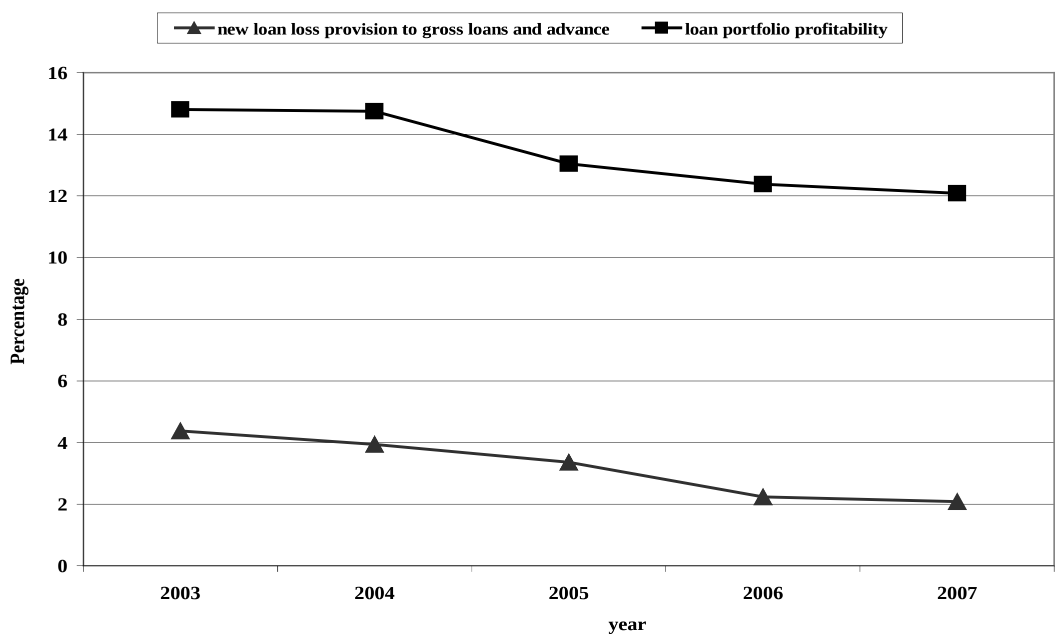


*Figure 3.5:* Trends (in Mean Percentage) in the Industry's Loan Portfolio Profitability and New Loan Loss Provision from 2003 to 2007

Figures of the Loan Loss Provision to Gross Loans ratio, and the Loan Portfolio Profitability ratio as shown in Figure 4.5 decreased over the years. Since the loan loss provisions depend on the probability of loans becoming non-performing, higher provisions indicate a higher probability of non-performing assets. Therefore, the observed decreasing figures of the loan loss provision are a positive indication which implies that the industry is improving on its loan management. The decrease in the Loan Portfolio Profitability ratio, on the other hand, does not help well for the industry. It is an indication that the institutions in the industry are

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becoming weaker in generating higher returns on their loan asset. However, it can be noticed that the gain on loans for each year is more than three times the loan loss provisions.

*f) Liquid Fund to Total Deposits Ratio (LF/TD)*

A firm's liquidity position tells the extent to which it can meet its short - term obligations as and when they fall due. The liquid fund/total deposit ratio is used to evaluate the liquidity position of the selected banks. The result of the ratio used to assess the liquidity position is as shown in table 3.4 below:

*Table 3.4:* Changes in Liquid Fund to Total Deposit Ratio

| Financial Ratio | Descriptive Statistics | Year | | | | |
|---|---|---|---|---|---|---|
| | | 2003 | 2004 | 2005 | 2006 | 2007 |
| Liquid Fund to Total Deposit (LF/TD) (x) | Minimum | 0.62 | 0.60 | 0.46 | 0.00 | 0.32 |
| | Maximum | 2.24 | 1.84 | 1.21 | 46.00 | 44.00 |
| | Mean | 1.03 | 0.96 | 0.74 | 2.95 | 2.58 |
| | Skewness | 1.96 | 1.97 | 0.61 | 4.47 | 4.69 |

The mean of the liquid fund to total deposit ratio fell from 1.03x in 2003 to 0.74x in 2005 and gradually rose to 2.58x in 2007. That is the industry liquidity position gradually weakened from 2003 to 2005 and then revitalized from then to 2007. The strength of the liquidity position in 2007 is more than twice that of 2003. This implies that, for the year 2006 and 2007, most banks invested their deposits in low yielding assets, and also kept a higher proportion of them as a liquid asset to cover any likely matured deposits, while at the beginning of the year under review, some banks were giving out more loans. The highly increasing positive skewness of the liquid fund to total deposit ratio figures is an indication that, more banks are improving on their liquidity position; the ability to settle short-term obligations.

*g) Total Asset to Equity Ratio (TA/E)*

The total asset to equity ratio is related to the capital structure of a bank. That is the nature of financing of a particular institution. It measures the extent to which an organization is either debt financed or equity financed. By the nature of this ratio, a higher ratio figure indicates that the organization's total asset far outweighs its equity portion. This means that the major portion of the total asset is contributed by external investors. This is termed debt financing. Figure 3.6 illustrates the mean changes in the total asset to equity ratio over the year under review.

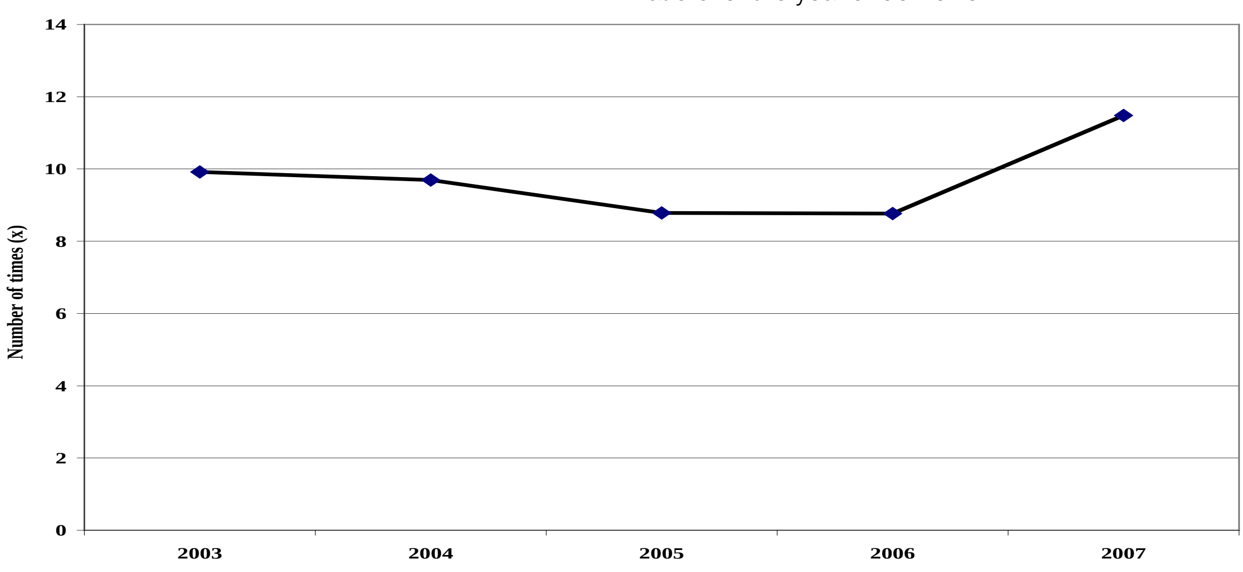


*Figure 3.6:* Trend in the Mean Levels of Total Asset to Equity ratio from 2003 to 2007

As can be seen in Figure 3.6 above, figures of the total asset to equity ratio from 2003 to 2006 fell within a close range of 8x to 10x. That is, the industry's total asset is about 8 to 10 times higher than its equity portion. This means that, the industry hugely relies on debt financing in its capital structure. In the year 2007 however, figures of the total asset over equity ratio had a sudden and upward adjustment to 11.5 times. The industry's equity cushion seems to have been worn more thinly, as the competition thickens and banks intensify market share. The highly positive skewness of the ratio figures also indicates that more banks were more financially leveraged than the industry average (that is, run more on debt financing than equity financing) for each year.

*h) Suitability of Principal Component Analysis*

Table 3.5 is the output of two statistical tests to confirm the adequacy of Principal Component Analysis (PCA) application on the data. The Bartlett's Test of Sphericity tests the null hypothesis that, the correlation matrix is an identity matrix (that is, there is no correlation among the ratios' variables) whiles the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy statistic indicates the extent to which variations in the original variables are accounted for by the underlying principal components generated. Higher values of both tests confirm the use of PCA.

*Table 3.5:* Result of KMO and Bartlett's Test

| Kaiser-Meyer-Olkin Measure of Sampling Adequacy | Bartlett's Test of Sphericity | | |
|---|---|---|---|
| | Approx. Chi-Square | Degrees of freedom | Significance |
| 0.75 | 1191.18 | 78 | 0.000 |

The results in Table 3.5 shows a high Bartlett's test of sphericity's sample statistic of 1191.18 with a corresponding low significant value 0.000. These indicate that the correlation among the ratios figures is significant enough to provide a reasonable basis for principal component analysis. Similarly, the KMO value of 0.75 confirms an excellent use of PCA.

*i) Extraction of Principal Components*

The principal components are generated by forming uncorrelated linear combinations of the observed ratios. The first component is the component with the maximum variance. It is the component that explained the largest portion of the variations in the data set and constitutes the most important basis for bank performance assessment. Successive components explain progressively smaller portions of the variation, and the size of variation accounted for is an indication of their level of importance in bank performance assessment. To account for the total variations in the data set, the number of principal components generated is equal to the number of variables in the data. Table 3.6 gives the output of all the components formed and their corresponding variance accounted for, which is represented by the eigenvalues.

*Table 3.6:* Principal Components and their Total Variance Explained

| Principal Components | Initial Eigenvalues | | |
|---|---|---|---|
| | Total | % of Variance | Cumulative % |
| 1 | 6.281 | 44.865 | 44.865 |
| 2 | 2.115 | 15.106 | 59.971 |
| 3 | 1.460 | 10.428 | 70.399 |
| 4 | 1.051 | 7.510 | 77.909 |
| 5 | 0.914 | 6.528 | 84.437 |
| 6 | 0.824 | 5.885 | 90.322 |
| 7 | 0.482 | 3.441 | 93.763 |
| 8 | 0.422 | 3.012 | 96.775 |
| 9 | 0.209 | 1.491 | 98.266 |
| 10 | 0.113 | 0.807 | 99.073 |
| 11 | 0.077 | 0.549 | 99.622 |
| 12 | 0.035 | 0.250 | 99.872 |
| 13 | 0.017 | 0.121 | 99.992 |
| 14 | 0.001 | 0.008 | 100.000 |

It can be observed from Table 3.6 that, principal component one (PC 1) alone explains the highest variability in the original data set, and hence variability in the performance of the industry; it accounts for 44.87% of the variation in the observed variables. This implies that, the areas where the PC1 measures should be the ultimate focus or basis for evaluating the financial performance of the banking industry. The inclusion of PC1 in the evaluation will give a better and more accurate evaluation than any other dimension. The second principal component (PC2) accounts for 15.12% of the variations in the data and constitutes the next area of assessment. Similar interpretation goes for the remaining Components. Each component formed assesses a unique portion of the industry under review and therefore, specific PCs should be given much weight when evaluating an aspect of the industry. However, the overall industry's financial performance evaluation lies in the assessment of the PCs with much contributing power.

The number of Principal Components to retain is influenced by the main objective of the study, which is to identify key financial performance assessment indices for banks performance evaluation. The application of the 'Eigenvalue greater than one rule' confirms that the first four Principal Components need to be retained as indicated by the values under the column 'Total' of the Eigenvalues in Table 6. That is, areas where these principal components assess are worthy of consideration in the evaluation. Analysis based on the scree plot was performed to corroborate the outcome of the eigenvalue greater than one rule. The result is as summarized in Figure 3.7.

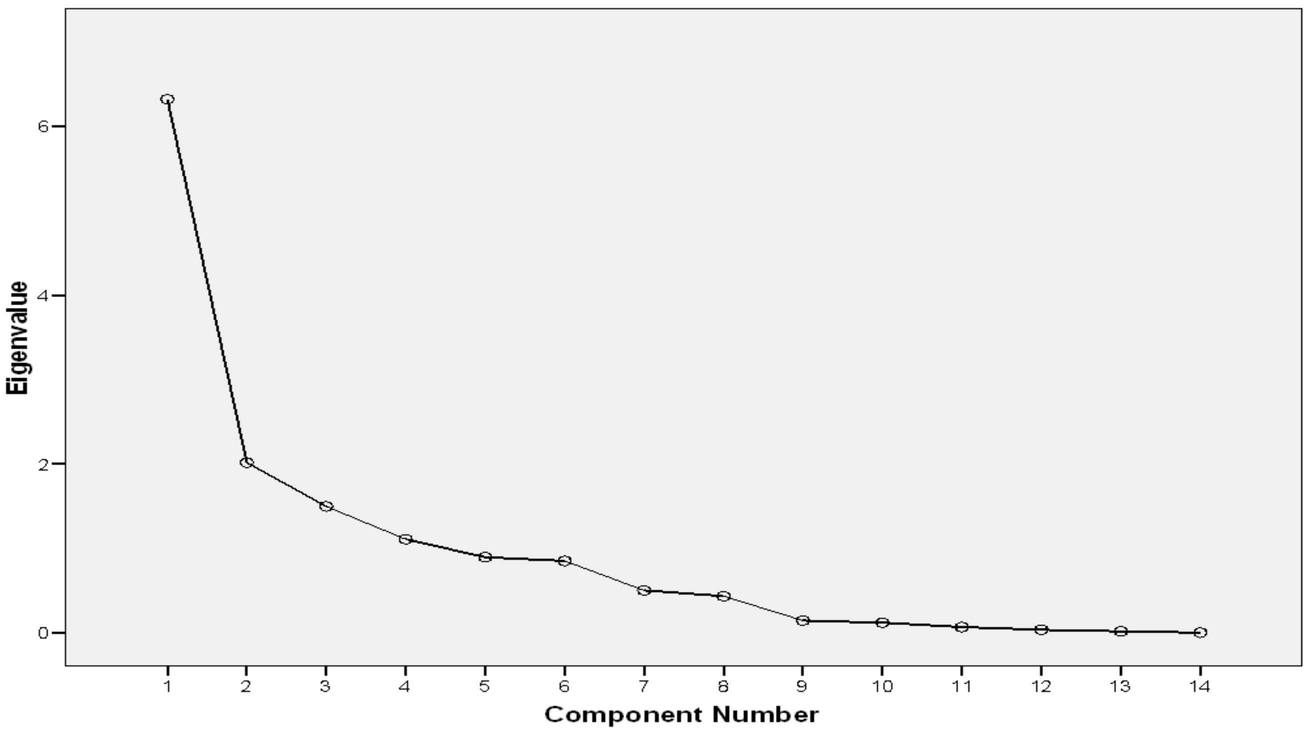


*Figure 3.7:* Scree Plot indicating the Components on the Steep Slope

It can be observed from the scree plot that, only the first two principal components are on the steep slope of the graph. This implies that Component 1 and 2 are the major principal components that account for large variations in the financial performance of the bank institutions. The extreme distance of component one from the other principal components indicates that, the first principal component is the ultimate index for bank performance evaluation.

Following the above analysis, the first four principal components (PC 1, 2, 3 and 4) were retained with much emphasis on component 1 and 2. The principal components were rotated (orthogonal transformation at 90 degrees) to generate a rotated component matrix for easy and clearer interpretation of the components formed. (The unrotated component matrix is shown in Appendix A). The rotated component matrix reports the component or pattern loadings for each ratio or variable on the principal components. These pattern loadings are the correlation between the ratio figures and the principal components. A high pattern loading indicates that the component can explain the variations in the corresponding ratios accurately. The analysis deemed loading of size 0.5 or more on any principal component as significant. Table 3.7 summarizes the results of the matrix.

*Table 3.7:* Rotated Component Matrix

| Ratio | Component | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| ROA | 0.295 | 0.816 | 0.136 | -0.043 |
| ROE | 0.294 | 0.784 | 0.096 | 0.141 |
| Net Spread | 0.021 | 0.055 | 0.940 | -0.166 |
| Loan Portfolio Profitability | -0.198 | 0.179 | 0.892 | 0.071 |
| New Loan Loss Provision | 0.067 | -0.263 | 0.209 | -0.827 |
| Total Asset/Equity | -0.110 | 0.079 | -0.034 | 0.049 |
| Share Of Industry Deposits | 0.930 | 0.246 | -0.015 | 0.125 |
| Share Of Industry Net Advances | 0.932 | 0.277 | -0.038 | 0.101 |
| Share Of Industry Total Asset | 0.951 | 0.266 | -0.040 | 0.062 |
| Share In Industry Operating Asset | 0.952 | 0.264 | -0.043 | 0.051 |
| Share Of Industry Shareholder Fund | 0.924 | 0.201 | -0.080 | -0.067 |
| Net Interest Margin | 0.359 | 0.617 | 0.273 | 0.015 |
| Dividend Pay Out Ratio | 0.462 | 0.571 | -0.174 | 0.212 |
| Liquid Fund/Total Deposits | 0.374 | -0.201 | 0.171 | 0.614 |

Observation from Table 3.7 is that the first principal component (PC1) has high loadings only for all the ratios about a bank's share in the industry (share of industry deposits, a share of industry total asset, and share of industry shareholder fund). Hence PC1 can be named as bank's share of the industry index. Thus, a bank's share of the industry constitutes the most important basis for assessment of financial performance. The size of the share in the industry is reflected in the size of the asset base of the individual banks. Therefore, evaluation of financial performance with the share of industry asset as the basis is a direct evaluation based on the asset size of the individual banks.

The second Principal Component (PC2) is highly loaded with ROA, ROE, Net Interest-Margin and Dividend Pay-out ratios. These ratios play key roles in assessing the profitability of a firm. Hence PC2 can be termed as bank profitability index. The PC2 should be the basis for evaluating the industry profitability.

The loan portfolio profitability and the net spread ratios can also be seen to have high loading only on the Third Principal Component (PC3). Therefore, PC3 is named as return on loans index.

Concerning the fourth Principal Component (PC4), only the loadings on the Liquid Fund to Total Asset and the New Loan Loss provision to Gross Loans and Advances are higher than the cut-off point of 0.5. The realization of negative loadings on the new loan loss provisions and the positive loading on the Liquid Fund to Total Deposit ratios on the fourth PC imply that, the industry performs in opposite direction in areas where the ratios assess. This observation was expected because, when a liquid fund is large, it indicates that more of the total deposits are not given out as loans, but rather being reserved and invested into profitable securities. As a result of the low level of loan given out, there is a decrease in the amount of loan loss provisions. This situation is appropriately used in evaluating the liquidity position of an organization and hence, PC4 is termed as the liquidity index.

*j) Industry Share of Asset Index; PC1*

Referring to the rotated component matrix in Table 3.7, the significant loadings on PC1 or Industry Share of Asset Index are all positive and hence, large component scores imply the acquisition of large share of the industry asset over the period. Similarly, small score values of a particular bank indicate an acquisition of a small percentage of the assets in the industry. The scores ranking and their corresponding banks are as shown in Table 3.8.

*Table 3.8:* Banks Ranking Based on PC1: Share of Industry Asset Index

| 2004 | | | 2005 | | | 2006 | | | 2007 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Rank scores | Type | Bank | Rank scores | Type | Bank | Rank scores | Type | Bank | Rank scores | Type | Bank |
| 2.61 | GH | GCB | 2.18 | GH | GCB | 2.28 | NGH | BBG | 2.93 | NGH | BBG |
| 1.70 | NGH | BBG | 1.64 | NGH | SCB | 1.80 | GH | GCB | 2.27 | GH | GCB |
| 1.57 | GH | ADB | 1.48 | NGH | BBG | 1.06 | NGH | SCB | 0.56 | NGH | SCB |
| 1.32 | NGH | SCB | 1.12 | GH | ADB | 0.91 | GH | ADB | 0.50 | GH | ADB |
| 0.39 | NGH | SSB | 0.24 | NGH | SSB | 0.32 | NGH | SSB | 0.22 | GH | MBG |
| 0.07 | NGH | EBG | 0.17 | NGH | EBG | 0.26 | GH | MBG | 0.17 | NGH | EBG |
| 0.00 | NGH | SBBL | 0.12 | GH | NIB | 0.02 | NGH | EBG | -0.01 | NGH | SSB |
| -0.04 | GH | MBG | 0.02 | GH | MBG | -0.06 | GH | NIB | -0.10 | GH | NIB |
| -0.23 | GH | NIB | -0.11 | NGH | SBBL | -0.25 | NGH | ZBL | -0.37 | NGH | GTB |
| -0.42 | GH | FAM | -0.37 | GH | FAM | -0.29 | GH | FAM | -0.40 | NGH | SBBL |
| -0.43 | NGH | BPI | -0.49 | NGH | ZBL | -0.37 | NGH | ABL | -0.50 | NGH | ZBL |
| -0.48 | GH | UGL | -0.51 | GH | CAL | -0.50 | GH | CAL | -0.52 | GH | FAM |
| -0.64 | GH | CAL | -0.56 | NGH | ICM | -0.57 | GH | PB | -0.52 | GH | PB |
| -0.73 | GH | PB | -0.70 | GH | UGL | -0.77 | GH | HFC | -0.57 | GH | FBL |
| -0.83 | NGH | ABL | -0.74 | NGH | ABL | -0.83 | NGH | SBBL | -0.63 | NGH | ABL |
| -0.86 | NGH | ICM | -0.86 | GH | TTB | -0.87 | GH | UGL | -0.64 | GH | CAL |
| -0.94 | GH | HFC | -0.88 | GH | HFC | -0.93 | GH | TTB | -0.80 | GH | TTB |
| | | | -1.01 | NGH | BPI | -1.01 | NGH | BPI | -0.86 | GH | HFC |
| | | | | | | . | GH | FBL | -0.90 | NGH | ICM |
| | | | | | | . | NGH | GTB | -0.94 | NGH | BPI |
| | | | | | | . | NGH | IBL | -0.96 | GH | UGL |

Observation from Table 3.8 is that over the study period, the major banks that have been consistent in the first quartile range are Ghana Commercial Bank (GCB), Agric Development Bank (ADB), Barclays Bank, Standard Chartered Bank (SCB) and SG-SSB. These banks had been alternating their ranking positions as the years go by. It can also be noticed from the ranking scores that, banks with the least asset share in the industry were mainly Prudential Bank, International Commercial Bank, HFC, The Trust Bank (TTB) and BPI.

*k) Bank Profitability Index; PC2*

All the significant loadings on the Bank Profitability Index; PC 2 are positive. Therefore, large positive scores imply banks with higher profit level and vice versa. The ranking of the banks based on the profitability index is summarized in Table 3.9.

*Table 3.9:* Banks Ranking Based on the Scores of PC 2: Bank Profitability Index

| 2004 | | | 2005 | | | 2006 | | | 2007 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Rank scores | Type | Bank | Rank scores | Type | Bank | Rank scores | Type | Bank | Rank scores | Type | Bank |
| 1.73 | GH | TTB | 1.56 | GH | TTB | 1.70 | GH | TTB | 1.26 | GH | TTB |
| 1.41 | NGH | BBG | 1.52 | NGH | BBG | 1.38 | NGH | EBG | 1.02 | NGH | EBG |
| 1.12 | NGH | SCB | 1.30 | NGH | EBG | 1.07 | NGH | SCB | 1.00 | NGH | SCB |
| 0.91 | NGH | SSB | 0.89 | NGH | SCB | 0.41 | GH | GCB | 0.69 | NGH | SSB |
| 0.76 | GH | HFC | 0.85 | NGH | SSB | 0.41 | NGH | SBBL | 0.65 | NGH | SBBL |
| 0.75 | NGH | EBG | 0.47 | GH | PB | 0.40 | NGH | SSB | 0.60 | GH | HFC |
| 0.62 | GH | NIB | 0.27 | GH | NIB | 0.28 | GH | CAL | 0.13 | GH | CAL |
| 0.50 | GH | PB | 0.26 | GH | HFC | 0.09 | GH | HFC | 0.02 | GH | PB |
| 0.40 | GH | CAL | 0.19 | GH | CAL | 0.08 | GH | UGL | -0.01 | GH | UGL |
| 0.29 | GH | MBG | 0.12 | GH | MBG | 0.07 | NGH | ICM | -0.16 | GH | NIB |
| -0.09 | NGH | ICM | 0.07 | NGH | BPI | 0.00 | GH | MBG | -0.20 | NGH | BPI |
| -0.16 | GH | GCB | -0.08 | GH | GCB | -0.03 | GH | PB | -0.22 | GH | MBG |
| -0.19 | NGH | ABL | -0.18 | GH | FAM | -0.22 | NGH | BPI | -0.30 | GH | FAM |
| -0.36 | GH | FAM | -0.46 | NGH | ICM | -0.45 | GH | FAM | -0.37 | NGH | ICM |
| -0.82 | NGH | SBBL | -0.64 | NGH | ABL | -0.46 | GH | NIB | -0.45 | GH | GCB |
| -0.87 | GH | UGL | -0.64 | GH | UGL | -0.54 | GH | ADB | -0.55 | NGH | ABL |
| -1.00 | GH | ADB | -0.75 | NGH | SBBL | -0.77 | NGH | BBG | -0.77 | NGH | IBL |
| -1.68 | NGH | BPI | -0.93 | GH | ADB | -1.56 | NGH | ABL | -0.79 | GH | ADB |
| | | | -2.83 | NGH | ZBL | -3.32 | NGH | ZBL | -1.06 | GH | FBL |
| | | | | | | . | GH | FBL | -1.08 | NGH | ZBL |
| | | | | | | . | NGH | GTB | -2.07 | NGH | BBG |
| | | | | | | . | NGH | IBL | -2.91 | NGH | GTB |

The score ranking as shown in Table 3.9 confirms that The Trust Bank (TTB), Standard Chartered Bank (SCB), SG-SSB (SSB), Ecobank Ghana (EBG), and Barclays Bank (BBG) have consistently been on the first quartile of the profitability ranking. Thus, these are the banks that have consistently had higher returns on their investment in the industry over the five-year period, although the industry suffered a declining trend in its returns on investment. Concerning banks that made lower returns or profits, no bank was found to be in the last quartile group for each year. However, Agric Development Bank (ADB), Amalgamated Bank (ABL), Zenith Bank Limited (ZBL), Fidelity Bank Limited (FBL) and First Atlantic Merchant Bank Ltd (FAM) frequently took positions in the last quartile ranking and therefore experienced low profit returns on their investments. The outputs of the ranking for the 3rd and 4th indices (Loan profitability, and Liquidity Index) are displayed in Appendices B and C.

## IV. Summary, Discussion, Conclusions and Recommendations

### a) *Summary of Findings*

The study utilizes a multivariate statistical approach to objectively assess the financial performance of the Ghanaian Banking Industry over a five-year period from 2003 to 2007. Its main objective was to establish financial performance assessment indices for bank evaluation. Secondary data was extracted from the Ghana Banking Survey report (2008) and analysed. The data covered 22 banks - 11 Ghanaian and 11 foreign - operating in Ghana. The variables were mainly financial ratios. Findings from the study are that, the industry observed increasing improvement in its asset base, liquidity position and loan management as the year progresses. There was a gradual decline in the new loan loss provisions which augurs well for loan management. Net spread constituted the main determinant factor in the changes in loan management due to its strong positive correlation with loan portfolio profitability and new loan loss provisions to gross loans and advances ratio. The improvement in the assets base of individual banks and hence the industry asset base, led to the gradual strengthening of the liquidity position of the industry as the year progresses. The industry, however recorded declining trends in its returns or profit levels as the year goes by, but remains positive. Reliance on debt financing was found to be a common financing strategy in the banking industry, with the year 2007 recording the highest figure. In most cases, the majority of the banks were found to be performing below the recorded averages; thus being more depressed under the increasing competition in the industry. In all the years, 2006 experienced the worse financial performance in general.The study established four key financial performance assessment indices and their identified corresponding financial ratios. This is summarized in Table 4.1.

*Table 4.1:* Identified Assessment Indices and their respective Financial Ratios

| Performance Assessment Index | Identified key Financial Ratios |
|---|---|
| Share of Industry Asset Index | • a share of industry operating asset,<br>• a share of industry shareholder fund,<br>• a share of industry deposit<br>• a share of industry net advance |
| Bank Profitability Index | • ROA,<br>• ROE,<br>• dividend pay out ratio<br>• Net interest margin ratio. |
| Return on Bank Loan Index | • loan portfolio profitability ratio<br>• net spread |
| Liquidity Index | • New Loan loss provision to gross loans and advances ratio,<br>• liquid fund over total deposits ratio |

Among these identified indices, the Share of Industry Asset index and the Bank Profitability index constitute the most important indices for assessing the financial performance of banking institutions. Ranking the selected banks concerning the identified indices revealed that, banks with outstanding performance were SCB, TTB, and Barclays Bank while ADB and GCB recorded the least financial performance.

*b) Discussion of Results*

The reliance on financial ratios as key indicators for bank performance assessment has been extensively supported by researchers and business analysts. Whereas some literature have drawn conclusions based on a single financial ratio research base, others have concluded on the need for inclusion of several financial ratios. Finding from this study supports the use of more than one financial ratio in bank performance assessment since the ratios are correlated, and the identified indices are a linear combination of two or more of the individual financial ratios.

Existing common and dominant evaluating tool in assessing the financial soundness of a financial institution is termed CAMELS, which is the initials of Capital adequacy, Asset quality, Management expertise, Earnings strength, Liquidity and Sensitivity to market risk. This model calls for categorization of the financial ratios into groups as indicated by the acronyms and requires consideration of every category in the evaluation of financial institutions' performance. The study's identification of four assessment indices namely; a share of industry asset's index, Banks Profitability index, Return on Bank Loan index, and Liquidity position conforms to the CAMELS tool. The established indices confirm that there is a unique set of ratios for assessing a particular aspect of the banking industry performance.

The share of industry asset's index tends to align with the Capital Adequacy, bank profitability index tends to align with Earnings strength, and bank loan profitability index aligns with Asset quality. It can, however, be said that the groups or indices established in the study are more reliable than the CAMELS model. The CAMELS model is recommended for all financial institutions' performance assessment and contains several financial ratios in each category of which the selection is left to the judgment of the researcher or the analyst. That is, the researcher adopting the CAMELS' model may not know the appropriate financial ratios to select from each category, and it is also cumbersome to include all the recommended financial ratios. In this study the financial ratios in each group are those that are highly correlated and yield better results than any other combinations.

The realization of extensive growth in the asset base of the industry is in a positive direction for the growth of the entire industry. Banks play an important intermediation role in the financial services market; they take on deposits (incur liabilities) and provide loans and advances (create assets) from which they would either make a profit and distribute some to providers of capital, or make a loss.For the conduct of both activities, banks require adequate capital to provide comfort to both customers and the regulator of the industry for them to have confidence in the financial services system (Ghana Banking Survey, 2008). The growth in the industry asset is as a result of the banks' compliance with BoG directives requiring banks to meet a minimum capital by some period. In the year 2003BoG issued a directive requiring all banks to increase stated capital to GH¢7million (an equivalent of ¢70billion) by the end of 2006. This was to enable them have the universal banking licenses that allowed them to undertake retail, merchant, development and investment banking without the need to acquire separate licenses. According to the Ghana Banking Survey report (2008), the majority of banks raised the additional capital required through transfers from retained earnings and income surpluses. In the process, the industry's stated capital was increased from GH¢29 million in 2003 to GH¢181million in 2007; that is, by more than five times the 2003 levels. Although all the banks obliged and increased their stated capital as required thereby increasing their asset base, finding from the study indicate that, the percentage share of the industry asset of each bank shrinks as the year progresses. This revelation is because each year, the weaker and poor performing institutions attempt to improve, thereby increasing their share in the market and the industry asset. This reduces the size of other banks in the industry. Again, the increasing number of bank institutions in the country as the year goes by reduces the market share of the existing banks, and hence the reduction in the percentage shares of the industry asset of individual banks.

The improvement in the liquidity position of the industry is an expected outcome which reflects the objectives of BoG directives. Other associated outcome of the increase in the capital could be the improvement in loan management and banks institutions becoming more financially leveraged. The high financial leverage as observed in the year 2007 could be linked to the inability of most banks to meet the BoG capital requirement with its retained earnings and income surpluses, and therefore had to rely on external sources for funds.

Analysts have explained that Asset, especially Operating Asset is a core arsenal for doing business and creating value for stakeholders of a bank institution. This means that the larger a bank's asset, the higher the returns or profits. However, this is a contradiction of the realization in the study of a declining trend in the returns or profits level in the industry; that is, as the industry assets base increases, the profit level decreases. The general decline is also manifested in the corresponding decline in the payment of dividend on shareholders' investment (24.3% in 2003 and 19.7% in 2007). In each year, there were some banks that did not pay the dividend at all. MBL, GTB, BPI, ZBL, PBL, International Commercial bank, Intercontinental bank, and Unibank Ghana limited were the major banks that could not declare dividend payment in most of the years. However, Barclays Bank, SG-SSB, Standard Chartered Bank and Ecobank Bank Ghana distributed over 60% on the average, of their earnings as dividends. Such a reduction in the industry's dividend payout, according to the Ghana Banking survey report (2008), could be attributed to retaining more of the earnings to satisfy BoG's increased minimum capital requirement. Another contributing factor is the realization of greater opportunities for bank growth as the economy expands, and the increased industry competition compelling banks to develop more innovative products, invest in business and service support infrastructure. However, in the mist of the decline, the industry remained firm and generated positive, reasonable returns on its assets.

### *c) Conclusions*

The study has its main objective of establishing financial performance assessment indices which can be used for bank performance evaluation in the Ghanaian banking industry. It also examines the pattern of performance of the banking industry over a five-year period, from 2003 to 2007.

The conclusion from the study is that, there is correlation between the financial ratios and reliance on several correlated financial ratios is more effective in a bank's financial performance assessments than a single financial ratio. Assessment of the performance of the Ghanaian banking institutions is based on four key indices identified in this study. These indices are the share of industry assets, the bank profitability, the return on a bank loan, and bank liquidity position. The established indices contain the appropriate financial ratios for bank evaluation.

Another observation from the study is that the Ghanaian Banking Industry has had a significant improvement in its assets size, liquidity position, and loan management, but a significant decline in its profits level, though remain positively large. Using the profitability index, it was found that banks with outstanding performance were Standard Chartered Bank, The Trust Bank, and Barclays Bank. Agric Development Bank and Ghana Commercial Bank performed poorly despite being among the institutions with a large asset base over the period.

The use of these indices in evaluating the performance of Ghanaian banks will reveal their true financial performance better than what would be obtained by relying on the result of a single ratio.

The study, however, did not examine the impact of changes in macro indicators such as inflation, exchange rate, and Gross Domestic Product (GDP) growth on bank performance. Further research is therefore recommended in these areas as a means of completing the scope of the banking financial performance assessment.

*d) Recommendations*

Banks of Ghana should encourage the banks in Ghana to use the multivariate approach in calculating the performance of the banks to determine early signal of banks from being insolvent meaning that the bank's liabilities exceeded their asset.

Management of Banks should use adopted to multivariate statistical approach in calculating the performance of the bank so as to determine the financial strength of their banks so as to attract investors in their banks.

Human resource manager should recruit accounting and financial personnel who know the multivariate approach in calculating the performance of the banks. In addition to this, banks should provide periodic training to staff on the use of the multivariate approach to calculating the performance of the banks.

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# International Principles and Practice of Corporate Governance: A Study on Banking Industry in Bangladesh

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*Abstract-* The paper endeavors to show the level of adherence to corporate governance practice to international principles regarding banking industry of Bangladesh. The study used random selected 15 banks in Bangladesh, and the research design was explanatory. The research used the percentage and average calculation and finding the gap between the international principles and practices of corporate governance. International corporate governance principles are not mentioning the corporate governance. It also indicates the organizational, cultural, legal, industry practice, political and social factors. The international corporate governance principles had nine principles. Bangladesh banking industry implements the almost seven principles based on findings. The shareholder return and the operational performance the international principles were the focus board attention on optimizing over time the returns to shareholders. BSEC (Bangladesh Security Exchange Commission) states corporate governance notifications and the independent auditor's certificate of compliance with conditions of corporate governance guidelines to the shareholder of the particular bank. The published annual reports experience our everyday excellence through the trio of phenomena - 'Transparency', 'Accountability' and 'Ethics'; the first is mirrored in the fact-sheet of our banking operations while the second persists in compliance of regulations and laws.

*Keywords: corporate governance, transparency, accountability, international corporate governance principles, practice, BSEC etc.*

*GJMBR-C Classification: JEL Code: E50*

INTERNATIONALPRINCIPLESANDPRACTICEOFCORPORATEGOVERNANCEASTUDYONBANKINGINDUSTRYINBANGLADESH

*Strictly as per the compliance and regulations of:*

# International Principles and Practice of Corporate Governance: A Study on Banking Industry in Bangladesh

Md. Rafiul Islam [α] & Zakea Afrose [σ]

*Abstract-* The paper endeavors to show the level of adherence to corporate governance practice to international principles regarding banking industry of Bangladesh. The study used random selected 15 banks in Bangladesh, and the research design was explanatory. The research used the percentage and average calculation and finding the gap between the international principles and practices of corporate governance. International corporate governance principles are not mentioning the corporate governance. It also indicates the organizational, cultural, legal, industry practice, political and social factors. The international corporate governance principles had nine principles. Bangladesh banking industry implements the almost seven principles based on findings. The shareholder return and the operational performance the international principles were the focus board attention on optimizing over time the returns to shareholders. BSEC (Bangladesh Security Exchange Commission) states corporate governance notifications and the independent auditor's certificate of compliance with conditions of corporate governance guidelines to the shareholder of the particular bank. The published annual reports experience our everyday excellence through the trio of phenomena - 'Transparency', 'Accountability' and 'Ethics'; the first is mirrored in the fact-sheet of our banking operations while the second persists in compliance of regulations and laws.

*Keywords: corporate governance, transparency, accountability, international corporate governance principles, practice, BSEC etc.*

## I. Introduction

Corporate Governance is the process of Practicing accuracy, accountability, smart stewardship, effective internal control, customary behavior in an organization. It is the means, by which a body operates and controls. It protects the interests of all stakeholders of an organization. Financial accounting information is the product of corporate accounting and external reporting systems that measure and routinely disclose audited, quantitative data concerning the financial position and performance of publicly held firms. Audited balance sheets, income statements, cash-flow statements and supporting disclosures, form the foundation of the firm-specific information set available to investors and regulators. Developing and maintaining a sophisticated financial disclosure regime is not cheap. There are nine components of International corporate governance principles are as follows: Corporate Objective, Communications and reporting, voting rights, corporate boards, corporate remuneration policies, Strategic focus, operating performance, shareholder returns, corporate citizenship, governance implementation. And there Six factors considered (OECD) Organization for Economic Co-operation and Development are ensuring the basis for governance framework, the rights of shareholders and ownership functions, the equitable treatment of shareholders, the role of stakeholders in corporate governance, disclosure and transparency, the responsibilities of the board. Corporate governance is a term that refers broadly to the rules, processes, or laws by which businesses are operated, regulated, and controlled. The term can refer to internal factors defined by the officers, stockholders or constitution of a corporation, as well as to external forces such as consumer groups, clients, and government regulations. The governance structure specifies the distribution of rights and responsibilities among different participants in the organization (such as the board of directors, managers, shareholders, creditors, auditors, regulators, and other stakeholders) and specifies the rules and procedures for making decisions in corporate affairs. Governance provides the structure through which corporations set and pursue their objectives while reflecting the context of the social, regulatory and market environment. It is a mechanism for monitoring the actions, policies, decisions of corporations. It involves the alignment of interests among the stakeholders.

## II. Objective of the Study

*a) General Objective*

The objective of the study is to unearth the scenario of International principles and practice of Corporate Governance respective to Banking Industry of Bangladesh.

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### b) *Specific Objectives*

The clear specified purpose of the paper are:

1. To find out the scenario of corporate governance principles and practices of corporate governance of banking industry in Bangladesh.
2. To identify the average value (percentage) of banks industry international corporate governance principles implementations and gap.

## III. Literature of Review

Corporate governance is one of the pillars of IFC's focus on sustainability following environmental and social sustainability. Better corporate governance increases the likelihood that the enterprise will satisfy the legitimate claims of all stakeholders and fulfill its social responsibilities. Accordingly, it contributes to the long-term, sustainable growth of client companies. A company that is well-governed is one that is accountable and transparent to its shareholders and other stakeholders (such as employees, creditors, customers and the society).

The study has identified some problems in Corporate Governance practice in the Banking Industry of the country. The prospect of Corporate Governance practice is bright in Banking Industry as reported by the respondents if problems are removed by the concerned management of the Banks as well as Bangladesh Bank management as the guardian of commercial Banks [7].

To do the study, the issues were focused like rights and disclosure of information, disclosure and transparency, board issues, disclosure and transparency, financial reporting and HRM practices.7 hypotheses have been developed to identify whether the private banks are complying corporate governance issues or not. And making the study convenient an assumption was made using subjective probability technique that 70% or more of private banks of Bangladesh are maintaining 90% or more CG codes for Bangladesh [2]. Only 50% of the major issues like disclosure and transparency, financial reporting and audit practice has met the assumption. Of which 100% of the CG codes regarding financial reporting are practiced by the 70% or more private banks and it was 83.33% for audit practice [14].

This paper attempts to seek out the corporate governance practices in Bangladesh banking industry and it has been tried to know about whether the boards of directors understand their responsibilities, the different committees in the organization, the audit procedures or systems, auditors and role of independent directors. By these responses, it has been evaluated that the quality of the regulation in Bangladesh banking system stands at an unsatisfactory stage. Lack of accountability, lack of fairness and transparency in practices and faulty, incomplete and ineffective audit and disclosure have led to widespread corruption in the industry. It is also evaluated that the necessity of ensuring accountability, fairness, transparency to build sound corporate governance in the Bangladesh banking industry [13].

This study was initiated to critically observe the current Corporate Governance status and practices in the banking sector of Bangladesh. The study was descriptive. Convenient sampling method was used to select the sample banks for the study. The study found that top management influence as well as political pressure exists in the banking sector which affects the lending decisions. Corrupted bankers and dishonest officials of Bangladesh Bank were found associated with several scams. Proper documentation is mandatory, but sometimes banks show flexibility in this regards and provide extra benefits to the clients. Selection of the wrong borrower, unhealthy competition among the banks, fund diversion, inefficient auditing and insufficient collateral cause harms to the banks. Sometimes banks do not follow the rules and guidelines provided by Bangladesh Bank which were designed to protect themselves and operate business smoothly [12].

This study focused on the state of Corporate Governance (CG) in two categories of the banking industries: Conventional Banks and Islamic Banks. As Conventional Banks and Islamic Banks differ a great deal in their rules, regulations and operating procedures, the corporate governance (CG) practice of these two banking sectors is also different from each other. Here in this paper, it is tried to represent a comparative study about corporate governance (CG) practice of these two banking sectors [16].

One of the principal reasons for poor CG is that most of the organizations are family oriented and the Board of Directors is actively involved in management [9]. In the framework of Bangladesh, independent directors do not act as a supporter of majority shareholders or as a source of innovative ideas [6].

The sector observed diminishing profitability, growing non-performing assets, provision and capital shortfalls, eroded credit discipline, rampant corruption patronized by political quarters, low recovery rate, inferior asset quality, managerial weaknesses, excessive interference from government and owners, weak regulatory and supervisory role, etc. [10, 17]. Internal control system along with accounting and audit qualities are supposed to have been insufficient [18, 11, 8].

The presence of liquid assets and lack of depositors' interest to actively control and monitor banks' risky decisions as a result of the insurance guarantees simplifies the sharking in the banking firms. Banks in Bangladesh are confronted with the high risk of sharking as a result of government ownership, lack of prudential regulation, weak legal protection, and presence of special interest groups [5]. The independent regulatory agencies are essential in Bangladesh to act against the repeated collusion among government, businesses and bankers to serve special interest groups [15, 4].

In a study, the author argues the U.S financial crisis occurred due to regulatory governance failures. He further describes a company as non-compliant when it fails to comply with the CG codes and creates opacity in place of transparency, accountability, monitoring and oversight of their managerial practices [3].

In Bangladesh, poor bankruptcy laws, no push from the international investor community, limited or no disclosure regarding related party transactions, weak regulatory system, general meeting scenarios and lack of active shareholder participations are some of the individual constituents that have been identified as reasons for the absence of CG [1].

## IV. Methodology

The research design was explanatory. The study used only secondary data that were collected from the published annual reports of randomly selected banks in Bangladesh. The selection processes of banks were randomly and also ensure all types of Bank. To examine the principles of corporate governance in bank practices, we have taken a sample of fifteen (15) banks lead in Bangladesh. All the data needed to be examined have been collected from the annual report, official website, operational manual, different database & report developed by the central bank. To analyze the tabular data format and percentage, etc. has been used.

## V. Findings and Discussions

We had to discover the pathway of international corporate governance principles and practices of the banking industry in Bangladesh. Data analysis we had to mention steps. First, one is carefully observed the published annual report above nine (Corporate Objective, Communications, Reporting, Voting Rights, Corporate Boards, Corporate remuneration policies, Strategic Focus, Operating performance, Shareholder returns, Shareholder returns, Corporate Citizenship) principles whose companies have reported whose is not. We assume that there are nine international corporate governance factors had a one point value.

The table 01 had shown in the column placed by nine international corporate governance principles and the row by the bank's name. In the table yes is mention the reported the principles and zero sign refers the not reported. The table also shown in the every yes sign carry was one point value and zero sign value carry the zero value. Such as, the AB bank Ltd. was corporate governance implementations in percentage 66.66%. The AB bank Ltd. had achieved the 6 point out of 9 that means 66.66% percent implement the corporate governance of international principles.

In figure 01 had shown the all randomly selected banks were implemented of world company governance principles. Seven selected banks were 55.55%, six selected banks were 77.77%, and two banks were 66.66%, implements the international corporate governance principles.

The table 02 had shown the average value of banks industry international corporate governance principles implementations and gap. The result was 65.919% is implemented and 34.081% was a gap.

Figure 02 had shown the graphically presented the value of banks industry international corporate governance principles implemented and gap. The result was 65.919% is implemented and the 34.081% was a gap.

*Table 1:* The table had shown the International Corporate governance principles and practices or corporate governance implementations of the banking industry in Bangladesh

| Principles / Banks name | Corporate Objective | Communications and Reporting | Voting Rights | Corporate Boards | Corporate remuneration policies | Strategic Focus | Operating performance | Shareholder returns | Corporate Citizenship | Corporate governance implementation or (Remarks) |
|---|---|---|---|---|---|---|---|---|---|---|
| AB Bank Ltd. | ✓ | ✓ | ✓ | ✓ | • | ✓ | • | • | ✓ | 66.66% |
| Mercantile Bank Ltd. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | • | • | ✓ | 77.77% |
| Southeast Bank Ltd. | ✓ | ✓ | ✓ | ✓ | • | • | • | • | ✓ | 55.55% |
| IFIC Bank Ltd. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | • | • | ✓ | 77.77% |
| Dhaka Bank Ltd. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | • | • | ✓ | 77.77% |
| Prime Bank Ltd. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | • | • | ✓ | 77.77% |
| Islami Bank Bangladesh Ltd. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | • | • | ✓ | 77.77% |
| Trust Bank Ltd. | ✓ | ✓ | ✓ | ✓ | • | • | • | • | ✓ | 55.55% |
| Shajalal Islami Bank Ltd. | ✓ | ✓ | ✓ | ✓ | • | ✓ | • | • | ✓ | 66.66% |
| Eastern Bank Ltd. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | • | • | ✓ | 77.77% |
| NCC Bank Ltd. | ✓ | ✓ | ✓ | ✓ | • | • | • | • | ✓ | 55.55% |
| First Security Islami Bank Ltd. | ✓ | ✓ | ✓ | ✓ | • | • | • | • | ✓ | 55.55% |
| NRB Bank Ltd. | ✓ | ✓ | ✓ | ✓ | • | ✓ | • | • | • | 55.55% |
| SIBL Bank Ltd. | ✓ | ✓ | ✓ | ✓ | • | ✓ | • | • | ✓ | 55.55% |
| ICB Islami Bank Ltd. | ✓ | ✓ | ✓ | ✓ | • | • | • | • | ✓ | 55.55% |

*Figure 1:* Corporate governance international principles implementations of banks (in percentages)

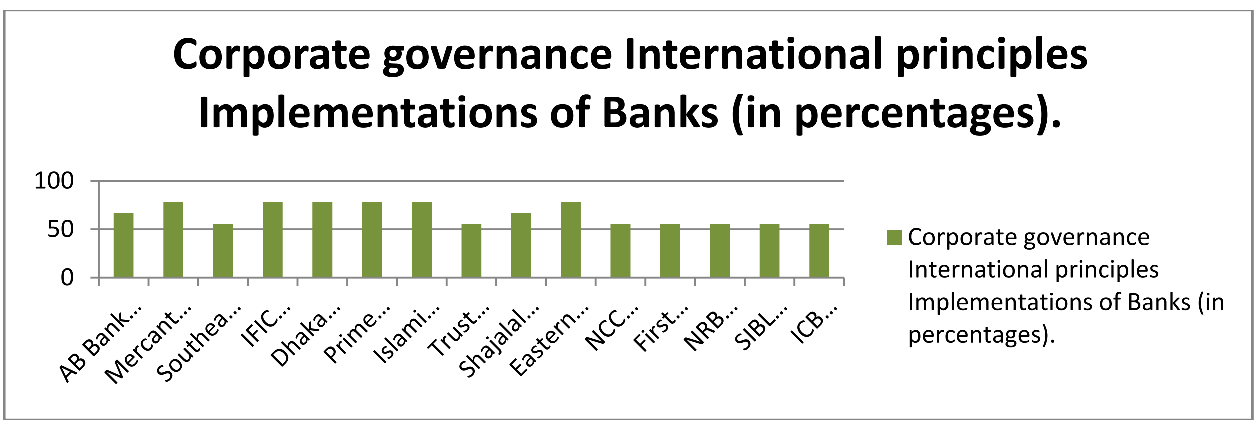

*Table 2:* Had shown the average value of banks industry international corporate governance principles implementations and gap

| Banks Name | International corporate governance principles (%) | |
|---|---|---|
| | Value of Corporate governance Implementations | Gap value of corporate governance implementations |
| AB Bank Ltd. | 66.66% | 33.34% |
| Mercantile Bank Ltd. | 77.77% | 22.23% |
| Southeast Bank Ltd. | 55.55% | 44.45% |
| IFIC Bank Ltd. | 77.77% | 22.23% |
| Dhaka Bank Ltd. | 77.77% | 22.23% |
| Prime Bank Ltd. | 77.77% | 22.23% |
| Islami Bank Bangladesh Ltd. | 77.77% | 22.23% |
| Trust Bank Ltd. | 55.55% | 44.45% |
| Shajalal Islami Bank Ltd. | 66.66% | 33.34% |
| Eastern Bank Ltd. | 77.77% | 22.23% |
| NCC Bank Ltd. | 55.55% | 44.45% |
| First Security Islami Bank Ltd. | 55.55% | 44.45% |
| NRB Bank Ltd. | 55.55% | 44.45% |
| SIBL Bank Ltd. | 55.55% | 44.45% |
| ICB Islami Bank Ltd. | 55.55% | 44.45% |
| Number of Banks Fifteen (15) | 65.919% | 34.081% |
| The average value of banks industry in corporate governance implementations and gap. | | |

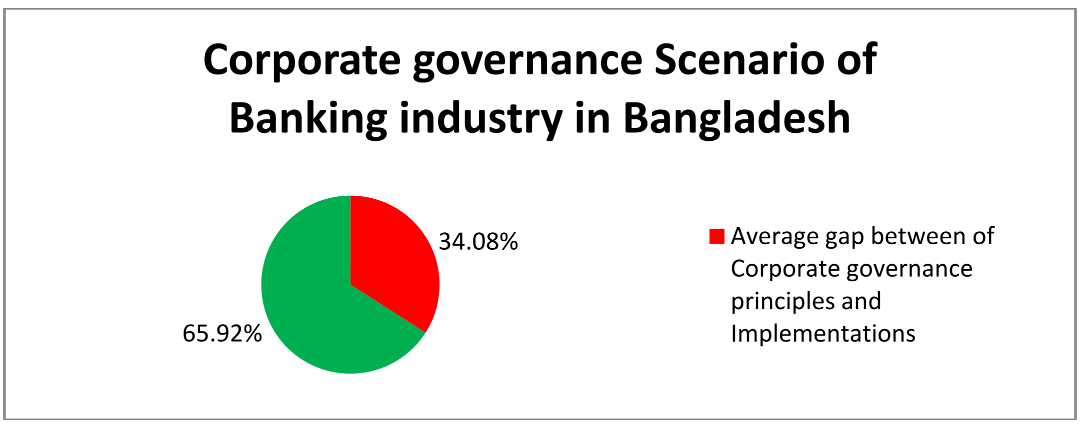


*Figure 2:* The pie chart had shown the average value of banks industry international corporate governance principles implementations and gap

Figure 03 had to show a pathway of bridging between international principles and practice of corporate governance: a study of the banking industry in Bangladesh. The corporate governance set by a vision, mission, objectives, smart goals, strategy all were achieved the board of directors and committees, legal and regulatory framework, organizational hierarchy, monitoring and internal control, transparency and accountability, policies and procedures.

The appendices 01 had to show the Bangladesh bank guidelines for corporate governance. Appendices 02 had to show the BSEC complains and guidelines to achieve the compliance report on SEC notification. Appendix 02 also includes the Board meeting held and director attendance, and share-holding pattern.

Appendix 03 certificates of compliance with conditions of corporate governance guidelines to the shareholder of the particular bank. All leading banks in Bangladesh are with own corporate governance policy, code of conduct; ethics and practice its.

International corporate governance principles are not mentioning the corporate governance it also states the organizational, cultural, legal, industry practice, political and social factors. The international corporate governance principles had nine principles Bangladesh banking industry implements the almost seven principles. The shareholder return and the operational performance the world principles were the focus board attention on optimizing over time the returns to shareholders. In particular, the company should strive to excel in comparison with the specific equity sector peer group benchmark.

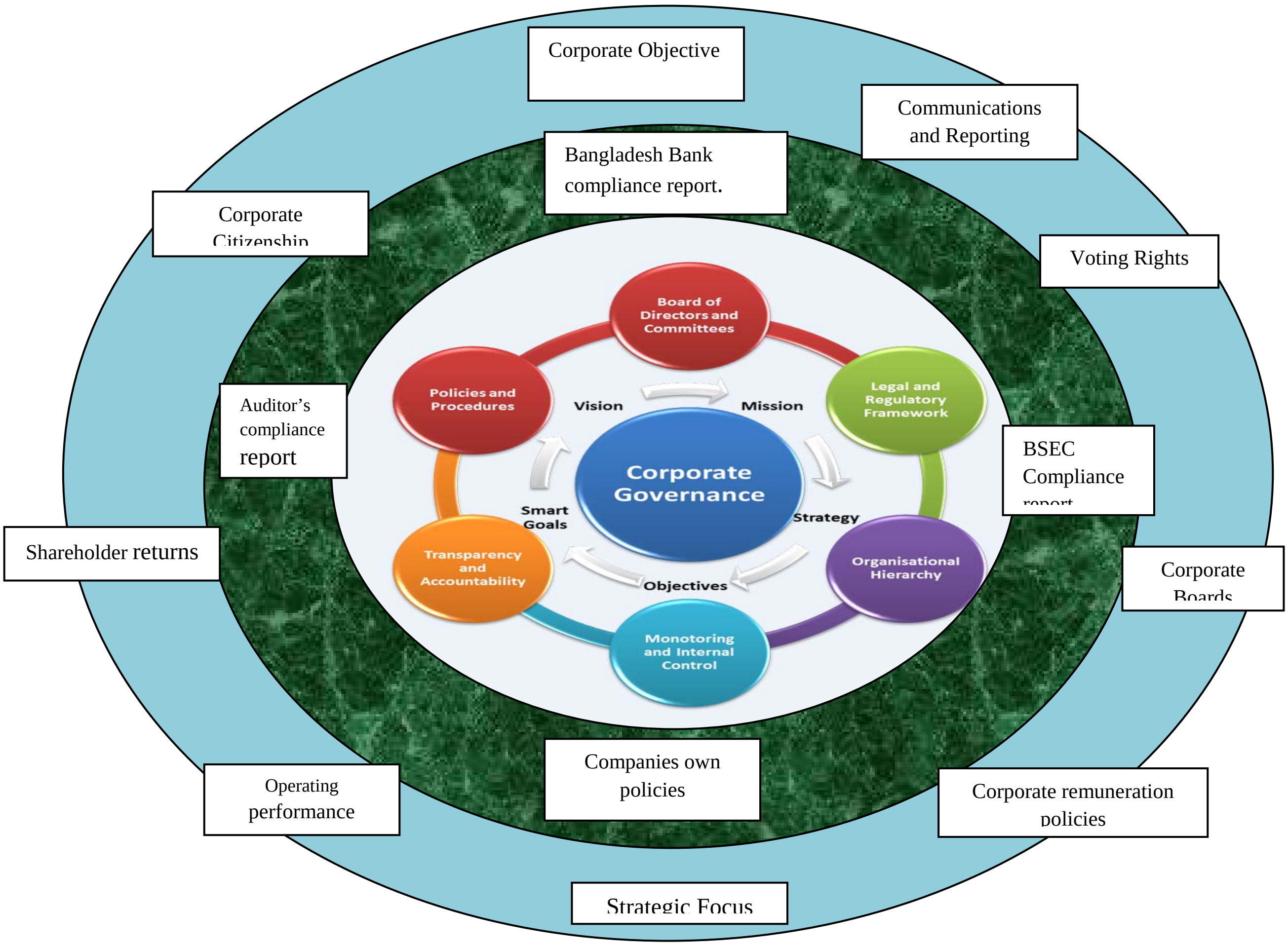


*Figure 3:* Elements of Corporate governance in Bangladesh in Banking Industry

## VI. Conclusion

Corporate governance is of paramount importance to a company and is almost as important as its primary business plan. When executed, it can prevent corporate scandals, fraud and the civil and criminal liability of the company. It also enhances a company's image in the public eye as a self-policing company that is responsible and worthy of shareholder and debt holder capital. It dictates the shared philosophy, practices and culture of an organization and its employees. Corporate governance keeps a company honest and out of trouble.

The research study It has been found that 65.919% implementation international corporate governance principles and 34.081% average gap of the banking industry in Bangladesh. As per figure 03, the corporate governance set by a vision, mission, objectives, smart goals, strategy all were achieved the board of directors and committees, legal and regulatory framework, organizational hierarchy, monitoring and internal control, transparency and accountability, policies and procedures.

We experience our everyday excellence through the trio of phenomena -'Transparency', 'Accountability' and 'Ethics'; the first is mirrored in the fact-sheet of our banking operations while the second persists in compliance of regulations and laws. The third is inspired by our deep-rooted culture of fairness in all spheres of business.

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# Evaluation Strategies of Credit Risk used by Commercial Banks Listed in Palestine Stock Exchange (PSE)

By Sharif Musbah Abu Karsh & Radwan Mahmoud Abumwais
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*Abstract-* This study explains the "evaluation of the credit risk strategies used by commercial banks listed on the Palestine Securities Exchange" through the methods used by banks in assessing customers' credit requests, whether banks differ in the use of these methods and whether they differentiate between customers in using these Methods. The questionnaire was designed to suit the objectives of the study. Twenty-one questionnaires were distributed to commercial banks in the credit facilities and loans department. These are: National Bank, Palestine Investment Bank, Bank of Palestine, and Al Quds Bank. We excluded Palestinian Islamic bank and Arab Islamic bank, because of the different nature of the work of loans in Islamic banks compared with commercial banks in terms of: Murabaha, Musharka, it adopts laws in line with Islamic rules. The following statistical tools were used: average percentage, Ranking and Chi-square. It was found that all commercial banks in Palestine use the above methods of evaluation, as they place more emphasis on 5C's, LAPP Method, Past Experience, 5P's and Financial Analysis respectively. It was also found that natural persons and NGOs were treated in the same way by banks in assessing their credit applications; however, they differed in the treatment of business firms. The researchers recommend the following: First, more systematic and efficient analytical procedures are used for assessing the three risk categories according to the nature of transaction, cause and effect. Second, establishing an industry-wide institute for conducting economic studies relative to each financial intermediary with data bank for their information system.

*Keywords: credit risk, financial intermediaries, palestine securities exchange.*

*GJMBR-C Classification: JEL Code: G21*

EVALUATIONSTRATEGIESOFCREDITRISKUSEDBYCOMMERCIALBANKSLISTEDINPALESTINESTOCKEXCHANGEPSE

*Strictly as per the compliance and regulations of:*

# Evaluation Strategies of Credit Risk used by Commercial Banks Listed in Palestine Stock Exchange (PSE)

Sharif Musbah Abu Karsh [α] & Radwan Mahmoud Abumwais [σ]

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*Keywords: credit risk, financial intermediaries, palestine securities exchange.*

## I. Introduction

Uncertainty cannot be entirely eliminated and wherever there is uncertainty there is risk. As [Drucker, 1989] put it: 'To try to eliminate risk in business enterprise is futile, risk is inherent to commitment of present resources to future expectation Indeed, economic progress can be defined as the ability to take greater risks. The attempt to eliminate risks even the attempt to minimize them can only make them irrational and unbearable. It can only result in greatest risks of all: rigidity." Credit results in grouping the risks into three main categories, according to transaction, cause and effect. Risk by transaction is the exchange rate risk associated with the time delay between entering into a contract and settling it. The greater the time differential between the entrance and settlement of the contract, the greater the transaction risk, because there is more time for the two exchange rates to fluctuate such as lending risk, trading risk, underwriting risk, asset liability risk . Risk by cause which caused by several factors such as credit risk, market risk, performance risk, interest rate risk , while Risk by effect results to undesirable situations which puts the company's resources, operations, employees' morale and the people the conduct business with at stake such as capital risk, income risk, opportunity risk, legal liability risk. The growing awareness that in the modern business world the risks have reached levels where formal systems of management and control are essential Deregulation is allowing into financial markets a wide range of institutions with little prior involvement in such activities mergers and acquisition are giving rise to large group structures in which traditional banking competence has to work alongside other traditions.

## II. Conceptual Framework

The financial system in a modern economy is more sophisticated as it has a vast network of various institutions with modern facilities. Its operations cover all commercial and industrial centers of the world. Its policies and programs play a major role in the social and economic development of the region concerned. In fact, the financial centers of the world like New York, London, Singapore and Hong Kong are all prosperous places. The relationships among the suppliers and requires of funds and financial intermediaries is shown in figure 1:

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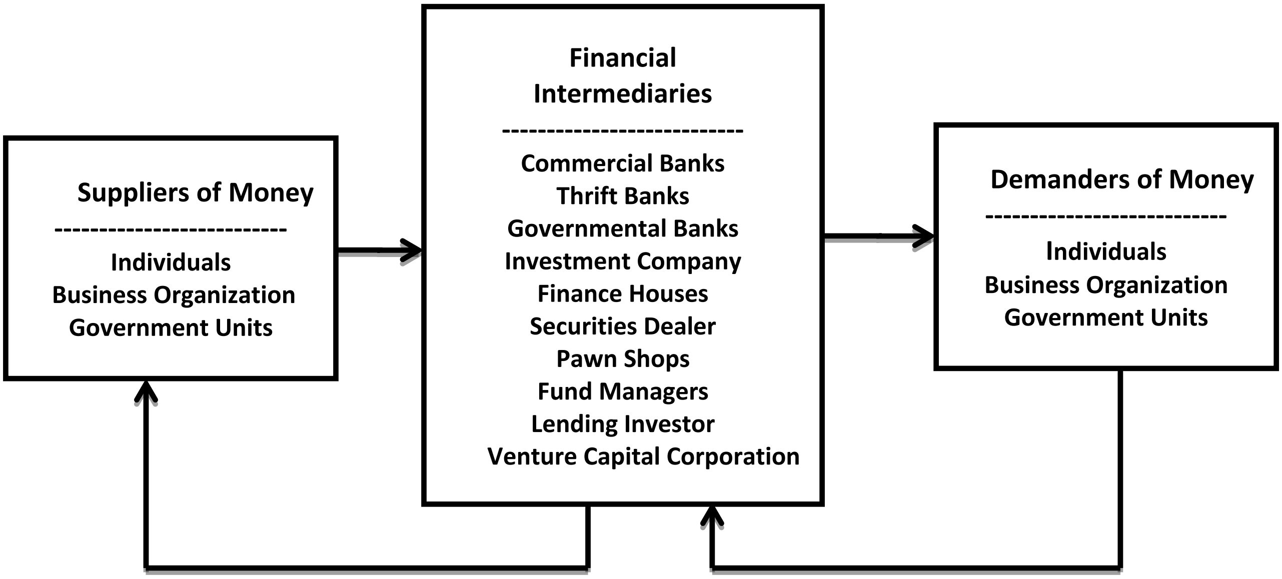


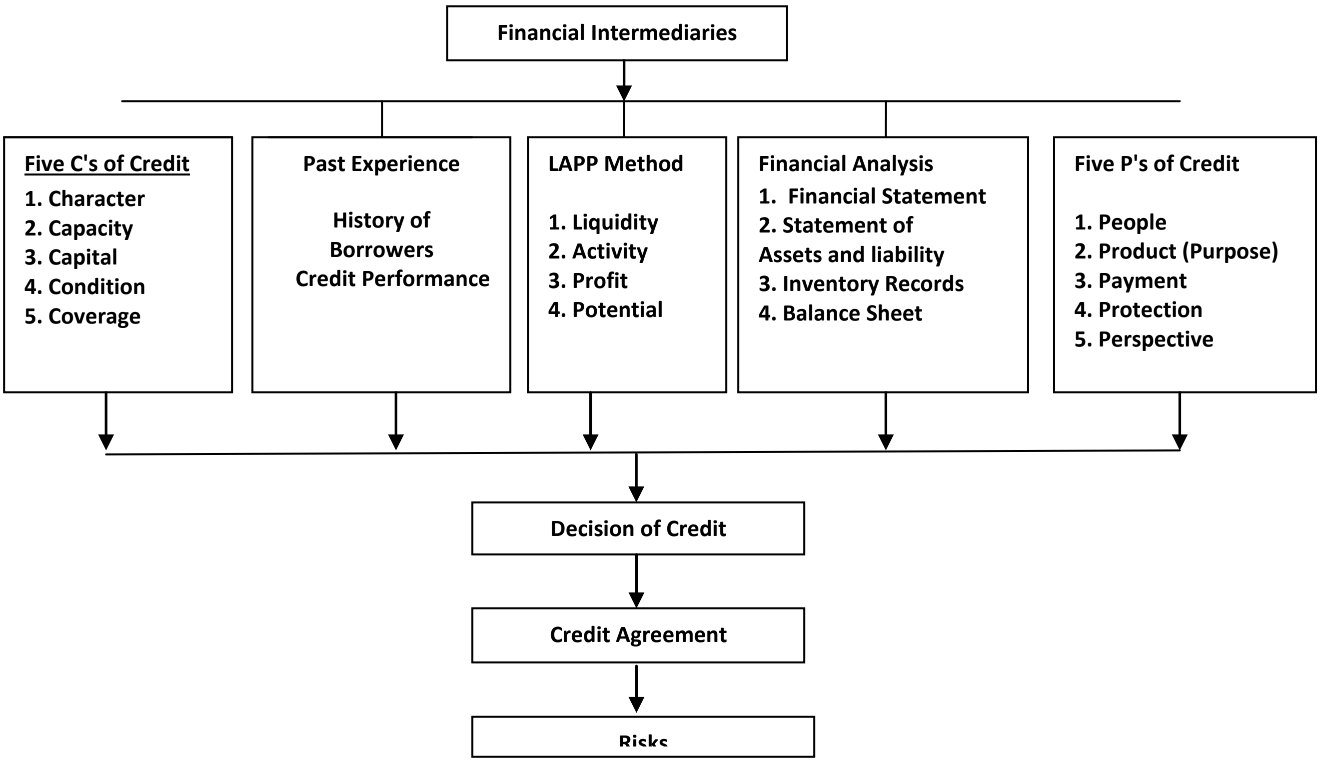

Adapted from the Unpublished Thesis [Abu Karsh, 1996]

*Figure 1:* How Financial Intermediaries Work

Financial intermediaries play a vital role in the economy by channeling funds from surplus to deficit spending units in the process; They issue securities to their owners and creditors in exchange for funds, the funds they require are " repackaged " and provided to other economic units. In the recent days, there is a big gap between the rich and the poor and many individuals either invest on their business or lend individuals or business organization. The financial intermediaries use various credit evaluation methods and criteria. While these are not mutually exclusive they tent to complement and reinforce each other that the subjectivities of one are strengthened by the objectivity of the other. Among these are shown in figure 2.

## III. Study Model

The financial intermediaries' use various credit evaluation methods and criteria, presented below the Model of study as shown in figure 2 based on previous studies that implemented internationally.




Various Credit Risk Evaluation Techniques and Criteria

*Figure 2:* Paradigm of the Study

## IV. Study Questions

This study aims to look into how the Commercial Banks Listed in Palestine Stock Exchange (PSE) an assessing the credit-worthies of their borrowing clients and the risks that they assume, In order to accomplish the main objective of this study, answers to the following specific sub problems are sought:

1. What are financial intermediaries and how may they be classified?
2. How does the respondent's commercial bank assess credit worthies of their borrowing clients?
3. In what aspects of the different credit evaluation techniques do subject commercial banks differ?
4. Are there significant differences in the techniques used by the subject commercial banks in a assessing their clients' credit worthies when the clients are classified into: Natural Persons, Business Organization, and Non– Business Organization.
5. What are the risks associated with the selected commercial bank credit decision and how do they differ in risks assumed?
6. Are there significant differences in the risk assumed by the subject commercial banks when the risks are classified according to, Transaction, Cause, and Effect?

## V. Study Methodology

*a) Method*

The study made use of the descriptive research in the sense that it sought to describe, evaluate and compare the business operation practices of the subject Commercial Banks Listed in (PEX) in terms of how these institutions assess the credit – worthiness of their borrowing clients and the factors they consider when they assume risks.

*b) Instrumentation*

Pertinent data from both primary and secondary sources [, i.e.] the respondent themselves; different financial intermediaries' brochures, pamphlets and other publications relative to the financial system were collected through the various data gathering. The unstructured interview was utilized to clarify and/or reinforce data gathered, the perceptions of the top executives of the selected Commercial Banks on points focal to this study. The Principal data gathering instrument is a six-part researcher's constructed questionnaire which was conceptualized and prepared on the basis by of their readings and the books of international Trade Credit Management. The distribution of questionnaires started mid-June 2017 and was concluded the second week of July 2017. The questionnaire was validated by some credit executives not necessarily coming from the identified respondent companies.

*c) Selection of Respondents*

All Financial intermediary groupings are represented by six Banks since the Islamic Bank of Palestine and Arab Islamic Banks are not commercial banks, Thus they are excluded. From each of the four respondent banks five highest-ranking executives from the facility and collection Department, since Respondent Corporation and executive respondents were purposively chosen, there was no need for statistical sampling design. The (21) accomplished questionnaires recovered from the 21 executives of the 4 respondent banks represents a recovery rate of (100%), still within the 5% margin of error set for this study.

*Table 1:* Number of Respondents by Intermediary

| The Bank | No. of Respondent | Percentage | Valid Percentage | Cumulative Percentage |
|---|---|---|---|---|
| National Bank TNB | 6 | 28.6 | 28.6 | 28.6 |
| Bank of Palestine | 5 | 23.8 | 23.8 | 52.4 |
| Al-Quds Bank | 5 | 23.8 | 23.8 | 76.2 |
| Palestine Investment Bank | 5 | 23.8 | 23.8 | 100.0 |
| Total | 21 | 100.0 | 100.0 | |

## VI. Significance and Scope of the Study

*a) Significance*

The researchers believe that extending credit is business, Therefore it is more important that it be managed and operated well, that its advantages may serve not only a few but the economy as a whole. The outcome of this study can provide general guidelines to financial intermediaries all over the country which could serve as a reference for developing their own credit risk evaluation practices. This would, in turn, assure the positive and productive evolution of such financial intermediaries as its primary contribution to the development of the social and economic conditions of the country.

*b) Scope and Limitations*

The study centered on local Banks Listed in Palestine Securities Exchange (PEX) and authorized by Palestine Monetary Authority (PMA) as of June 31, 2017, Table 3 shows the Local Commercial Banks Listed in Palestine Securities Exchange (PEX).

*Table 3:* Structure of the Palestine Financial System

| Palestine Financial System Components Palestine Monetary Authority | | | |
|---|---|---|---|
| 1. Local Banks | No. Branches | 2. Foreign Banks | No. Branches |
| Bank of Palestine | 17 | Cairo Amman Bank | 22 |
| National Bank of Palestine | 10 | Arabic Bank | 27 |
| Palestinian Investment Bank | 14 | Jordan Bank | 30 |
| Arabic Islamic Bank | 11 | Egyptian Arab land Bank | 7 |
| Palestinian Islamic Bank | 18 | Jordanian Commercial Bank | 5 |
| Al-Quds Bank | 23 | National Bank of Jordan | 6 |
| AL-Safa Bank | 1 | Housing Bank for Trade & Finance | 13 |
| | | Jordan Kuwait Bank | 3 |
| Total | | Total | |
| 3. Exchange Companies | 257 | 4. Specialized Lending Institutions | 6 |
| Total | 257 | Total | 6 |

*Source, Palestine Monetary Authority [PMA, 2017]*

## VII. Review of Related Literature and Studies

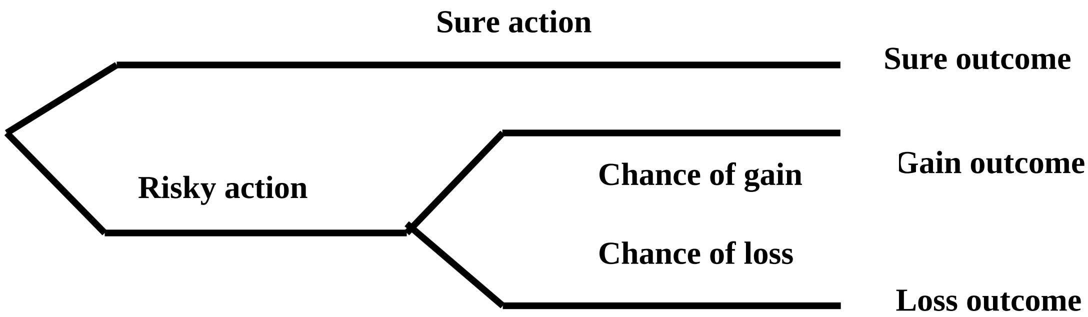
[Bass, 1979] in his book entitled "Credit Management "emphasized on the reasons why account is outstanding. The author mentioned three reasons why an account is outstanding. are: inefficiency, dissatisfaction and deliberate policy. Inefficiency: which may be due to shortage of staff or due to organizational structure, Sometimes the real reason is not known until persistent probing from a supplier unearths a fault in the system no one had noticed. Bass further stated that inefficiency might be remedied by the credit managers reviewing the invoice–approval procedure, by conducting" administrative visits," that is meeting the clerk responsible for handling goods received notes and finally , by deciding whether to live with it or to take a tough line of action. The writer, however, warned that this should be handled with care so as to retain goodwill rather than to insist on immediate action. Dissatisfaction: An account remains outstanding due to customer dissatisfaction a customer may be dissatisfied due to a legitimate complaint which brought to the notice of the company but remained unresolved. A customer may withhold payment because of increase in price or shortage in supply of his goods to avoid customer dissatisfaction; Bass suggests that a joint visit with the salesman. He however, points out that if it is impossible, the next line of action would be to identify and isolate the amount in dispute and to persuade the customer to pay everything else. The author further states that sometimes the customer is slow in paying because the supplies had been delivering ahead of schedule, The customer may instead store the goods and instructed the accounting department not to pay until the due date assuming Unusual word pair delivery. In a matter of this nature, the author advocates a credit man's visit to settle the differences. Deliberate Policy: This is a situation where some companies indulge in the practice of taking as much credit as they can get away with, without any control. The ultimate result is that the company will run out of working capital, and will resort to giving flimsy excuses to the creditor. The author advises that the credit manager must be careful and must be able to see through these attempts to hide the fact that his company is being used to provide free working capital.

[Power, 1990] in her study entitled "The five "C's" of lender liability avoidance" explained that commercial banks today face a variety of loan related risks including the risks of being involved in a lender liability action. She analyzed some of the trends emerging from the court system in lender liability cases and summarized some of the managerial implications of recent court decisions. According to her areas of potential lender liability risks are; (1) liability from negligent processing of loan applications, (2) liability for failure to negotiate in good faith, (3) liability for failure to lend without just cause, (4) liability for aiding and abetting borrower in violation of securities law, (5) liability for negligence in administration of a loan, (6) liability for exercising undue influence over a borrowers business, (7) liability for improper acceleration of fore closure, (8) liability for supplying information about customer credit worthies.

In a study entitled "Back to basics: Fundamental loan principles and the commercial lending practice " [Scott, 1992] stated that throughout modern banking history, banks had experienced periods of deteriorating credit quality or national recessions. In fact, the study showed many banks, while others failed during healthy times with record number of banks which failed 1980s' experts from many disciplines lectured for a return to basics or principles. These basic loan principles are timeless, what cause bankers to lose perspective is the internal pressures and external influences upon them. These factors cause changing the interpretation of the principles and unusual word pair practices within lending. An understanding of the ways external pressures can influence the credit process, aid bankers in following sound principles.

[Raymond,1991] found in his study that commercial lenders' use of accounting information depends on the credibility of the borrowing firms' management, referred to as capacity in the banking industry. He hypothesized that positive accounting information Affects lender's judgments and loan decisions more favorably when accompanied by positive signals of character (supporting loan approval) than when combined with negative character signals (supporting loan denial). Further he stated that this accounting / character interaction is predicted to be smaller for novice lenders than experts, owing to the novices' lack of experience in assessing character. Experts are expected to recall more total facts in a hypothetical loan application than novices, especially when accounting and character facts are inconsistent, supporting different loan decision.

[Fan Li, 2014] stated in his M.A thesis that Banks today are the largest financial institutions around the world, with branches and subsidiaries throughout everyone’s life However, commercial banks are facing risks when they are operating. Credit risk is one of the most significant risks that banks face, considering that granting credit is one of the main sources of income in commercial banks. Therefore, the management of the risk related to that credit affects the profitability of the banks. Nominalization is to provide stakeholders with accurate information regarding the credit risk management of commercial banks with its impact on profitability. The main purpose of his research is to investigate if there is a relationship between credit risk management and profitability of commercial banks in Europe. The research collects data from the largest 47 commercial banks in Europe from 2007 to 2012 and formulates four hypotheses which are related to the research question. A series of statistical tests are performed in order to test if the relationship exists. Other statistical tests are performed to investigate if the relationship is stable or not. To decide in risk situation there are two actions involved one action called the "SURE ACTION" is the status quo while the other action called the “RISKY ACTION “has two possible outcomes either a gain or a loss. If we knew that the gain outcome was going to occur, we would select the risk action; if we knew that the loss outcome was going to occur we would select the sure action. The problem is that we do not know for sure which of these two outcomes will occur; the outcome that occurs depends on an uncertain event for which we have only, as shown in Figure 3.




Probabilistic knowledge this prototypical risky situation will be called
"BASIC RISK PARADIGM"

*Figure 3:* Basic Risk Paradigms

[Abbadi and Abu Karsh, 2013] They conducted a study title "Methods of evaluating credit risk used by commercial banks in Palestine, They classified these methods into five techniques: 5C's of credit, 5P's of credit, LAPP method, financial analysis, past experience. "They said that all banks in Palestine use most of the above five methods". The average percentages were used to find out the elements the banks concentrate most in each method, and it was found that banks in Palestine concentrate more on collateral, credit records, and ability to pay including liquidity and cash flow. They concentrate less on conditions, purpose and product. It was also found through hypothesis testing that there is no difference between banks in using the LAPP and 5P's methods, but they differ in using the 5C's and FAPE method. Another test was conducted found that banks operating in Palestine treat natural persons and NGO's in the same way in evaluating their credit application, but differ in treating business organizations and artificial persons. A new model was developed by the authors called PACT: representing Person, Activity, Collateral, and Terms. Each variable contains several elements and a weight (score) for these elements were estimated to make them easy to use by the bank's credit managers. Then the bank adds the score for the customer and evaluates each customer based on a scale of 100.

## VIII. Brief history of Palestinian Commercial Bank

Before the occupation of the West Bank in 1967, there were 11 commercial banks in Palestine (8 in the West Bank and 3 in Gaza) with 30 branches of which 26 were the West Bank and only four in Gaza. At that time their credit facilities represented 71.4 % of their deposits [ESCWA 1987].

The Israeli authorities used military orders to close all bank branches on the eve of occupying the land (West Bank and Gaza) in 1967. They froze their assets and confiscated the cash in their vaults and transfer them to the Central Bank of Israel. After a few years, they issued military orders allowing Israeli Banks to open branches in the West Bank and Gaza. Only 4 banks opened with 22 branches distributed in main cities of the occupied area: Bank Leumi 13 branches, Bank Discount, six branches; Bank Hapoalim, two branches; and Barclays Bank, one branch [ESCWA 1987]. They remain alone until 1981 when the Israeli High Court of Justice allowed Bank of Palestine to reopen its closed branches in Gaza. Israeli banks were unable to attract Palestinian deposits, so they lacked funds, which made them dependent on government money collected from taxes imposed on the Palestinians.

Their roles were limited to transferring money and to paying checks to Palestinians who received their salaries in Israeli Shekel. Israeli banks were unable to provide a financial intermediary function, as very few customers agreed to deposit their money with them, and their loan portfolio was less than 8% of their assets. Most of their facilities were overdraft granted to merchants who had business with Israeli partners. Banks also were facilitating a trade of Palestinian merchants who needed to open letters of credit or letters of guarantees to import from Israel. Despite this, these facilities were profitable to those banks, as they were charging three times the fees banks charge in neighboring countries; but due to lack of business very few could make a profit and sometimes losses caused many of them to close their branches. In 1987, due to the Intifada, all of these banks were closed [Harris, 1988] There were no banks in Palestine until 1994, except one branch of Cairo-Amman Bank, which was reopened in 1986 in addition to the Bank of Palestine in Gaza. After the Oslo agreement in 1993, the Wadi Araba Agreement between Jordan and Israel and the Paris Accord in 1994, Israeli authorities allowed Jordanian banks to reopen their branches closed in 1967. They also allowed the Palestinians to establish the Palestine Monetary Authority in 1995 to overview banks and to give licenses to the newly established banks [Abbadi, 1997]. Since 1995, the PMA has issued several laws, and regulations; the most important are the Banking Law, the PMA law and the Money Changers Law. Recently the PMA drafted a Central Bank Law which is awaiting a Presidential decree. Currently, three currencies are circulated in Palestine: the US dollar, the Israeli shekel, and the Jordanian dinar. Since its establishment, the PMA has issued several licenses to new banks and allowed banks to open new branches, which made the number of banks to increase from 2 in 1994 to 17 by end of 2012, with over 226 branches and offices, now in 2017 they decrease to 15 banks, with over 206 branches and offices.

## IX. Study Results Questions

### *a) Results Question 1: Financial intermediaries and their classifications*

A financial intermediary as defined in the Dictionary of Banking Terms, is a financial institution that accepts deposits from the public and makes loans to those needing credit.

These are financial institutions that allow the movement of capital from surplus units to deficit units by accumulating funds from the public (through deposits) and lending it to those needing credit. According to Palestine Monetary Authority (PMA), financial intermediaries are classified into: 1- Local banks. 2- Foreign banks. 3- Exchange companies. 4- Specialized lending institutions.

### *b) Results Question 2: Assessment of borrowers' Credit-Worthiness*

Five major credit evaluation techniques are employed by respondent's financial intermediaries in determining the credit-worthiness of a borrower. These are, enumerated in the order of popularity among respondents, five C's of Credit, LAPP method, Past Experience, five P's of Credit, and Financial Analysis. Although not specifically classified as a credit the respondent companies' credit evaluation tools which all respondents found as adequate enough safeguard from delinquent borrowers. All respondent groups ranked this credit equal with 5C's of credit.

*Table 4:* Evaluation Criteria in Assessing Credit-Worthiness

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| 5C's of Credit | 9 | 42.9 | 4.8 | 4.8 |
| LAPP Method | 5 | 23.8 | 23.8 | 28.6 |
| 5P's Credit | 1 | 4.8 | 4.8 | 33.3 |
| Previous Experience | 4 | 19.0 | 19.0 | 52.4 |
| Financial Analysis | 1 | 4.8 | 42.9 | 95.2 |
| Nothing detailed | 1 | 4.8 | 4.8 | 100.0 |
| Total | 21 | 100.0 | 100.0 | |

#### i. *Most Important C in Credit Evaluation*

Table 4 reveals that the 5C's of Credit ranked first among the various methods of ascertaining clients' credit worthiness. Although subjective in nature, it is an effective credit assessment tool which calls for a thorough analysis of the borrower's character, his capacity to pay, capital or owners' equity, the conditions surrounding the loan or the environment affecting the investments, and the collateral he may be required to put up or offer to secure the loan. As to which among these five factors is given the most importance and / or weigh the most in making credit decisions.

*Table 5:* Most Important C in Assessing Credit-Worthiness

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Character | 14 | 66.7 | 4.8 | 4.8 |
| Capability | 5 | 23.8 | 66.7 | 71.4 |
| Capital | 1 | 4.8 | 23.8 | 95.2 |
| Condition | 1 | 4.8 | 4.8 | 100.0 |
| Collateral | 0 | | | |
| Total | 21 | 100.0 | 100.0 | |

#### ii. *LAPP Method Most Extensively used in Appraising Business Health*

Regarding the banks depending on the LAPP method, "Profitability" is the most significant accounting for 38.1% of the sample followed by "Liquidity" accounting for 33.3% of the respondents and in the final place was "Activity" accounting for 28.6% of the sample.

*Table 6:* Most Important LAPP Method in Appraising Business Health

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Liquidity | 7 | 33.3 | 28.6 | 28.6 |
| Activity | 6 | 28.6 | 38.1 | 66.7 |
| Profitability | 8 | 38.1 | 33.3 | 100.0 |
| Potential | 0 | 0 | 0 | 0 |
| Total | 21 | 100.0 | 100.0 | |

iii. *"5P's" Method in Assessing a Borrower's Credit-Worthiness*

Table 7 shows that the five P's were the least ranked among the decision criteria in credit extension. It was noted earlier that the 5 P's were essentially the same in terms of application as the other two techniques i.e. 5 C's and the Lapp. Its unpopularity therefore could be attributed to its being the latest entry into the financial industry's vocabulary.

*Table 7:* Most Important "P" in Assessing Credit-Worthiness

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| People | 3 | 14.3 | 14.3 | 14.3 |
| Product | 2 | 9.5 | 9.5 | 23.8 |
| Payment | 12 | 57.1 | 57.1 | 81.0 |
| Perspective | 2 | 9.5 | 9.5 | 90.5 |
| Protection | 2 | 9.5 | 9.5 | 100.0 |
| Total | 21 | 100.0 | 100.0 | |

iv. *Previous Experience*

It's a good tool in measuring the history of a borrower's credit performance, according to Table 15 shows that 4 respondents were chosen it, and ranked "third" among the five evaluation criteria the banks used in assessing their credit worthiness.

v. *Financial Analysis*

Credit analysis involves a wide variety of financial analysis techniques, including ratio and trend analysis as well as the creation of projections and a detailed analysis of cash flows. Credit analysis also includes an examination of collateral and other sources of repayment as well as credit history and management ability. Analysts attempt to predict the probability that a borrower will default on its debts, and also the severity of losses in the event of default.

*c) Results Question 3 Credit Evaluation Aspect Where Subject Financial Intermediaries Differ*

The four respondent financial intermediaries employ all the credit evaluation tools in credit extension but in varying degrees depending upon the peculiarities the loan and the borrower. While most of the respondent extensively use the five C's approach, the level of usage of the other techniques, i.e. LAPP method, five P's approach, financial analysis and past experience differ significantly among the different financial institutions surveyed.

*d) Results Question 4: Credit Evaluation Techniques Used for Different Types of Borrowers*

Three types of borrowers were identified in this study; natural persons which refer to individual borrowers, business organization, and non-business organization which are both represented by legal personalities but differ in the focus of their operations the former being profit oriented while the latter aims for public services. Business organizations are the most preferred debtors by all respondent groups, Natural persons ranked second among the four financial intermediaries. Whether the borrower is a natural person, business organization or a non-business organization, the order of importance given to the different credit evaluation tools are essentially the same, that is, the five C's of credit ranks first, followed by LAPP method , Past experience, five P's and financial analysis respectively. For natural person and business organization borrowers, the prioritization of the four respondent groups to the various credit evaluation tools are in perfect conformity while a slight deviation is observed when respondents assesses non-business organizations. From the foregoing was based the rejection of null hypotheses regarding the non-significance of difference of credit evaluation tools used by the different respondents when the clients are grouped into: natural person, business organization, non-business organization.

*Table 8:* What banks employees (respondents) prefer to work with

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Business Organization | 15 | 71.4 | 71.4 | 71.4 |
| Natural Persons | 5 | 23.8 | 23.8 | 95.2 |
| Non-Business Organization | 1 | 4.8 | 4.8 | 100.0 |
| Total | 21 | 100.0 | 100.0 | |

*e) Results Question 5: Risk Assumed by Subject Financial Intermediaries*

Credit risk evaluation results are used by the respondents as bases for both ante and post credit decisions and activities. Ranking first as a consequence of credit risk evaluation is the formulation and implementation of sound credit and collection policies and procedures, but the establishment of good internal and external relationships and contacts is the most important for the four financial institutions. To deal effectively with risks inherent to any business activity, respondent financial intermediaries grouped them into three categories: (1) by transaction, reported to be the most frequently incurred by the four respondent groups, TNB, Bank of Palestine, Palestine investment bank, Al-Quds bank, (2) risks by cause, reported to be the second most frequently incurred by the four respondent groups, and (3) risks by effect, the least encountered.

*Table 9:* Debtors Preferred in the Extension of Credit

| Group | | N | Mean Rank |
|---|---|---|---|
| Normal persons | TNB | 6 | 11.67 |
| | Bank of Palestine | 5 | 9.60 |
| | Al-Quds bank | 5 | 11.70 |
| | Palestine Investment bank | 5 | 10.90 |
| | Total | 21 | |
| Non-Business Organization | TNB | 6 | 17.25 |
| | Bank of Palestine | 5 | 6.50 |
| | Al-Quds bank | 5 | 10.90 |
| | Palestine Investment bank | 5 | 8.10 |
| | Total | 21 | |
| Business Organization | TNB | 6 | 11.83 |
| | Bank of Palestine | 5 | 10.00 |
| | Al-Quds bank | 5 | 11.50 |
| | Palestine Investment bank | 5 | 10.50 |
| | Total | 21 | |

*f) Results Question 6: Differences in the Evaluation Criteria Used by the Respondent Companies for the Different Types of Debtors*

From the table 20 could be drawn a conclusion that the credit evaluation criteria used by the four respondent groups for the different types of debtors i.e. natural persons , business organizations , and non-business organizations , are not significantly different from each other, because the Asymp. Significance results are too close. While statistical proof for this conclusion is superfluous since the rankings of all are evidently identical except for the reversal of positions of the Financial analysis and the five P's, Because the respondents did not use these methods because of insufficient experience and take a longer time in evaluation process, so the results were few for other variables, this not being not significant enough to alter the non-significance of difference. Presented to support above arguments which illustrates the almost perfect conformance of the ranking of the five credit evaluation tools as they are employed to assess the credit-worthiness of the three debtor categories i.e. natural persons , business organizations, and non-business organization.

*g) Results Question 5: Credit Risks Assumed by Respondent Financial Intermediaries*

No amount of protective and/or preemptive measure will entirely eliminate the risks associated in the conduct of any business undertaking. It can only be minimized or held to a tolerable level. Credit risk is one of the primary risks in bank lending, the risk that a borrower will not pay a loan as called for the original agreement, and may eventually default in the payment Various credit risk evaluation procedures are employed by financial institutions, results of which are based decisions to commit company funds. The formulation and implementation of sound credit and collection Policies is the best hedge against credit risks. The installation of preventive measures i.e. policies designed to uncover the weaknesses as well as identify the strong points of a prospective borrower could greatly reduce the evolution of bad accounts since this will preempt the granting of loans to unworthy customers. In fact, all respondent financial intermediaries view that the outcome off credit evaluation is considered to trigger off formulation of credit policies and collection practices when 33.3 % of the respondents identified this as most useful technique or basis of policy formulation.

*Table 10:* Perspective according to respondents

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Establishing internal and external good relationships | 6 | 28.6 | 28.6 | 28.6 |
| To maintain and execute sound policies and procedures for crediting and collecting. | 7 | 33.3 | 33.3 | 61.9 |
| To provide informal a advice for the clients | 2 | 9.5 | 9.5 | 71.4 |
| To provide enough protection to invest in the due accounts. | 4 | 19.0 | 19.0 | 90.5 |
| None of the above. | 2 | 9.5 | 9.5 | 100.0 |
| Total | 21 | 100.0 | 100.0 | |

From the above table, we see that the most used practices in the institutions is to maintain and execute sound policies and procedures of crediting and collecting with a percentage of 33.3%, followed by establish internal and external good relationships with a percentage of 28.6%, and then with 19% providing enough protection to invest in the due accounts.

*Table 11:* Perspectives according to institution

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| To establish internal and external good relationships | 5 | 23.8 | 19.0 | 19.0 |
| To maintain and execute sound policies and procedures for crediting and collecting. | 3 | 14.3 | 14.3 | 33.3 |
| To provide informal advise for the clients | 4 | 19.0 | 19.0 | 52.4 |
| To provide enough protection to invest in the due accounts. | 4 | 19.0 | 23.8 | 76.2 |
| None of the above. | 5 | 23.8 | 23.8 | 100.0 |

From the above table, we see that the most used practices in the institutions is to establish internal and external good relationships with a percentage of 23.8% and none of the choices provided in the table, followed by providing enough protection to invest in the due accounts and providing informal adviser for the clients with a percentage of 19%.

*Table 12:* Differences between Perspectives of the Intermediaries

| Practice | Order (according to institution) | Order according to respondents |
|---|---|---|
| To establish internal and external good relationships | 5 | 2 |
| To maintain and execute sound policies and procedures of crediting and collecting. | 2 | 5 |
| To provide informal a advise for the clients | 1 | 2 |
| To provide enough protection to invest in the due accounts. | 3 | 1 |
| None of the above. | 5 | 1 |

Ranked overall second as outcome of credit risk evaluation is the establishment of good internal and external relationships and contacts, the respondents indicating the need to develop goodwill among clients and create an atmosphere of mutual trust and respect as a way of increasing the probability that a borrower will make good of his promise fulfill his obligations.

From credit evaluation practices could be based decisions to provide for prompt asset turnover and adequate protection of investments in account receivable, with the respondents ranking it third among the post credit-related activities that management pursue. The least observed practice as a consequence of risk evaluation is the informal counseling of prospective borrowers on several factors governing credit practices and characteristics of the loan agreement as this is not expected to yield tangible results, this being purely exploratory. It could however hasten negotiation procedures, the other party gaining insight into his responsibilities as a debtor.

*h) Results Question 6: Differences in the Risk Encountered under the three Risk Categories*

Categorized by transaction, by cause, or by effect, the four financial intermediaries display differing Degrees of exposure to the different risks attendant with these three risk categories, this based on probability levels, and decision criteria for this study. The preceding findings further strengthen previous discussions regarding the unpredictability on risk which manifests itself in many forms under various circumstances: Transaction. Cause and Effect, Kruskal-wallis was used to examine the techniques used by the subject financial intermediaries in assessing the client's credit worthiness.

*Table 13:* Differences in the Risk Encountered

| | Bank | N | Mean Rank |
|---|---|---|---|
| Transaction | TNB | 6 | 8.33 |
| | Bank of Palestine | 5 | 6.00 |
| | Al-Quds Bank | 5 | 16.70 |
| | Palestine Investment Bank | 5 | 13.50 |
| | Total | 21 | |
| Cause | TNB | 6 | 12.58 |
| | Bank of Palestine | 5 | 13.20 |
| | Al-Quds Bank | 5 | 8.30 |
| | Palestine Investment Bank | 5 | 9.60 |
| | Total | 21 | |
| Effect | TNB | 6 | 10.92 |
| | Bank of Palestine | 5 | 10.60 |
| | Al-Quds Bank | 5 | 8.30 |
| | Palestine Investment Bank | 5 | 14.20 |
| | Total | 21 | |

## X. Recommendations

1. Financial intermediaries should deepen their experience on evaluation tools like LAPP method . financial analysis and the five P's approach as a strong support to their reliance with the traditional five C's of credit .
2. Establish an industry-wide institute for the cooperative effort aimed at conducting economic researches that would provide each financial intermediaries with data bank for their information system.
3. The enactment of a severe punishment law against those who evade payment that would deter people from committing the crime, in cooperation with the banking sector and the lending institutions, so that a law will be put in place to suit all parties.
4. Develop a computer-based system that would automatically assess a borrower's credit status once pertinent data about a prospective borrower is inputted into a computer. The system may either use any of the credit evaluation tools as a standard or a combination of all five techniques , depending upon the peculiarities of the need.
5. A more liberal credit granting to non-business organizations considering the social dimension of these undertakings. The subject financial intermediaries should give weight on social rate of return of an industry. To increase the probability of re-payment, lending institutions should extend technical assistance to this type of borrowers .
6. Institute more systematic and efficient forecasting procedures that would individually focus to the three risk categories i.e. according to transacting, cause, and effect.

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# Implementation of Contributory Pension Scheme (CPS) and the Challenge of Appropriate Employees' Pension Deductions in Nigeria: The Financial Managers' Review

By Philip Olawale Odewole & Titilayo Moromoke Oladejo

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*Abstract-* The study examined the reasons for the inappropriate employees' monthly pension deductions among the employees in the various Ministries, Department and Agencies (MDAs) in Nigeria as provided by the Pension Reform Act 2014 as amended. Descriptive and analytical methods were used to analyse the data. The results showed that misinterpretation of the provision of the act on mandatory deduction of 7½ % from employees' emolument by the MDAs is responsible for the inappropriate employees' monthly pension deductions. Also, the results revealed that MDAs adopted different bases in the determination of the employees' monthly pension contributions different from the basis adopted in the calculation of the employees' monthly pension deductions by the employer in the Budget Office as stipulated by the Act. The study concluded that only the adoption of uniform basis between the MDAs and the Budget Office (employer) as provided by the Pension Reform Act 2014 can guarantee appropriate and correct employees' monthly pension deductions among the workforce in the various Ministries, Departments and Agencies eliminate the under-deductions of monthly pension contributions and over-payment of gross monthly salaries.

*Keywords: pension reform act, mdas, contributory pension scheme, inappropriate deductions.*

*GJMBR-C Classification: JEL Code: J32*

IMPLEMENTATIONOFCONTRIBUTORYPENSIONSCHEMECPSANDTHECHALLENGEOFAPPROPRIATEEMPLOYEESPENSIONDEDUCTIONSIN NIGERIATHEFINANCIALMANAGERSREVIEW

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*Keywords: pension reform act, mdas, contributory pension scheme, inappropriate deductions.*

## I. Introduction

One of the most controversial public financial reforms in the recent Nigerian financial reforms' history is the implementation of the Contributory Pension Scheme. It is the most misunderstood Nigerian Public Financial Reform that have caused untold restlessness in the ranks and files of the federal government; employees in the public places. It is one of a few public policies that has defied meeting point between the employers and the employees in the public establishments and produced divergence of opinions among the stakeholders. Despite many organized seminars and conferences held to redefine and communicate a common ground of interpretation and agreement in order to consolidate the principles of its adoption for the uniform operation of the Of the Scheme to the entire populace. The solution to the challenges of its implementation is still a mirage in many Ministries Departments and Agencies in Nigeria while the center could no longer hold in parastatals.

Nigeria migrated from the Defined Benefit Scheme which is also known as Pay-As-You-Go with effect from July 1, 2004 to adopt a Contribitory Pension Scheme. The old pension scheme was characterized by countless defaults that have inflicted pains and hardships on both the state and the federal retirees. The payment of pension became a great burden to the governments. The pensioners were owed a backlog of arrears and there was no hope at sight for the settlement, coupled with the fact that the rate of retirement in the both federal and state establishments kept on increasing at an unacceptable proportion. Besides, there were no available records at that time to ascertain the actual number of federal and state pensioners. Few fund allocated for the payment of pensions was diverted. Ghost pensioners dominated the list of both federal and state pension payrolls. Budgetary allocations were not sufficient to make regular payments of pensions, with outright fraud and irregularities among the top echelons in pension houses. It was so clear that the federal government could no longer cope with the rising demands for the payment of pensions and gratuities of workers, whose final entitlements were based on length of service and career progression at the time of retirement.

The introduction of the Contributory Pension Scheme in Nigeria was therefore as a result of a failed implementation of Defined Benefits Scheme which could not meet the needs of the rising retiring officers' emoluments (Odewole, 2017). The Contributory Pension Scheme means that the new pension scheme is contributory, fully funded jointly by both the employers and employees. Unlike the old pension scheme where the scheme was only funded by the government through budgetary allocation, the Contributory Pension Scheme (CPS) entails that employee contributes money into the individual Employee's Retirement Savings Account (RSA), along side with the counterpart contribution by the employer into the same individual Employee's Account (RSA). There is third party custody of the funds

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contributed by both the employers and the employees into the RSA and assets are based on individual account. Under this new pension scheme in accordance to the Pension Act, 2004, the employees contribute a minimum of 7.5% of their monthly emoluments to the individual Retirement Saving Account open with the Pension Fund Administrator of their choice while the employer contributes the equivalent counterpart contribution of the same rate. The Act provides for the employees contribution of 2.5% for the military while the government contributes 12.5% of the monthly emoluments of the employees, making a total of 15% of the employee's monthly emolument on both side. The freedom of election is equally provided by the Act for every employer who may elect to contribute on behalf of the employees such that a total rate of 15% of employee monthly emolument is credited to the employee Retirement Accounts.

The reviewed Pension Act 2014 however adjusted these rates for both employers and employees. In accordance with this Act, employers now contributes 10% of the employee monthly emolument while the employee contributes 8% on monthly basis bringing the total to 18% of the employee monthly emolument instead of a total of 15% under the Pension Act, 2004. The provision of this Act has however not been implemented by both the federal and state government. The purpose of the contributory pension scheme is to ensure that all workers in public service and private sector receive retirement benefits as at when due, assist individuals to save for the rainy days, establish a uniform method of administering payment of retirement benefit in public and private sector and for the employees to have control over their Retirement Savings Account. The scheme is also intended to promote labour mobility and minimize incentives for early retirement. The era of transfer of service among the civil servants ended with the contributory pension scheme whereby with pension liabilities transferred from one agency to the other. The implementation of CPS promotes wider coverage of pension scheme in Nigeria. Movement from one organization to another that characterized the Pay-As-You-Go scheme does not affect the CPS. Also, the bottlenecks involved in the determination of qualifying years of service before a retiree qualifies for pension and the sharing formula among the employers where the employee works before his retirement is no longer necessary. The employees' right to the retirement benefits before the inception of the CPS, under the pay-as-you-go scheme is guaranteed under the contributory pension scheme by the issuance of a Federal Government retirement Bond which is redeemable upon retirement of the employee. The Retirement Benefits Bond Redemption Fund Account is domiciled with the Central Bank of Nigeria and is fully funded by payment of a regular 5% of the total monthly wage bill payable to all employees for the purpose of redemption of the Bond upon retirement by the employees. The scheme entrenches the principle of transparency and accountability, ensures that the employee receive his pension after retirement without any delay.

However, the intension of the scheme differs largely from the perception among the employees and the reality of its capacity to accentuate the sufferings of the employees after retirement. The scheme has generated contention and created a lot of controversy among the employees in many Ministries, Departments and Agencies shortly after its implementation, the impasse which is still unresolved in many public establishments. The bone of contention is in the appropriateness of the employee pension deductions that translate to monthly 7.5% of the emoluments. There are different versions of the interpretation of the 7.5% of the employee monthly pension deductions based on different treasury circulars issued on the scheme. Some MDAs interprete the 7.5% of the monthly emolument on the employee Basic Salary alone while others based the interpretation of 7.5% deductions on the employee basic salary in addition to transport and housing allowances, and the other category of the MDAs based the 7.5% interpretation of deductions on the employee's gross consolidated salary while a few based it on the take-home pay of the employee per month. These different versions and interpretations have resulted into disparity in the amount of employee monthly pension deductions among employees of equal grade levels and status in different MDAs operating the same salary structure which results into inappropriateness in the pension deductions on individuals employee as against the statutory requirement.

The objective of this paper is therefore to determine the correct mode of deduction that will translate to the appropriate employee monthly pension deductions in the original intention of the Act. The remainder of this paper is therefore arranged as follows: following the introductory section, section 2 reviews the literature, section 3 presents the methodology of the study. Section 4 presents the analysis and discussions of result. Section 5 concludes the study and offers some crucial policy implications.

## II. Literature Review

Pension is a monthly stipend payable to a retired officer until death under the Defined Benefit Scheme. It is a regular inflow of income accruable to retiree and payable by his employer after working for a certain number of qualifying years of service or attaining a prescribed number of years or having put in a qualifying service years . Pension is simply the amount set aside either by an employer or an employee or both to ensure that at retirement, there is something for employees to fall back on as income. It ensures that at old age, workers will not be stranded financially

(Fapohunda, 2013). Pension helps employees to adjust themselves properly into the society after leaving employment (Armstrong, 2010). It is also viewed as a method whereby an employee contributes into the pension scheme a regular saving of a certain proportion of his/her earnings during his working life to be utilized at a future date (Robelo, 2002). It is a certain amount paid by government or private company to an employeafter a qualifying periods of years of his useful life, or attaining a specified age in active service (Ahmad, 2006). It is a lump sum payment to an employee after fulfilling a condition for the payment of pension (Ozor, 2006).

Pension systems have been largely classified into four in Nigeria (Adebayo, 2006 and Ugwu, 2006), superannuating pension is a pension plan given to a worker who retires within a prescribed age of retirement stipulated by the prevailing condition of service, pension becomes compensatory when employee's post is abolished as a result of reorganization in the establishment and the employer cannot place him in the alternative employment. A retiring pension is a pension type granted an employee after a qualifying years of service or attaining the mandatory age of retirement while compassionate pension is where a pension scheme is not admissible or allowable on account of an employee's removal from the public office as a result of gross misconduct, insolvency, inefficiency or incompetence (Amujiri, 2009). The administration of the Defined Benefits Pension Scheme became unsustainable by the government with the dwindling resources accruable to the federation account.

Millions of retired Nigerians were subjected to untold hardship and abject poverty through the unpaid pensions. There was a serial neglect of the plight of the pensioners by the successive administrations after retirement. The pensioners lived a precarious lifestyle with falling social status. They were subjected to inhuman treatment within and outside their immediate environment.

The arrears of unpaid pensions and gratuities built up a pyramid of abject poverty and circles of penury around their immediate family. The years of unpaid pensions and gratuities were aggravated by the corrupt tendencies of the pension officials, inefficiencies of the civil service, administrative bottlenecks, bureaucracies and the economic downturn prevalent in the government circles (Orifowomo, 2006, Dalang, 2006). Pension Scheme was first introduced into Nigeria by the Macpherson Constitution of 1951 following the 1951 Pension Ordinance with retroactive effect from 1946 to mark the Richard Constitution of 1946. The first pension scheme in Nigeria was set up for the employees of the Nigerian Breweries Limited in 1954 as a social welfare and also to provide comfort for the employees after retirement (Nwanne, 2015). The Social Security Scheme of 1961 established by the Act of Parliament set up the National Provident Fund (NPF) to address all issues relating to pension of private organizations in Nigeria (Nnanta, Okoh and Legwu, 2011). The Decree No. 73 of 1993 set up National Social Insurance Trust Fund (NSITF) to replace the defunct NPF because of its limitations in covering only employees in the private sector with the monthly contribution of 6% of basic salary subject to a maximum of N8.00 to be contributed in equal proportion of N4.00 each by employer and employee (Balogun, 2006). The National Social Insurance Trust Fund (NSITF) which was an offshoot of National Provident Fund was a defined benefit scheme which coverage is limited to the employees in the private sector working for organization with a minimum staff strength of five employees' workforce. Its scope is in respect to loss of employment of the employees, sustainable income for the retirees in old age, labour incapacity or invalidity or death. The NSITF was contributory in nature funded by both the employers and employees.

The total monthly contribution was 7.5% of the employees basic salary shared between the employers and the employees in the proportion of 5% and 2.5% respectively. This ratio was later reviewed upward in 2002 to 10% of employees gross salary made up of basic salary, transport and housing allowances shared in the proportion of 3.5% and 6.5% between the employees and employers respectively. The Pay-As-You-Go scheme has many disadvantages, funded by the employer only, and the burden of payments of terminal benefits for the retirees became the sole responsibility of the government, making the continuous payment of pension and gratuities serious burdens after retirement. This unpleasant scenerio has provoked the federal government to look out for a better retirement plan that would accentuate the sufferings of the employees after retirement. On July 1, 2004, the Contributory Pension Scheme was introduced to replace the old Defined Benefits Pension Scheme. In line with the Pension Reform Act 2004, the employees contribute a minimum of 7.5% of their basic salary, housing and transport allowance while the counterpart contribution is made by the federal government for all the federal workers while 2.5% is expected to be paid by the military officers with the counterpart contribution of 12.5% by the federal government. The Act brought about the establishment of the National Pension Commission to regulate, supervise, and ensure effective administration of pension matters in Nigeria (Sale and Ezugwu, 2009). The new pension scheme is a contributory in nature for the payment of retirement benefits of employees who are eligible under the scheme (Odia and Okoye, 2012).

The Contributory Pension Scheme (CPS) differs largely from the Pay-As-You-Go pension scheme in term of its structure, responsibility of the employers and employees, administration and management, value chain, retirement benefits, claims, risks and uncertainty

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and mode of access to fund. The Pay-As-You-Go pension scheme was essentially a defined benefit while the CPS is largely a defined contribution. The Pay-As-You-Go scheme was only funded by the employers while the CPS is jointly funded by both the employers and the employees in a designated individual employee's Retirement Savings Account managed by his/her nominated Pension Fund Administrators. The CPS is mandatory for all employees in public and private sector except those captured by the exemption clauses in the Pension Act, while the membership of the Pay-As-You-Go was voluntary in the private sector. The management of the Pay-As-You-Go scheme was largely by a Board of Trustees set up to manage that pension fund. This committee was made up of mostly different union members and representative of the Association of Pensioners. The supervision of the Pay-As-You-Go pension scheme was by multiple corporate pension bodies such as SEC, NAICOM, JTB and the multiple command resulted in conflicting policy instructions decisions most times .The contributory pension scheme is strictly regulated by Pen Com. The Pay-As-You-Go pension scheme gave no pension benefits to the dismissed employees while the administration of CPS restored the full pension benefits after dismissal. The new contributory pension scheme was therefore introduced to correct the ugly situation created by the old pension (Tobiloba, 2014).

The Pension Reform Act 2004 provides for the establishment of Licensed Pension Fund Administrators and Pension fund Custodians. The responsibility of the Pension Fund Administrators (PFA) is to open Retirement Savings Account (RSA) for all employees, invest and manage the pension fund contributed by both the employers and the employees in accordance to the condition laid down by the PenCom. The PFAS are the veritable operators that add value to the contributors' fund (Adegbayi, 2005). The implementation of the Contributory Pension Scheme has created opportunities ranging from individual retirement savings to other benefits. The scheme enables accumulation of fund, mobility of labour from one job location to other without a negative effect on the Retirement Savings Account, the right of the contributors to change their Pension Fund Administrator as the occasion demands, unrestricted access to RSA as at when due (Oshiomole, 2007). The introduction of CPS has put to rest the prevalence of ghost workers (Amujiri, 2009) and eradicated the existence of ghost names on personnel payroll (Yunusa, 2009). Gunu and Tsado (2012) employed the use of descriptive statistics in analyzing the impact of contribution pension system on the economic growth in Nigeria. Their findings reveals the positive contribution of CPS to the Nigeria capital market.

Olanrewaju (2011) investigated the Pension Reform Act 2004 as it affects the welfare of retirees in Nigeria and the sociological evaluation of its provisions using Marxist Theory to analyse the 2004 Pension Scheme. His findings reveal that the Pension Reform Act, 2004 has no significant impact on the provision of basic social security of old age pensioners in Nigeria. Akeni (2009) compared the distributions between the old pension scheme and the CPS and observed nine distinguishing features between the two system. His findings revealed that accountability, accessibility, ease of payment of pension and gratuity, funding, management of pension fund, transparency, stakeholders confidence in the scheme, auditors control and corporate governance were the major features of the contributory pension scheme.

Dhameji and Dhameji (2009) examined the linkage between commitment and motivation as it relates to pension. His findings show that there is a positive relationship between commitment and employees' motivation. Sule and Ezugwu (2009) assessed the impact of contributory pension scheme in terms of its ability to guarantee employees' comfort in relation to regular payment of pension after retirement. After ten (10) years of its operation, the contributory pension scheme was reviewed in year 2014 so as to widen the scope of its operation and increase the minimum rate of pension contribution under the reviewed pension scheme. The employees contribute a minimum amount of their basic salary, housing and transport allowances of 8% while the employers contribute a counterpart addition of employees 10%, which sums up the individual monthly pension contribution to 18% as against 15% in the 2004 Pension Reform Act.

The reviewed Pension Reform Act 2014 was therefore a direct consequence of the weakness of Pension Reform Act 2004 (Ajaero, 2014). Under this new Pension Act, 2014, fund mismanagement make operators liable upon conviction to a minimum of ten years imprisonment Nda-Isaiah (2014). The increase of employee total monthly contribution is welcome development. It is an effort towards greater productivity among the employees Usman, (2014). However, the increments of the employees' contributions and the employers' addition which the 2014 Pension Reform Act provides has not been implemented by the federal government of Nigeria. The employees' monthly pension deductions still remains 7.5% across the board for all the employees throughout the federation while the employers' counterpart monthly addition also remains 7.5%. Instead of the 18% total of the employees' monthly consolidated salary to be credited to the RSA, the total rate credited on monthly basis is the 15% minimum which the 2004 Pension Reform Act provides. The inability of the Government to implement fully the provisions of 2014 Pension Reform Act as it relates to both employers and employees contribution is not unconnected with the dwindling resources and sharp economic melt down which the country faces.

## III. Data and Methodology

### *a) Data*

The data used in this study were gathered from the Stanbic IBTC Pension Manager and Legacy Pension Manager LTD (PFA) for the Retirement Savings Account statement of the employees registered with the Pension Fund Administrator and the Employees' Statement of Account of the Retirement Savings Account registered with the legacy pension – Legacy Pension Managers Ltd (PFA). The Recurrent Personnel cost warrants were also obtained from Budget Office and the office of the Accountant-General of the Federation for different MDAs for the use of the study. The MDAs' payrolls and employees pay advice were also used for the study.

### *b) Model Specification*

Descriptive and analytical approaches were used in the study to interpret the relevant data obtained from different sources. Tables were presented to illustrate data from the Pension Fund Administrators and the statement of Retirement Savings Accounts. The Recurrent Personnel Cost Warrants from different MDAs were also presented in a tabular form to explain the break down of the MDAs' monthly personnel cost releases. The monthly employees' pension deductions were matched with the PFA statements of Account for the Retirement Savings Account to disclose the possible variations in the pension deductions that account for either under-deductions or over-deductions from the employees' monthly salaries.

## IV. Results and Discussion

Table I shows the break- down of the Appropriation Act of a particular MDA for the personnel cost releases before the adoption and implementation of Government Integrated Financial Management Information System (GIFMIS) within the Treasury Single Account (TSA) for the budget preparation. Column I shows the different codes for the different items of expenditure, column 2 shows the item code while column 3 explains the amounts allocated on various subheads. One of the greatest challenges in the Pre-TSA era is the determination of actual amount of personnel releases from the array of figures in the personnel cost warrants. The total annual personnel cost of N6, 360, 323, 910 released to this particular MDA is inclusive of other allowable deductions of which employees' pension contribution is significant. Apart from Employees' Pension Contribution, there are other mandatory deductions which also form part of the Gross Personnel Cost releases such as National Health Insurance Scheme (NHIS) under which all the employees are mandatorily captured. All these are taken into consideration before the actual personnel costs are arrived at. A technical problem also arises because the item of contributory pension appears once on the personnel cost warrant, therefore a common error of accounting treatment is to deduct the amount of the CPS once with other deductions in other to arrive at the actual personnel cost release. Since the inception of the contributory pension scheme, the elements of the scheme provide for the employees' deductions of 7½ % from their salaries and the employers' counterpart contribution of 7½ %. At the annual budget discussion, when the MDAs' personnel cost budget is defended, the government counterpart addition of 7½ % is also added to the agreed 100% personnel costs for the MDA expected to be accounted for in the subsequent fiscal financial year. The 107½ % total personnel cost are not released to the MDA as the actual personnel cost release. The employees' deductions of 7½ % and the government counterpart contribution of 7½% totaling 15% of the total personnel costs are removed from the MDAs' personnel cost budget in addition to the mandatory National Health Insurance Scheme allocation at source. From the Table I therefore, the actual annual personnel cost for the MDA is (N6, 360, 323, 910–(240,110,191 $\times$ 2 + 160,073,460)). The sum of N240, 110,191 is repeated twice for both employer and employee as 7½ % contribution respectively. The sum of N160, 073, 460 is for the mandatory cost of National Health Insurance Scheme for the MDA. It is therefore the net of the gross personnel cost out of the value of N572, 003, 068 that would be released to the MDA. In the conceptualization of the contributory pension scheme theory, it is expected that 15% of the employees' salary will be credited to his Retirement Saving Account on monthly basis. In other words, if Mr. "A" 7½ % of his consolidated salary is N3,000, government would have removed this N3,000 from the MDA's personnel cost from source, add counterpart government contribution of another N3,000 before the rest is released to the employee's MDA as net of personnel cost.. The sum of N6, 000 will therefore be credited to the employees Retirement Savings Account with his designated Pension Fund Administrator. The employee is therefore paid the balance of 92.5% by his MDA while the deduction at source of 7.5% will reflect in his monthly pay advice as a memorandum so as to gross up his monthly salary to 100%. There is no provision in the Pension Act where the employee's deduction differs from the employer contribution because the two elements are deducted simultaneously at source with a common denominator in the budget office before the balance is released to the respective MDAs for the payment of net salaries to the workers.

*Table I:* Format of the Appropriation Act before the Introduction of TSA by the Federal Government of Nigeria

| Code | Line Item | Amount |
|---|---|---|
| 2 | Expenditure | 6,745,931,132 |
| 21 | Personnel Cost | 6,360,323,910 |
| 2101 | Salary | 3,201,469,210 |
| 210101 | Salaries and Wages | 3,201,469,210 |
| 21010101 | Salary | 3,201,469,210 |
| 2102 | Allowances and Social Contribution | 3,158,854,700 |
| 210201 | Allowances | 2,758,671,049 |
| 21020101 | Non Regular Allowances | 2,758,671,049 |
| 201202 | Social Contributions | 400,183,651 |
| 21020201 | NHIS | 160,073,460 |
| 21020202 | Contributory Pension | 240,110,191 |
| 22 | Other Recurrent Costs | 107,164,077 |
| 2202 | Overhead Cost | 107,164,077 |
| 220201 | Travel & Transport – General | 28,451,552 |
| 22020101 | Local Travel & Transport: Training | 16,362,440 |
| 22020102 | Local Travel & Transport: Others | 12,089,112 |
| 220202 | Utilities – General | 17,199,676 |
| 22020201 | Electricity Charges | 15,255,683 |
| 22020205 | Water Rates | 534,064 |
| 22020206 | Sewerage Charges | 1,409,929 |
| 220203 | Materials & Supplies – General | 12,191,337 |
| 22020301 | Office Stationeries/Computer Consumables | 1,547,946 |
| 22020303 | Newspapers | 576,789 |
| 22020306 | Printing of Security Documents | 369,494 |
| 22020309 | Uniforms & Other Clothing | 5,340,640 |
| 22020311 | Food Stuff/Catering materials Supplies | 4,356,467 |
| 220204 | Maintenance Services – General | 6,942,832 |

Table II shows the summary of the personnel cost releases with the adoption of Treasury Single Account (TSA) to the MDAs. Colum I shows the Fund Codes, Column 2 shows the document type for the transfer, Column 3 shows the periods of the year, January – December, Column 4 indicates the name of the organization while Column 5 explainsthe medium of the Transaction – through the Treasury Single Account of the MDA domiciled with CBN, Column 6 shows the gross personnel cost, Column 7 gives the Employers' contribution in the employees' pension scheme, Column 8 shows the employee pension deduction, Column 9 stands for the National Health Insurance Scheme deductions while Column 10 explains the actual releases to the MDAS. The personnel cost warrant through the Treasury Single Account has however substantially cleared the doubt about the controversy on the determination of both employers' contribution and employees' deductions from the personnel costs releases to the MDAs. The Federal government contributions are charged against the consolidated Revenue Fund of the Federal goverment. The same amounts are deducted for both the Employers contribution (FGN) and the employees' deduction on monthly basis against the MDA which is expected to be credited to the respective individual Employees Retirement Savings Account with various Pension Fund Administrators. It is therefore expected that in the employees payroll with MDA, the amount deducted as contributory pension scheme deduction for the employee which is shown as a reflection should be the amount credited in the employee's statement of his Retirement Savings Account with his designated Pension Fund Administrator (PFA).

*Table II*

Federal Government of Nigeria
Report Parameters
Years: 2016
Period: 1-12
Organization Type:
Warrant Type:
Warrant No:
Warrant Status: Finalized
Organization: 0517021006/a particular University in NIGERIA
Fund: 02101/Main Envelop – Personnel
Warrant Lines

| Fund | Document | Period | Organization | Type | Gross Amount | FGN Pension | Employee Pension | NHIS | Net Amount | Status |
|---|---|---|---|---|---|---|---|---|---|---|
| 02101 | W01-00006053 | 2016-1 | 0517021006/University of Benin | TSA | 994 225 309.00 | 63,112, 911.17 | 63, 112, 911. 17 | 42,075, 274. 08 | 825,924,212.58 | Finalized |
| 02101 | W01-00006053 | 2016-2 | 0517021006/University of Benin | TSA | 994 225 309.00 | 63,112, 911. 17 | 63, 112, 911. 17 | 42, 075, 274. 08 | 825,924,212.58 | Finalized |
| 02101 | W01-00006053 | 2016-3 | 0517021006/University of Benin | TSA | 994 225 309.00 | 63,112, 911. 17 | 63, 112, 911. 17 | 42, 075, 274. 08 | 825,924,212.58 | Finalized |
| 02101 | W01-00006053 | 2016-4 | 0517021006/University of Benin | TSA | 994 225 309.00 | 63,112, 911. 17 | 63, 112, 911. 17 | 42, 075, 274. 08 | 825,924,212.58 | Finalized |
| 02101 | W01-00006053 | 2016-5 | 0517021006/University of Benin | TSA | 994 225 309.00 | 63,112, 911. 17 | 63, 112, 911. 17 | 42, 075, 274. 08 | 825,924,212.58 | Finalized |
| 02101 | W01-00006053 | 2016-6 | 0517021006/University of Benin | TSA | 994 225 309.00 | 63,112, 911. 17 | 63, 112, 911. 17 | 42, 075, 274. 08 | 825,924,212.58 | Finalized |
| 02101 | W01-00006053 | 2016-7 | 0517021006/University of Benin | TSA | 994 225 309.00 | 63,112, 911. 17 | 63, 112, 911. 17 | 42, 075, 274. 08 | 825,924,212.58 | Finalized |
| 02101 | W01-00006053 | 2016-8 | 0517021006/University of Benin | TSA | 994 225 309.00 | 63,112, 911. 17 | 63, 112, 911. 17 | 42, 075, 274. 08 | 825,924,212.58 | Finalized |
| 02101 | W01-00006053 | 2016-9 | 0517021006/University of Benin | TSA | 994 225 309.00 | 63,112, 911. 17 | 63, 112, 911. 17 | 42, 075, 274. 08 | 825,924,212.58 | Finalized |
| 02101 | W01-00006053 | 2016-10 | 0517021006/University of Benin | TSA | 994 225 309.00 | 63,112, 911. 17 | 63, 112, 911. 17 | 42, 075, 274. 08 | 825,924,212.58 | Finalized |
| 02101 | W01-00006053 | 2016-11 | 0517021006/University of Benin | TSA | 994 225 309.00 | 63,112, 911. 17 | 63, 112, 911. 17 | 42, 075, 274. 08 | 825,924,212.58 | Finalized |
| 02101 | W01-00006053 | 2016-12 | 0517021006/University of Benin | TSA | 994 225 309.00 | 63,112, 911. 17 | 63, 112, 911. 17 | 42, 075, 274. 08 | 825,924,212.58 | Finalized |

Table III shows the pay advice of an employee that operates and implements contributory pension scheme. Column 1 shows the payment items, Column 2 shows the code for the payment item, Column 3 shows the amount against the payment items, Column 4 shows the deduction items, Column 5 shows the codes for the deduction items while Column 6 shows the amounts against the deduction items.

The Budget Office of the Federation deducts a sum of N7, 591.52 from the employee's salary on monthly basis as 7.5 % of the employee's contribution which was credited to his designated Retirement Savings Account with his Pension Fund Administrator. It is therefore expected that the exact sum will be reflected in the employee's pay advice as a memorandum entry on monthly basis by his employer which will be added to the employer's counterpart addition and crdited in the employee's Retirement Savings Account to sum up to N15, 183.04 as monthly pension contribution inflow.

The employee's Retirement Savings Account statement was obtained to reconcile and confirm if what was reflected in the employee's pay slip is what was exactly deducted from the source for the employee'smonthly contribution.

*Table III:* MDAS with Inappropriate Contributory Pension Deduction based on Staff Basic Salary
Staff Pay Slip for: February 2012: Salary

Employee Information

| | | |
|---|---|---|
| Full Name | | Post Prin Technologist |
| Faculty | Basic Medical Sc. | Dept/St/ Code: 1200/10498 |
| Dept | Anatomy & Biology | Bank U.B.A |
| Scale | Contiss 11 Sept 07 | Bank Branch |
| Pen. Admin. | Ibtc | |

| Payments | | | Deductions | | |
|---|---|---|---|---|---|
| Item | CE | Amount | Item | CE | Amount |
| CONTISS | 100 | 102,120.25 | ASLTON DUE | 447 | 5,000.00 |
| ** Less 7.5% | 425A** | (7,591.52) | CTCS | 415 | 15,820.00 |
| Subtotal | 019 | 94,528.73 | EMAIL | 427 | 1,500.00 |
| HOUSING | 260 | 11,455.57 | NAAT DUE | 424 | 1,957.37 |
| SubGross | 021 | 116,984.30 | PAYE | 407 | 3,010.31 |
| Arrears of Cons sal | 002 | 2,932.26 | | | |
| Peculiar Allow | 262 | 66,005.83 | | | |
| GROSS PAY | | 185,922.39 | TOTAL DEDUCT | | |
| NET PAY 158,634.71 | | | | | |

** Already Deducted at Source by Ministry of Finance

Table IV shows the Retirement Saving Account statement of a member staff in the MDA whose pay advice was presented in Table III. Column I shows the description for the month of entries, Column 2 shows the balance brought forward for both the employers and employees, Column 3 shows the dates in which values were received in the statement of Account, Column 4 shows the mandatory contributions by both the employee and employer which is 7½ % of emolument, Column 5 shows the voluntary contribution by the employee apart from the mandatory contribution. Pension Act 2014 as amended, makes provision for employee's voluntary contribution apart from the 7½ % monthly mandatory contribution. Column 6 shows the accumulated pensions accrued for the employee before the implementation of Pension Reform Act while Column 7 shows the Total Contribution. From the Staff Retirement Savings account statement, it can be seen that the employer's contribution and employee's deduction is the same throughout the relevant periods. A regular sum of N12, 006.13 was deducted for all the months within the quarter. But in the pay slip of the employee with his MDA, a sum of N7,591.52 was reflected on his pay slip as his deduction from source instead of N12,006.13 with a clear difference of N4,414.61 as under deduction on monthly basis. The implication of this treatment is that the employee is overpaid every month to the tune of his pension deduction which amounts to N4, 414.61. In a year, the employee would have been overpaid with a sum of N52, 975.32. Every member of staff on the institution's payroll is equally overpaid. One therefore wonders how the MDA finances the overpayment of salary payments from the personnel cost releases. Despite the volume of extant circulars issued on the implementation of the contributory pension scheme, many MDAs give different interpretations to the employees' monthly contribution that results into inappropriate deductions of employees' monthly pension contribution.

In some MDAs, employees deductions of 7½ % are based on basic salary and housing allowances while some MDAs calculate deductions based on basic salary, housing allowance and transport allowance. None of these bases amounts to appropriate employees' monthly pension deductions. Few MADs however base 7½ % deduction on the employees' consolidated salary which amounts to the appropriate employee's monthly pension deduction and corresponds to the amount deducted at source by the Budget Office on the employee's salary as stipulated by the Pension Act 2014 as amended. From the Table III above, the employee's pension was based on the employee's basic salary which is just a component of consolidated salary of the staff. The staff monthly basic salary is N102, 120.25 and 7½ % of N102, 120.25 is N7, 591.52. All other allowances which are integral part of the consolidated salary have been excluded whereas, in the deduction that have been effected for the employee from the source before the net was released to the MDAs, deduction was based on the employees' consolidated salary of CONTISS 11/07 of N160,081.73. Where a wrong base is used in the determination of pension employee's pension deduction despite the correct rates, it will amount to pension under deduction and inappropriate approved personnel cost releases for the year will be insufficient to accommodate the personnel costs expenditure for the year. No wonder, some MDAs could not pay all their employees' salaries for the whole twelve (12) months of the year causing untold hardship for the workers employee's pension deductions. The inappropriateness of pension deductions by the MDAs on employees' consolidated salary has grave consequences on the MDAs personnel cost budget. It results into serious personnel cost crisis, salary short falls by the MDAs inability to pay some approved regular allowances, failure to remit statutory deductions to the authorized bodies and inability to pay the Union dues. The direct consequence will therefore be that the Also, inappropriate contributory pension deduction on the employees by the MDAs mean that employees receive over and above 100% of their salaries on monthly basis. For an employee to be overpaid all through the year by the MDAs and yet the MDAs do not experience personnel cost crisis and short falls from payment of staff salary only mean that the personnel cost budgets have been over bloated or padded along the way by the MDA.

A persistent under deduction of the employees' pension also results into inability of MDAs to replace the exited staff, recruit new staff in the organization and also making the adjustment for the payment of incremental year credits for the staff members impossible. Where salary over payment is detected, it is the employer's responsibility to make a case for the refund of the overpayment and not the other way round so as to buffer the depleted personnel account. The pains of the inappropriate pension deduction will not be borne by the employees just because the actual deductions for both the employers and employees have been taken care off from source and credited to the employees Retirement Saving Account.

*Table IV:* Employer's Contribution Based on Employee's Consolidated Salary

| B. Statement Summary | |
|---|---|
| Contribution from Inception | 1,280,320.00 |
| Total Withdrawal from inception | (711.54) |
| Net Contributions to Date | 1,279,608.46 |
| Gains/(Loss) from Inception | 208,682.55 |
| Current Value | 1,488,291.01 |
| No of Unit Held | 818,551.87 |
| Unit Price | 1.8182 |
| C. Transactions from the Quarter | |

| Description | | Date | Mandatory N | Voluntary N | Voluntary N | Total N |
|---|---|---|---|---|---|---|
| Balance B/F | | | | | | |
| | Balance BF | 31-Dec-11 | 1,207,871.68 | 0.00 | 0.00 | 1,207,871.68 |
| December 2011 | | | | | | |
| | Employer | 25-Jan -12 | 12,006.13 | 0.00 | 0.00 | 12,006.13 |
| | Employer | 25-Jan -12 | 12,006.13 | 0.00 | 0.00 | 12,006.13 |
| | Admin Fee | 25-Jan-12 | (100.00) | 0.00 | 0.00 | (100.00) |
| February 2012 | | | | | | |
| | Employer | 01Mar -12 | 12,006.13 | 0.00 | 0.00 | 12,006.13 |
| | Employer | 01-Mar-12 | 12,006.13 | 0.00 | 0.00 | 12,006.13 |
| | Admin Fee | 01-Mar-12 | (100.00) | 0.00 | 0.00 | (100.00) |
| January 2012 | | | | | | |
| | Employer | 01Mar -12 | 12,006.13 | 0.00 | 0.00 | 12,006.13 |
| | Employer | 01-Mar-12 | 12,006.13 | 0.00 | 0.00 | 12,006.13 |
| | Admin Fee | 01-Mar-12 | (100.00) | 0.00 | 0.00 | (100.00) |
| Net Contribution to Date | | | | | | 1,279,608.46 |
| Gain/Loss for the Quarter | | | | | | 28,380.14 |

Table V shows the pay advice of an employee in a MDA that make appropriate pension deductions, Column 1 solemn after the employee's personal details shows earnings information, Column 2 shows the amount, Column 3 shows the deductions on the employee emolument while Column 4 shows the amount of total deduction for the month.

The monthly consolidated salary of the employee is N25, 463.25 which is made up of the employee's basic salary, housing allowance, transport allowance, utility allowance, responsibility allowance etc. The contributory pension deduction is N1, 909.74 which is 7½% of the consolidated salary. The consolidated salary of the employee was disclosed at gross value, that is, the amount the employee is actually entitled to, while the contributory pension amount appeared at the deduction column so as to deflate the gross consolidated salary at net value which was the amount actually received from the ministry of finance. This treatment and deduction is the appropriate way of treating the employees' deduction in the pay advice of the employee. The alternative way is disclosing the net value of the consolidated salary after adjusting for the employee deduction at source and thereafter reflecting the amount deducted as employee's pension deduction as a memorandum entry. The employees' pension fund administrator is legacy pension. The employee's Retirement Saving Account is open with the PFA where both the employer's contribution and employee's deduction is credited.

*Table V:* Employee's Retirement Savings Account with Appropriate Deduction Based on Employee's Consolidated Salary

Retirement Savings Account Statement for the Period 01/04/2017 to 30/06/2017
PIN NO:
STAFF ID: Email:
PHONE: LEG/SP 000726

A. Mandatory Contributions

| Description | Units | Unit Price of Fund | Amount (N) | Percentage (%) |
|---|---|---|---|---|
| Opening Balance | 25,110.07 | 3.0454 | 76,470.20 | 0 |
| Contribution Received in the Period | 3,583.59 | 0.0000 | 11,143.44 | 0 |
| Total Withdrawals in the Period | 0.00 | 0.0000 | 0.00 | 0 |
| Gain (Loss) in the Period | 0.00 | 0.0000 | 3,316.57 | 3.79 |
| Closing Balance | 28,693.66 | 3.1690 | 90,930.21 | 0 |
| Contributions to Date | 0.00 | 0.0000 | 81,181.46 | 0 |
| Total Withdrawals to Date | 0.00 | 0.0000 | 0.00 | 0 |
| Gain (Loss) to Date | 0.00 | 0.0000 | 9.748.75 | 12.01 |

B. Mandatory Contributions

| Description | Units | Unit Price of Fund | Amount (N) | Percentage (%) |
|---|---|---|---|---|
| Opening Balance | 0.00 | 3.0454 | 0.00 | 0 |
| Contribution Received in the Period | 0.00 | 0.0000 | 0.00 | 0 |
| Total Withdrawals in the Period | 0.00 | 0.0000 | 0.00 | 0 |
| Gain (Loss) in the Period | 0.00 | 0.0000 | 0.00 | 0 |
| Closing Balance | 0.00 | 0.0000 | 0.00 | 0 |
| Contributions to Date | 0.00 | 0.0000 | 0.00 | 0 |
| Total Withdrawals to Date | 0.00 | 0.0000 | 0.00 | 0 |
| Gain (Loss) to Date | 0.00 | 0.0000 | 0.00 | 0 |

C. Details of Transactions for the Period 01/04/2017 to 30/06/2017

| Value Date | Description | Employer (N) | Employee (N) | AVC (N) | Admin Fees (N) | Net (N) | Withdrawal (N) | Unit Price | Unit |
|---|---|---|---|---|---|---|---|---|---|
| 01-Apr-17 | Opening Balance | 35,964.01 | 35,964.01 | 0.00 | 1,890.00 | 70,038.02 | 0.00 | 0.0000 | 25,110.07 |
| 02-May-17 | Mar 17 Contr. From PU000036B006 | 1,909.74 | 1,909.74 | 0.00 | -105 | 3.714.48 | 0.00 | 3.0778 | 1,206.86 |
| 18-May-17 | Apr 17 Contr. From PU000036B006 | 1,909.74 | 1,909.74 | 0.00 | -105 | 2,714.48 | 0.00 | 2,1018 | 1,197.52 |
| 14-Jun-17 | May 17 Contr. From PU000036B006 | 1,909.74 | 1,909.74 | 0.00 | -105 | 3.714.48 | 0.00 | 3.1500 | 1,179.20 |
| | Closing Balance | 41.693.23 | 41,693.23 | 0.00 | -2,205.00 | 81,181.46 | 0.00 | | 28,693.65 |

Table VI shows the Retirement Savings Account statement for an employee in the MDA that reflect an appropriate deduction at source from the Federal Ministry of Finance. Segment A contains the information of the mandatory contributions for the employees. Segment B contains the Employee's, Voluntary Contribution (VC) which the Pension Act provides for while segment C contains details of transactions for the period 01/04/2017 to 30/06/2017 column in this segment shows the value date, Column 2 shows the transaction description, Column 3 contains information about the employer contribution, Column 4 shows the details about the employee's deduction, Columns 5, 6, 7, 8, 9, 10 and 11 shows the AVC, Admin Fees, net value in naira, pattern of withdrawal, unit price and the units of transaction respectively. The employer's contribution to the employee's Retirement Savings Account on monthly basis is 1,909.74 which is exactly the same with the employee's monthly deduction. The amount disclosed at the deduction column of the employee's pay advice is also the same value signifying that what is deducted at source for the employee and credited into his Retirement Savings Account is the exact value the MDAs disclose in the personnel pay advice of the employee. In other words, both Federal authority that deducts at source and the local MDA that discloses what was deducted based their 7½ % employee pension deduction on the consolidation salary of the employee. Where the basis for deduction is the same, appropriate deduction will be made by both the MDA and the Central authority from the employee's emolument. Where the basis differs, it will resort to discrepancy and varying amount of deduction on both sides.

*Table VI:* Pay advice of an Employee from MDA that Discloses Deduction based on the Employee Consolidated Salary

*Federal Government of Nigeria*
*Employee Pay slip: Aug – 2017*

| | | |
|---|---|---|
| Employee Name: | Grade: | GL03_CONHESS |
| IPPIS Number: | Step: | 3 |
| Ministry: | Gender: | Female |
| Division | | |
| Designation: | Health Assistant | |
| Location: | OSUN STATE | |
| Date of First Appt.: | 18-MAY-2015 | |
| Date of Birth: | 03-JAN-1986 | |
| Trade Union: | NON MEMBER | |
| Bank Information Details | | |
| Bank Name: | ACCESS BANK NIGERIA PLC | Contributory Pension Information |
| Bank Branch: | ONDO | PFA Name: Legacy Pension Managers Limited |
| Account Number: | | |
| Pension PIN: PEN100742890418 | | |

| Gross Earnings Information | | Gross Deduction Information | |
|---|---|---|---|
| Earnings | Amount | Deductions | Amount |
| CONHESS Cons Salary | 25,463.25 | CONHESS NHF | 636.58 |
| CONHESS Shift Allowance | | CONHESS PENSION | 1,909.74 |
| Hazard Allowance | | CONHESS TAX | 492.49 |
| Total | | CONHESS UNION DUE | 0.00 |
| | | CTSS NASU CICS OAUTH | 330.43 |
| | | CTSS OAUTHC MCICS | 11,600.00 |
| | | Total | 14,969.24 |
| | | Summary of Payments | |
| | | Total Gross Earnings | 33,860.25 |
| | | Total Gross Deductions | 14,969.24 |
| | | Total Net Earnings | 18,891.01 |

Balances

| Cumulative Tax Deduct | Cumulative Income | Cumulative Pension | Cumulative NHF |
|---|---|---|---|
| 4,432.41 | 304,742.25 | 86,484.07 | 5,729.22 |

In appropriate deductions from the employee's emolument arises from the misinterpretation of the relevant circulars on contribution pension scheme where statutory 71/2 % employee's deduction is based on the consolidated salary which is made up of the employee's basic salary, house allowance and not the basic salary alone or basic salary and one of the allowances leaving out other allowances that constitute the consolidated salary. The misinterpretation of the Pension Reform Act will resort to under-deduction of the employee pension as reflected by the MDA on the employee's pay advice and overpayment his monthly salary which will result to poor personnel cost budget performance and depletion of the MDA's Personnel Account. Also, unupdated personnel payroll by the MDAs can also lead to inappropriate employee's pension contribution. The personnel payroll is the summary of both the number and categories of workforce in the establishment. The payroll should give adequate and up-to-date information about the employee. The current grade level and status, earned promotion during the year, employee's advancement, demotion, upgrading, downgrading, award of incremental credit etc. are all factors that determine placement of the office on an appropriate consolidated salary scale.

Officer's disciplinary actions like suspension, loss of incremental credits, must all be reflected in the updated payroll. The employee's conversion from one salary grade level to the other will equally distort the appropriateness of the employee's pension deduction, if not communicated to the appropriate authorities.

## V. Conclusion and Policy Recommendation

The objective of this paper is to investigate the reason for the inappropriate employees Pension deduction as provided by the exstant Treasury circulars on the implementation of the contributory pension scheme in Nigeria. The challenge of the inappropriateness of the employee pension deductions is largely because of the wrong interpretation of the 7½% on employee's emolument which clearly differs from the intents and purposes of the relevant treasury circulars on the administration and implementation of the contributory pension scheme. Any other interpretation given to the employees' emoluments in which the 7½ % employee pension is not based on the employee's consolidated salary will always lead to inappropriate employee employee's pension deductions. Also an un updated personnel payroll, like notice on staff advancement, promotion, upgrading, demotion and suspension to the appropriate authority will either lead to pension over deduction or under deductions. To maintain a uniform and appropriate account of employees' pension deduction that will correspond to the deduction at source by all the MDAs, the following must be taken into consideration:

- The mandatory 7½ % of contributory pension deduction should be based only on employee's monthly consolidated salary.
- The personnel staff payroll must be updated monthly and send to the appropriate authorities like the staff Pension office, Pension Fund Administrators, Budget Office, Accountant General Office.
- Employees copy of the statement of Retirement Savings Account should be submitted to the MDA's pension office to stem down the possibility of under or over deduction from the employee's emolument.
- Employee notice of advancement, demotion, promotion, awards of incremental credits, withdrawal of incremental credits should be communicated to the appropriate authorities.
- MDAs should maintain a uniform method of disclosing employees' pension i.e. either salary gross-up value method or salary net value approach.
- Employee should carry out timely reconciliation of his account by obtaining the quarterly Retirement Savings Account statement and reconcile the entries with what the MDAs reflect on the personal pay slip on regular basis.
- Employees' movement from one job category to the other that will have any component of the consolidated salary should be communicated to the appropriate authorities.
- MDAs to submit updated nominal rolls with pins of employees indicating grade level, steps, salary structure and placements etc.
- Employees to provide their Pension Fund Administrators with relevant documentations i.e. letter of appointments pay advice etc. at the point of capturing by the PFAs.
- MDAs should instruct her pension unit to keep adequate records of the employee pension deductions on the members of staff on departmental basis by collecting a copy of the employee Retirement Savings Account statement of account along with the deductions reflected by the MDAs to fish out discrepancy.

It is only when the mandatory 7½ % of the employees pension deductions is based on the staff consolidated salary that appropriate deductions from source can be reflected by the MDAs on employees' pay advice through correct interpretation of the relevant treasury circulars on the implementation of contributory pension scheme in Nigeria.

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# Impact of Debt Financing on Financial Leverage Risk of Firms: A Comparative Study between Listed MNCs and Domestic Companies of Bangladesh

By Dr. Syed Mohammad Khaled Rahman
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*Abstract-* Financial risk of leverage or capital gearing lies in the possibilities of loss of equity earnings and threat to insolvency. The main objective of the study was to explore the impact of debt financing on financial leverage risk of DSE-listed MNCs & domestic companies of Bangladesh over a 20-year period (1996-2015). After analyzing domestic companies and MNCs, it is seen that leverage ratios are positively related with financial leverage risk (FLR). For domestic companies, 1% increase of 2nd difference of TD/SE and TD/TA results in 0.005 and 0.001 increase in 2nd difference of FLR (CV) respectively and vice-versa. For MNCs, 1% increase of 2nd difference of TD/SE and TD/TA results in 0.009 and 0.065 increase in FLR (CV) [2nd difference] respectively and vice-versa. After test of null hypothesis, it is seen that, domestic companies' debt-equity ratio has significant impact on FLR (CV) whereas MNCs' debt ratio has significant impact on both the measures of FLR.

*Keywords:* *financial, leverage, risk, ratios.*

*GJMBR-C Classification:* *JEL Code: F65*

IMPACTOFDEBTFINANCINGONFINANCIALLEVERAGERISKOFFIRMSACOMPARATIVESTUDYBETWEENLISTEDMNCSANDDOMESTICCOMPANIESOFBANGLADESH

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## I. Introduction

Financial leverage involves changes in shareholders' income in response to changes in operating profits, resulting from financing a company's assets with debt or preferred stock. If a company is financed with debt or is 'leveraged,' however, its shareholder earnings will become more sensitive to changes in operating profit. Nevertheless, financial leveraging makes companies equally susceptible to greater decreases in stockholder earnings if operating profits drop. Financial leverage increases the chance or probability of insolvency. Due to insolvency a levered firm can legally be forced into liquidation for non-payment of interest charges. Leverage has both benefits and costs and it is not an unmixed blessing. As a company increases debt and preferred equities, interest payments increase, reducing EPS if return on investment does not cover cost of debt. As a result, risk to stockholder return is increased and they demand a higher expected return for assuming this additional risk, which in turn, raises a company's costs.

## II. Statement of the Problem

Modigliani and Miller (1963) argued that the capital structure of a firm should compose entirely of debt due to tax deductions on interest payments. However, in theory, the Modigliani-Miller (MM) model is valid but, in practice, bankruptcy costs exist and these costs are directly proportional to the debt level of the firm. Hence, an increase in debt level causes an increase in bankruptcy costs which affect the financial performance of a firm. Therefore an optimal capital structure can only be attained if the tax sheltering benefits provided by increase of debt level is equal to the bankruptcy costs. In this case, managers of the firms should be able to identify when this optimal capital structure is attained and try to maintain it at the same level. This is the only way that the financing costs and the weighted average cost of capital are minimized which leads to increase of firm value and corporate performance. Schall and Haley (1991) stated that some of the complications found in practice provide advantages to debt financing whereas other factors favor equity financing. They found three types of complications-firstly capital markets are imperfect. There are information asymmetries and transaction costs which imply that there may be situations where debt or preferred stock financing may be unusually costly relative to common stock and vice versa. Secondly there are legal fees, investment banking commissions and other expenses associated with issuing securities. Issuing equity is usually more expensive than issuing preferred stock and issuing debt is less expensive than to issue preferred stock. Thirdly use of debt financing often results in serious disruption of the firm's business activity as top management spends time in negotiations with lenders while lower management starts thinking about alternative jobs. It is described as follows:

Customers for the firm's products and services began to search for other suppliers. The firm may be forced to delay or forego profitable investments due to lack of finance. There are also legal and other expenses associated with the legal proceedings in bankruptcy situations. At some point the expected costs of default become large enough to offset the advantages of debt. Firms with large amount of outstanding debt may have other problems. Lenders are reluctant to lend additional money to firms that are highly levered and they may

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either not lend money or charge a very high interest rate to compensate for their exposure to risk. The general opinion is that, beyond some point, additional leverage is undesirable.

## III. Literature Review

Allen (1983) states that financial risk is the risk which arises solely from the company's financial structure. The 'gearing up' or increasing the proportion of fixed interest securities is regarded as increasing the company's financial risk. According to Gitman (2007), "Financial risk can be defined as the chance that the firm will be unable to cover its financial obligations. Level is driven by the predictability of the firm's operating cash flows and its fixed cost financial obligations." Brigham and Houston (2001) stated that financial risk is the additional risk placed on the common stockholders as a result of the decision to finance with debt. If a firm uses debt or financial leverage, this concentrates the business risk on common stockholders. Schall and Haley (1991) explained financial leverage as the changes of shareholders income to changes in Earnings Before Interest and Taxes and is formed by debt or preferred stock financing with fixed interest and dividend payments. According to trading on equity, financial leverage enhances EPS which increases market price of common stock. However, the use of higher debt can lead to financial difficulties. Peirson and Bird (1981), noted that financial risk is that part of a company's risk that is introduced as a result of debt financing. The used of borrowed fund by a company exposes its ordinary shareholders to the possibility of increased variability in their earnings stream and the firm to the increased possibility of bankruptcy. This results from the contractual nature of the interest payments and principal repayments on the borrowed funds. Thus a firm's financial risk is directly related to the proportion of debt.

Hussan (2016) has investigated on impact of leverage on risk of the companies. He explored that the leverage enhances the financial risk of the firm which indicates recovery of loss in terms of loan is very difficult to the firm because in general there are limited sources of alternative funding and business insurance policy is not popular in Bangladesh. It also found that high interest rate and unethical political influence negatively manipulate the profitability of the firm. Akbari and Mohammadi (2013) have investigated the effects of leverages ratio on systematic risk based on the CAPM in Tehran Stock Market. The aim of the study was to determine if there is any significant relationship between leverages ratio as independent variables and beta as dependent variables. The results of the study revealed that there is not significant relationship between the variables. Bhatt and Sultan (2012) in their study found that the leverage risk factor performs consistently across various categories of firms and its impact is more pronounced during the recent financial crisis. Effects of leverage risk are robust to heterogeneity of the firms in the sample. The contribution of leverage risk to asset pricing has been quite strong. The results indicate that leverage based risk factor can explain a substantial portion of the cross-section of stock returns.

Gunarathna (2016) in his study examined how financial leverage affects financial risk based on the data collected over ten years ranging from 2006 to 2015 regarding 15 companies listed in the Colombo Stock Exchange. The findings revealed that financial leverage positively correlate with financial risk. The findings imply that firms having a higher financial risk can avoid their risk by altering the capital structure. Ufo (2015) has conducted a study to examine the relationship between leverage and manufacturing firms' financial distress in Ethiopia from 1999-2005. The result showed that leverage has negative and significant influence on financial distress. Minimize the bank loans through equity financing, improving cash collection and reducing bad debt expenses are remedy for maintaining short term cash problem.

## IV. Objective of the Study

The main objective of the study was to explore the impact of debt financing on financial leverage risk of firms. Specific objectives are:

a. To find out the three financial leverage ratios of sample firms.
b. To explore the financial leverage risk of sample firms based on coefficient of variation (CV) and mean absolute deviation.
c. To analyze the significance of regression coefficients of leverage ratios and make a comparison between MNCs and domestic companies.

## V. Methodology of the Study

*Type of Research:* Type of research is explanatory or causal. An attempt was made to identify cause and effect relationship between financial leverage and financial risk. Nature of research is Empirical and research approach is Quantitative.

*Population:* Population one consists of all MNCs listed on DSE which continue operation during the study period. Eight MNCs are found in 6 industrial sectors. Population two consists of all DSE listed domestic companies of the same 6 industrial sectors and which continue operations during the study period. Population size is 45.

*Types of Data:* Secondary data was used. The research method employed basically involved quantitative analysis of secondary data. Nature of data is both time series and cross sectional.

*Sources of Data:* Books, Journals, Company documents, Annual reports of sample firms, Reports of

Securities and Exchange Commission and Dhaka Stock Exchange (DSE) and Websites of sample firms and DSE. Study period is from year 1996 to 2015.

*Sampling Technique:* Stratified Sampling technique was applied for the selection of sample items of population one. Each of the two populations has been divided into several sub-populations or strata according to industry sector or type of industry. For the sake of comparison with the MNCs, it is necessary to select only those domestic companies that are performing well and on a consistent basis. So, Quota Sampling method was applied in selecting sample firms of population two.

*Sample Size & Sample Items:* The sample in this study consists of 14 companies (7 from each population) listed in Dhaka Stock Exchange (DSE). Two companies are selected from Pharmaceuticals & Chemicals industry and one company is selected from Engineering, Food & Allied, Tannery, Cement and Fuel & Power industry in each category. Name of the domestic companies are: Aftab Automobiles Ltd., Agricultural Marketing Company Ltd., Beximco Pharmaceuticals Ltd., Square Pharmaceuticals Ltd., Apex Footwear Ltd., Confidence Cement Ltd., and Padma Oil Company Ltd. Name of the MNCs are: Singer Bangladesh Ltd., British American Tobacco Bangladesh Company Ltd., GlaxoSmithKline Bangladesh Ltd., Reckitt Benckiser (Bangladesh) Ltd., Bata Shoe Company Ltd., Heidelberg Cement Bangladesh Ltd., and Linde Bangladesh Ltd.

*Techniques of Data Analysis:* Mean is used to determine yearly average and grand average. Collected data has been processed by MS Excel, SPSS and Gretl software. Presentation of data is done in two forms; text and tabular. Multiple regressions have been used to explore independent variables' degree of influence and direction of relationship with dependent variable. Ordinary Least Square (OLS) method has been applied to estimate the coefficients of financial risk models of MNCs and domestic companies. *F* statistic and coefficient of determination or $r^2$ value was used to measure overall goodness to fit of the models. Normality test has been done by Kolmogorov-Smirnov, Shapiro-Wilk and chi-square test. Data stationary has been judged by Augmented Dickey Fuller (ADF) test. Variance Inflation Factor (VIF) has been used to test multicollinearity among variables. Autocorrelation has been judged by Durbin-Watson (DW) statistic and Breusch-Godfrey test (also called LM test). Breusch-Pagan test has been used to judge heteroscedasticity in residuals.

## VI. Results and Discussion

### a) *Analyzing Impact of Leverage on Financial Risk By FLR Models*

In analyzing effect of leverage on financial risk, 2 ratios of FLR (CV and MAD) are considered explained or dependent variables and 3 financial leverage ratios are used as explanatory or independent variables. As EBIT and EPS are directly related with FLR so these variables are considered as independent variables. Debt financing depends on sales growth because higher sales growth ultimately results in higher internal financing which reduces the necessity of debt financing and vice-versa. The same matter also applies to net profit margin. Financial structure depends on firm size also because cost of borrowed fund depends on assets of the firm. So, sales growth, net profit margin and firm size are used as explanatory or independent variables in the model. The model is as follows:

FLR (Financial Leverage Risk) $= \alpha_0 + \beta_1 TD/TA + \beta_2 TD/SE + \beta_3 TD/CE_t + \beta_4 SG + \beta_5 FS_t + \beta_6 EBIT + \beta_7 EPS + \beta_8 NPM + \varepsilon_{i,t}$

Where: $\alpha_0$ = Constant term, $\beta_1$ to $\beta_8$ = Coefficients of variables, $\varepsilon_{i,t}$ = Random error term

*Explained or dependent variables (Financial risk):* FLR (CV) and FLR (MAD) are used as indicators of financial leverage risk

*Explanatory or independent variables of the interest (Financial Leverage ratios)*

Debt to Assets ratio (TD/TA), Debt-Equity ratio (TD/SE) and Debt to Capital Employed ratio (TD/CE) are used as indicators of financial leverage.

*Other Explanatory or independent variables*

Firm Size (FS), Sales Growth (SG), Net Profit Margin (NPM), Earnings Before Interest & Taxes (EBIT) and Earnings Per Share (EPS) are used as other independent variables.

In the above model, all variables are the average values of seven companies of each category in each year.

i. *Effect of Leverage on Financial Risk*

*Estimates of the Models*

The coefficient tables show the results of fitting a multiple linear regression model to describe the relationship between 2nd difference of dependent variable and seven independent variables.

a. *Model D1(FLR-CV)*

Coefficients of model D1 (FLR-CV) is as follows:

*Table 1:* Coefficient table D1 [Dependent Variable: $2^{nd}$ difference of FLR(CV)]

| 2nd difference of variables | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| (Constant) | -.001 | .030 | | -.043 | .967 |
| TD/TA | .558 | .800 | .164 | .698 | .503 |
| TD/SE | .119 | .046 | .600 | 2.605 | .029** |
| NPM | -.043 | .011 | -.721 | -3.887 | .004*** |
| SG | -.002 | .002 | -.196 | -.887 | .398 |
| FS | .218 | .391 | .133 | .557 | .591 |
| EPS | .009 | .015 | .126 | .563 | .587 |
| EBIT | .0003 | .001 | -.136 | -.647 | .534 |

Note: Data processed on SPSS **Significant at 5%, ***Significant at 1%

The equation of the fitted model is:

dd_FLR(CV) = - 0.001 + 0.558*dd_TD/TA + 0.119*dd_TD/SE - 0.043*dd_NPM - 0.002 *dd_SG + 0.218*dd_FS + 0.009*dd_EPS - 0.0003*dd_EBIT (dd_variable = $2^{nd}$ difference of variable)

Leverage ratios are positively related with financial leverage risk. If $2^{nd}$ difference of TD/SE and TD/TA is changed by 1 or 100%, then $2^{nd}$ difference of FLR (CV) would change by 0.558 and 0.119 respectively or in other words, 1% changes of $2^{nd}$ difference of TD/SE and TD/TA results in 0.005 and 0.001 change in $2^{nd}$ difference of FLR (CV) respectively.

b. *Model D2 (FLR-MAD)*

The equation of fitted model is:

dd_FLR(MAD) = 0.007 - 0.029*dd_NPM + 0.315*dd_TD/TA + 0.004*dd_TD/SE - 0.001*dd_SG + 0.449*dd_FS + 0.024*dd_EPS - 0.0004*dd_EBIT (dd_variable = $2^{nd}$ difference of variable)

Coefficients of model D2 (FLR-MAD) is as follows:

*Table 2:* Coefficient table D2 [Dependent Variable: 2nd difference of FLR(MAD)]

| 2nd difference of variables | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| (Constant) | .007 | .023 | | .289 | .779 |
| TD/TA | .315 | .629 | .130 | .500 | .629 |
| TD/SE | .004 | .036 | .027 | .106 | .918 |
| NPM | -.029 | .009 | -.691 | -3.384 | .008*** |
| SG | -.001 | .002 | -.164 | -.675 | .516 |
| FS | .449 | .308 | .384 | 1.459 | .178 |
| EPS | .024 | .012 | .489 | 1.979 | .079* |
| EBIT | .0004 | .000 | -.206 | -.889 | .397 |

Note: Data processed on SPSS *Significant at 10%, ***Significant at 1%

Second difference of leverage ratios are positively related with $2^{nd}$ difference of FLR (MAD). If $2^{nd}$ difference of TD/SE and TD/TA is changed by 1 or 100% then $2^{nd}$ difference of FLR (MAD) would change by 0.004 and 0.315 respectively or in other words, 1% increase of $2^{nd}$ difference of TD/SE and TD/TA results in 0.00004 and 0.0031 increases in $2^{nd}$ difference of FLR (MAD) and vice-versa.

c. *Model M 1(FLR-CV)*

Coefficients of model M1 (FLR-CV) is as follows:

*Table 3:* Coefficient table M1 [Dependent Variable: 2nd difference of FLR (CV)]

| 2nd difference of variables | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| (Constant) | -.013 | .035 | | -.365 | .723 |
| TD/TA | 6.549 | 2.358 | .711 | 2.777 | .021** |
| TD/SE | .900 | .426 | .413 | 2.111 | .064* |
| 1/NPM | 6.041 | 2.959 | .639 | 2.042 | .072* |
| 1/EPS | 3.896 | 3.285 | .360 | 1.186 | .266 |
| EBIT | .001 | .000 | .560 | 2.323 | .045** |
| SG | .010 | .003 | .577 | 3.015 | .015** |
| FS | -.218 | 1.041 | -.043 | -.210 | .839 |

Note: Data processed on SPSS **Significant at 5%, *Significant at 10%

The equation of the fitted model is:
dd_FLR (CV) = - 0.013 + 6.041*dd_(1/NPM) + 3.896*dd_(1/EPS) + 6.549*dd_TD/TA + 0.90*dd_TD/SE + 0.001*dd_EBIT + 0.01*dd_SG - 0.218*dd_FS (dd_variable = 2nd difference of variable)

Leverage ratios are positively related with financial leverage risk. If 2nd difference of TD/SE and TD/TA is changed by 1 or 100%, then FLR (CV) [2nd difference] would change by 0.9 and 6.54 respectively or in other words, 1% increase of 2nd difference of TD/SE and TD/TA results in 0.009 and 0.065 increase in FLR (CV) [2nd difference] respectively and vice-versa.

d. *Model M2 (FLR-MAD)*

Coefficients of model M2 (FLR-MAD) is as follows:

*Table 4:* Coefficient table M2 [Dependent Variable: 2nd difference of FLR (MAD)]

| 2nd difference of variables | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| (Constant) | -.007 | .035 | | -.206 | .842 |
| TD/TA | 5.612 | 2.347 | .596 | 2.391 | .040** |
| TD/SE | .428 | .424 | .192 | 1.010 | .339 |
| 1/NPM | 8.988 | 2.946 | .928 | 3.051 | .014** |
| 1/EPS | 2.741 | 3.270 | .247 | .838 | .424 |
| EBIT | .000 | .000 | .298 | 1.270 | .236 |
| SG | .007 | .003 | .433 | 2.323 | .045** |
| FS | -1.658 | 1.037 | -.318 | -1.600 | .144 |

Note: Data processed on SPSS **Significant at 5%

The equation of the fitted model is:
dd_FLR (MAD) = -0.007 + 8.988*dd_(1/NPM) + 2.741*dd_(1/EPS) + 5.612*dd_TD/TA + 0.428*dd_TD/SE + 0.000*dd_EBIT + 0.007*dd_SG - 1.658*dd_FS

Leverage ratios (2nd difference) are positively related with FLR (MAD) [2nd difference]. The debt ratio has significant impact on FLR (MAD). If 2nd difference of TD/SE and TD/TA is changed by 1 or 100% then FLR (MAD) [2nd difference] would change by 0.428 and 5.61 respectively or in other words, 1% increase of TD/SE and TD/TA (2nd difference) results in 0.004 and 0.056 increase in FLR (MAD) [2nd difference] respectively and vice-versa.

ii. *Fitness of models (Model diagnostics)*

a. *Test of Stationarity of Data*

As the nature of the data is time series, so at first data stationarity is checked. It is seen that most of the variables are non-stationary. To make them stationary, first difference is taken. If non-stationarity remains after first difference, then second difference is taken. Augmented Dickey Fuller (ADF) test is done to test stationarity. From table A4 and A6 it is seen that all the variables became stationary at second difference as p value of ADF test is less than 0.05.

b. *Test of Multicollinearity*

This problem is identified through the value of Variance Inflation Factor (VIF). VIF value of greater than 10 indicates multicollinearity problem. Table A7 shows VIF values of each explanatory variable of the four models (two from each category) and the measures taken to remove the problem if any. The table also shows VIF value of the variables after removing multicollinearity problem. It is to be noted here that VIF is same for both the models.

c. *Test of Normality*

Kolmogorov-Smirnov, Shapiro-Wilk and Chi square test are performed to test the normality of residuals. In table A5 it is seen that p values of all three measurements in all the models are greater than 0.05 which means that residuals are normally distributed.

d. *Test of Heteroscedasticity*

Breusch-Pagan test is performed to test heteroscedasticity of residuals. In the table A8 it is seen that p values of all the models' LM test statistic is greater than 0.05 which means that there is no heteroscedasticity of residuals. Heteroscedasticity can also be detected by the scatter graph of residuals and predicted value of dependent variable.

e. *Test of Autocorrelation*

Durbin-Watson (DW) statistic and Breusch-Godfrey test (also called LM test) is used to detect autocorrelation. In table A9 DW statistic is inconclusive in case of models D1 & D2. Breusch-Godfrey test shows that the models do not suffer from autocorrelation problem as p values of LM test of the models are greater than 0.05. DW statistic is near 2 for both the models of MNCs which indicate absence of autocorrelation.

f. *Overall Fitness of the Models*

In table A10 it is seen that p-value of F statistic is less than 0.05 in model D1, M1, M2 and it is less than 0.10 in model D2. So, it can be said that there is a statistically significant relationship between the variables at the 95.0% confidence level in models D1, M1, M2 and at 90% confidence level in model D2. Independent variables of Model D1 explain 72.77% variability in dependent variables. The R-Squared statistic indicates that the models D2 (FLR-MAD) as fitted explains 67.02% of the variability in explained variables. Independent variables of models M1 and M2 explain more than 90% variability in dependent variables.

*b) Test of Hypothesis*

Null hypothesis is as follows:

*Financial leverage does not significantly influence firm's financial risk*

This hypothesis is tested by analyzing the coefficients of financial leverage ratios of two FLR models discussed above. Acceptance or rejection of null hypothesis depends on p value of coefficients. The following table shows hypothesis test of domestic companies and MNCs.

*Table 5:* Test of Hypothesis

| Leverage & FLR | Difference | Coefficient | t statistic | p value | Decision regarding $H_0$ hypothesis |
|---|---|---|---|---|---|
| Domestic Companies | | | | | |
| FLR (CV) & TD/TA | 2nd | 0.557 | 0.697 | .503 | Accepted |
| FLR (CV) & TD/SE | 2nd | 0.119 | 2.604 | .028 | Rejected |
| FLR (MAD) & TD/TA | 2nd | 0.314 | 0.500 | .628 | Accepted |
| FLR (MAD) & TD/SE | 2nd | 0.003 | 0.106 | .917 | Accepted |
| MNCs | | | | | |
| FLR (CV) & TD/TA | 2nd | 6.549 | 2.777 | .021 | Rejected |
| FLR (CV) & TD/SE | 2nd | 0.900 | 2.111 | .063 | Accepted |
| FLR (MAD) & TD/TA | 2nd | 5.613 | 2.391 | .040 | Rejected |
| FLR (MAD) & TD/SE | 2nd | 0.428 | 1.010 | .338 | Accepted |

*Source: Outcome of Regression Models    Note: Computation done on SPSS & Gretl software*

From the table it is seen that domestic companies' debt-equity ratio has significant impact on FLR (CV) whereas MNCs' debt ratio has significant impact on both the measures of FLR at 95% confidence level. MNCs' FLRs are more sensitive to changes in leverage ratios than domestic companies as leverage coefficients of MNCs are higher than domestic companies in both the models.

## VII. Recommendations and Conclusion

It is expected that the process of liability management will become far more sophisticated in the coming decade as companies increasingly recognize the connections between balance-sheet decisions and firm performance. In fact, the more the debts rise, the higher the risk of financial distress will be. The financial manager has to take into consideration the effect on the capital structure when any financing decision is evaluated. Once a financial need arises from the planning activity, the financial manager should simulate what impact a debt or equity issue may have on the overall company.

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# Appendix

*Table A1:* Mean EBIT, EPS and FLR of Companies

| Year | Domestic Co. | | | | MNCs | | | |
|---|---|---|---|---|---|---|---|---|
| | Mean EBIT (million Tk.) | Mean EPS (Tk.) | FLR (CV) | FLR (MAD) | Mean EBIT (million Tk.) | Mean EPS (Tk.) | FLR (CV) | FLR (MAD) |
| 1996 | 137.14 | 6.38 | 0.883 | | 191.35 | 7.74 | 0.461 | 0.525 |
| 1997 | 160.53 | 5.31 | 0.858 | 0.932 | 231.63 | 7.60 | 0.486 | 0.621 |
| 1998 | 184.88 | 6.76 | 0.834 | 0.916 | 267.74 | 7.84 | 0.306 | 0.352 |
| 1999 | 210.26 | 7.83 | 0.864 | 0.842 | 217.66 | 7.29 | 0.422 | 0.436 |
| 2000 | 242.49 | 8.93 | 0.881 | 0.858 | 314.09 | 11.76 | 0.428 | 0.404 |
| 2001 | 284.35 | 10.93 | 0.916 | 0.838 | 347.80 | 9.96 | 0.401 | 0.552 |
| 2002 | 282.38 | 9.72 | 0.883 | 0.916 | 309.50 | 8.29 | 0.888 | 0.990 |
| 2003 | 282.14 | 8.87 | 0.771 | 0.879 | 319.71 | 10.24 | 0.626 | 0.708 |
| 2004 | 322.38 | 8.74 | 0.785 | 0.810 | 289.22 | 8.77 | 0.512 | 0.609 |
| 2005 | 417.68 | 9.78 | 0.741 | 0.828 | 245.52 | 7.72 | 0.994 | 1.172 |
| 2006 | 454.42 | 10.27 | 0.845 | 0.780 | 378.09 | 11.56 | 0.977 | 1.036 |
| 2007 | 518.83 | 13.00 | 0.821 | 0.928 | 518.03 | 14.97 | 0.743 | 0.766 |
| 2008 | 621.09 | 12.84 | 1.050 | 1.048 | 728.60 | 21.21 | 0.550 | 0.688 |
| 2009 | 872.04 | 15.56 | 0.849 | 1.036 | 993.49 | 29.85 | 0.398 | 0.446 |
| 2010 | 1093.19 | 12.10 | 0.592 | 0.817 | 1480.99 | 42.58 | 0.582 | 0.515 |
| 2011 | 1330.35 | 12.23 | 0.645 | 0.626 | 1306.48 | 29.28 | 0.382 | 0.498 |
| 2012 | 1598.48 | 11.06 | 0.761 | 0.697 | 1643.05 | 32.75 | 0.406 | 0.475 |
| 2013 | 1819.95 | 11.05 | 0.804 | 0.747 | 2128.56 | 42.39 | 0.388 | 0.468 |
| 2014 | 1908.44 | 9.63 | 0.714 | 0.778 | 2376.38 | 47.09 | 0.425 | 0.484 |
| 2015 | 2224.11 | 9.08 | 0.583 | 0.709 | 2674.52 | 41.80 | 0.437 | 0.550 |
| G.Mean | 748.26 | 10.00 | 0.804 | 0.645 | 848.12 | 20.04 | 0.524 | 0.607 |

*Source: Compiled from Annual Reports of Sample Firms (1996-2015)*

*Table A2:* Financial Leverage Ratios of Companies

| Year | Domestic Co. | | | MNCs | | |
|---|---|---|---|---|---|---|
| | TD/SE | TD/TA | TD/CE | TD/SE | TD/TA | TD/CE |
| 1996 | 2.724 | 0.430 | 2.197 | 0.250 | 0.120 | 0.223 |
| 1997 | 1.776 | 0.303 | 1.586 | 0.229 | 0.121 | 0.219 |
| 1998 | 1.985 | 0.332 | 1.725 | 0.262 | 0.129 | 0.235 |
| 1999 | 1.937 | 0.345 | 1.740 | 0.189 | 0.096 | 0.180 |
| 2000 | 2.049 | 0.367 | 1.820 | 0.114 | 0.067 | 0.103 |
| 2001 | 2.460 | 0.398 | 2.171 | 0.142 | 0.073 | 0.139 |
| 2002 | 2.672 | 0.417 | 2.369 | 0.097 | 0.048 | 0.095 |
| 2003 | 2.826 | 0.440 | 2.496 | 0.258 | 0.108 | 0.216 |
| 2004 | 2.778 | 0.408 | 2.501 | 0.309 | 0.121 | 0.277 |
| 2005 | 1.858 | 0.380 | 1.654 | 0.607 | 0.146 | 0.510 |
| 2006 | 2.108 | 0.344 | 1.956 | 0.551 | 0.133 | 0.486 |
| 2007 | 3.105 | 0.350 | 3.020 | 0.575 | 0.121 | 0.487 |
| 2008 | 1.747 | 0.324 | 1.689 | 0.373 | 0.104 | 0.317 |
| 2009 | 0.938 | 0.272 | 0.863 | 0.081 | 0.040 | 0.077 |
| 2010 | 1.138 | 0.241 | 1.051 | 0.020 | 0.012 | 0.020 |
| 2011 | 1.334 | 0.281 | 1.241 | 0.080 | 0.039 | 0.079 |
| 2012 | 1.484 | 0.288 | 1.379 | 0.083 | 0.044 | 0.083 |
| 2013 | 1.220 | 0.282 | 1.134 | 0.057 | 0.030 | 0.057 |
| 2014 | 1.275 | 0.292 | 1.152 | 0.099 | 0.044 | 0.098 |
| 2015 | 1.157 | 0.308 | 0.959 | 0.030 | 0.014 | 0.028 |
| G.Mean | 1.929 | 0.340 | 1.735 | 0.220 | 0.080 | 0.197 |

*Source: Compiled from Annual Reports of Sample Firms (1996-2015)*

*Table A3:* Net Profit Margin, Sales Growth and Firm Size of Companies

| Year | Domestic Co. | | | MNCs | | |
|---|---|---|---|---|---|---|
| | Net Profit Margin(%) | Sales Growth(%) | Firm Size (Ln TA) | Net Profit Margin(%) | Sales Growth(%) | Firm Size (Ln TA) |
| 1996 | 6.28 | 15.77 | 20.25 | 9.48 | 17.06 | 20.49 |
| 1997 | 7.33 | 40.60 | 20.71 | 9.64 | 10.66 | 20.61 |
| 1998 | 9.36 | 27.27 | 20.93 | 10.57 | 4.36 | 20.71 |
| 1999 | 9.33 | 9.94 | 21.02 | 10.43 | 1.92 | 20.75 |
| 2000 | 9.79 | 17.35 | 21.11 | 13.25 | 25.37 | 20.81 |
| 2001 | 8.69 | 25.38 | 21.31 | 10.37 | 9.76 | 20.95 |
| 2002 | 6.73 | 11.64 | 21.47 | 7.27 | 2.52 | 21.00 |
| 2003 | 6.09 | 13.78 | 21.58 | 8.53 | 19.90 | 21.15 |
| 2004 | 5.53 | 14.61 | 21.66 | 7.40 | 4.36 | 21.18 |
| 2005 | 7.44 | 24.18 | 21.77 | 5.36 | 18.64 | 21.30 |
| 2006 | 6.38 | 16.31 | 21.95 | 6.27 | 32.07 | 21.41 |
| 2007 | 5.94 | 19.38 | 22.12 | 7.71 | 12.27 | 21.55 |
| 2008 | 5.50 | 18.55 | 22.18 | 9.40 | 18.59 | 21.72 |
| 2009 | 10.31 | 5.16 | 22.26 | 12.46 | 16.52 | 21.81 |
| 2010 | 14.43 | 16.89 | 22.52 | 16.36 | 16.13 | 21.96 |
| 2011 | 13.50 | 25.60 | 22.82 | 9.48 | 13.49 | 22.04 |
| 2012 | 8.51 | 24.24 | 22.96 | 9.28 | 16.15 | 22.17 |
| 2013 | 8.99 | 4.83 | 23.04 | 11.18 | 5.63 | 22.31 |
| 2014 | 8.86 | 5.68 | 23.15 | 10.89 | 6.60 | 22.38 |
| 2015 | 8.85 | 19.79 | 23.27 | 11.68 | 1.77 | 22.40 |
| G.Mean | 8.39 | 17.848 | 21.90 | 9.85 | 12.69 | 21.43 |

*Source: Compiled from Annual Reports of Sample Firms (1996-2015)*

*Table A4:* Test of Stationarity of Variables (Domestic Companies)

| Name of variable | Original value | | First difference | | Second difference | |
|---|---|---|---|---|---|---|
| | ADF Test statistic | P value of test statistic | ADF Test statistic | P value of test statistic | ADF Test statistic | P value of test statistics |
| FLR(CV) | -2.96025 | 0.1688 | -3.90748 | 0.0355 | -5.09552 | 0.004827 |
| FLR(MAD) | -2.08519 | 0.519 | -2.87426 | 0.1935 | -3.85158 | 0.04094 |
| TD/TA | -1.90895 | 0.6085 | -5.49959 | 0.00208 | -6.33332 | 0.0005998 |
| TD/SE | -2.4399 | 0.3495 | -4.41467 | 0.01437 | -4.67495 | 0.009896 |
| TD/CE | -2.41307 | 0.3612 | -4.23577 | 0.0198 | -4.77285 | 0.008341 |
| NPM | -1.97475 | 0.5752 | -3.01454 | 0.1567 | -4.25288 | 0.02054 |
| EBIT | -0.042287 | 0.9916 | -1.56793 | 0.7624 | -2.59757 | 0.02852 |
| EPS | -1.35651 | 0.8383 | -5.34326 | 0.002745 | -9.35932 | 0.0000015 |
| FS | -4.18004 | 0.02065 | -4.28288 | 0.0182 | -3.29792 | 0.0102 |
| SG | -3.9409 | 0.03197 | -5.40624 | 0.002454 | -5.36091 | 0.00307 |

*Source: Annual Reports of Sample Firms (1996-2015) Note: Data processed on Gretl*

*Table A5:* Normality Test of Residuals

| Model No. | Kolmogorov-Smirnov | | | Shapiro-Wilk | | | Chi Square | |
|---|---|---|---|---|---|---|---|---|
| | Statistic | df | Sig. | Statistic | df | Sig. | Chi Statistic | P value |
| D1(FLR-CV) | .131 | 17 | .200 | .957 | 17 | .583 | 0.475 | 0.78845 |
| D2 (FLR-MAD) | .112 | 17 | .200 | .944 | 17 | .375 | 3.846 | 0.14620 |
| M1(FLR-CV) | 0.100 | 17 | 0.200 | 0.965 | 17 | .730 | 0.812 | 0.66615 |
| M2 (FLR-MAD) | 0.205 | 17 | 0.055 | 0.904 | 17 | .080 | 1.590 | 0.45162 |

*Source: Compiled from Annual Reports (1996-2015) Note: Data processed on SPSS & Gretl*

*Table A6:* Test of Stationarity of Variables (MNCs)

| Name of variable | Original value | | First difference | | Second difference | |
|---|---|---|---|---|---|---|
| | ADF Test statistic | P value of test statistic | ADF Test statistic | P value of test statistic | ADF Test statistic | P value of test statistics |
| FLR(CV) | -2.24847 | 0.4378 | -4.85646 | 0.006518 | -6.10828 | 0.0008648 |
| FLR(MAD) | -2.13174 | 0.4954 | -4.56118 | 0.01105 | -5.88098 | 0.001266 |
| TD/TA | -1.7191 | 0.7002 | -3.24793 | 0.1085 | -5.70871 | 0.001704 |
| TD/SE | -1.39829 | 0.8255 | -2.95371 | 0.1719 | -5.98867 | 0.001056 |
| TD/CE | -1.37537 | 0.8326 | -2.6425 | 0.2684 | -5.23042 | 0.003832 |
| NPM | -2.22979 | 0.4468 | -4.08408 | 0.02597 | -5.49219 | 0.002457 |
| EBIT | -0.097632 | 0.9902 | -4.79511 | 0.007271 | -6.32426 | 0.0006088 |
| EPS | -1.69001 | 0.7133 | -4.42583 | 0.01408 | -5.7334 | 0.001634 |
| FS | -1.72944 | 0.6954 | -6.01077 | 0.0008396 | -8.80503 | 0.0000023 |
| SG | -4.14224 | 0.02214 | -6.32839 | 0.0004875 | -7.14808 | 0.0001 |

*Source: Compiled from Annual Reports (1996-2015) Note: Data processed on Gretl software*

*Table A7:* Detection and Measures of Multicollinearity Problem in Models D1 & D2

| Model D1(FLR-CV) & Model D2 (FLR-MAD) | | | |
|---|---|---|---|
| 2nd difference of Variables | VIF | Measures taken to remove multicollinearity | VIF after removing multicollinearity |
| NPM | 1.339 | | 1.139 |
| EPS | 1.802 | | 1.668 |
| TD/TA | 3.803 | | 1.839 |
| TD/SE | 218.369 | | 1.755 |
| EBIT | 1.507 | | 1.463 |
| TD/CE | 206.825 | Variable dropped | |
| SG | 1.628 | | 1.611 |
| FS | 2.125 | | 1.889 |
| Model M1(FLR-CV) & Model M2 (FLR-MAD) | | | |
| EBIT | 31.933 | | 5.694 |
| SG | 1.894 | | 3.591 |
| TD/TA | 9.744 | | 6.427 |
| TD/SE | 74.032 | | 3.750 |
| FS | 5.141 | | 4.095 |
| EPS | 63.704 | Transformed to reciprocal | 9.012 |
| NPM | 23.680 | Transformed to reciprocal | 9.585 |
| TD/CE | 89.998 | Variable dropped | |

*Source: Compiled from Annual Reports (1996-2015) Note: Data processed on Gretl software. VIF is same for both the models*

*Table A8:* Breusch-Pagan Test of Heteroscedasticity

| Name of the model | No. of observations | LM test statistic | p value of LM test statistic |
|---|---|---|---|
| D1(FLR-CV) | 17 | 3.558737 | 0.828966 |
| D2(FLR-MAD) | 17 | 4.518053 | 0.718542 |
| M1(FLR-CV) | 17 | 3.377039 | 0.848073 |
| M2(FLR-MAD) | 17 | 4.977143 | 0.662753 |

*Source: Compiled from Annual Reports (1996-2015) Note: Data processed on Gretl software*

*Table A9:* Test of Autocorrelation

| Name of the model | DW Stat | P value of DW | $D_U$ | $D_L$ | Decision | Test statistic of LM | P value of LM test |
|---|---|---|---|---|---|---|---|
| D1(FLR-CV) | 2.5337 | 0.8854 | 2.5366 | 0.4511 | No decision | 3.2294 | 0.11 |
| D2(FLR-MAD) | 2.3306 | 0.7924 | 2.5366 | 0.4511 | No decision | 2.2971 | 0.168 |
| M1(FLR-CV) | 1.9776 | .8800 | 2.5366 | 0.4511 | Near 2 | 0.1070 | 0.752 |
| M2(FLR-MAD) | 2.2112 | .9574 | 2.5366 | 0.4511 | Near 2 | 1.3448 | 0.28 |

*Source: Compiled from Annual Reports (1996-2015) Note: Data processed on Gretl software*

*Table A10:* Summary Statistics of the Models

| Model No. | R square | Adj. R square | S.E of estimates | F statistic | p value of F |
|---|---|---|---|---|---|
| D1(FLR-CV) | 0.727780 | 0.516053 | 0.116236 | 3.437354 | 0.044450 |
| D2(FLR-MAD) | 0.670269 | 0.413811 | 0.091411 | 2.613568 | 0.090403 |
| M1(FLR-CV) | 0.908 | 0.836 | 0.141 | 12.703 | .0005 |
| M2(FLR-MAD) | 0.913 | 0.845 | 0.140 | 13.499 | .0004 |

*Source: Compiled from Annual Reports (1996-2015) Note: Data processed on SPSS & Gretl software*

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# Challenges for Small and Micro Enterprises in Accessing Finance (Case of Wolaita Soddo Town)

By Mesele Kebede Manaye & Mesifin Gebre Tigro
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*Abstract-* Small-scale enterprises have become an important contributor to Ethiopia's economy. The purpose of this paper was to bring to light one of the major prerequisites, namely access to finance aspects, of the small scale enterprises which are foundation in accelerating economic growth. The main objective of the paper is to identify the challenges that small businesses in Wolaita soddo town face in accessing finance from financial institution through identifying the dominant means of financing small businesses and factors influence the extent of accessing finance. This study would have adopted descriptive statistics and econometric analysis. The target population would have been drawn from all micro and small enterprises in Wolaita Sodo town. The data for this study would have been gathered through the use of primary and secondary sources from 282 respondents. The study would have used stratified random sampling technique to select the sample. Both quantitative and qualitative data analysis methods were adopted. Besides, descriptive statistics, the linear regression model were used to determine the covariates of the likelihood of having a loan from a formal financial institution. From the study findings, it can infer that, sources of initial capital influences accessibility to credit facilities to a great extent followed by purchase of fixed assets financed by and major obstacles of SMEs access to credit facilities. This study recommends that the credit giving institutions come up with programs of educating the MSEs on how they can go about obtaining credit facilities.

*Keywords: Access to Finance, SME's, Challenges, Wolaita Sodo Town, Ethiopia.*

*GJMBR-C Classification: JEL Code: E59*

CHALLENGESFORSMALLANDMICROENTERPRISESINACCESSINGFINANCECASEOFWOLAITASODDOTOWN

*Strictly as per the compliance and regulations of:*

# Challenges for Small and Micro Enterprises in Accessing Finance (Case of Wolaita Soddo Town)

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## I. Introduction

Small and Micro Enterprises (SMEs) are the lifeblood of developing economies. Finance is the backbone of SMEs and any other business enterprise (McKernan & Chen, 2005). Both in the developing and developed economies small firms have little access to external finance and are thus constrained in their operation and growth (Galindo & Schiantarelli, 2003).

The SME sector in Ethiopia is considered as an instrument in bringing about economic transition by effectively using the skill and talent of the people particularly women and youth with least training, limited capital and available technology. The Small and Medium Enterprises sector (SMEs) contributed nearly Birr 8.3 million in 1996 to the exchequer. Based on the 1992/93 data, this figure constitutes about 3.4% of the GDP, 33% of the industrial sector's contribution and 52% of the manufacturing sector's contribution to the GDP of the same year (Gebrehiwot, 2006).

The development of the sector in Ethiopia believed to be the major source of employment and income generation for a wider group of the society in general and urban youth in particular. The five-year Growth and Transformation Plan (GTP) of Ethiopia envisages creating a total of three million micro and small-scale enterprises at the end of the plan period (NBE, 2011). Citing the source from the Federal Micro and Small Enterprise Development Agency (FMESDA), the EEA Research Brief noted that seventy thousand five hundred (70,500) new SMEs were established in 2011/12 employing eight hundred six thousand three hundred (806,300) people across the country. The performance is below the target set in GTP (EEA, 2015).

In this project, we analyze the financing gap of SMEs in Ethiopia and recommend ways of addressing the financing gap. Specifically, the study addresses a) the financing needs and financing options of SMEs in Ethiopia, b) Key constraints of SMEs access to finance, c) extent of banks and MFIs involvement with SMEs, and the drivers and obstacles of SME bank financing, and d) the impact of existing government policies and potential areas of government involvement. Unlike many previous studies that address either the demand side or the supply side limitations of access to finance (see for e.g., Petersen and Rajan, 1994; Wiedmaier-Pfister et al, 2008; Ngoc et al., 2009; Ghimire and Abo, 2013) this study synthesizes the demand side constraints.

### *a) Statement of the Problem*

In almost all economies of the world, especially in developing countries in Africa, micro and small enterprises are crucial and are a key factor for sustained growth and development. SMEs play pivotal roles in creating dynamic, market oriented economic growth, employing the growing workforce in developing countries, alleviating poverty and promoting democratization. (Obwocha, 2006).

Africa's SMEs have little access to finance, which thus hampers their emergence and eventual growth. Their main sources of capital are their retained earnings and informal savings and loan associations, which are unpredictable, not very secure and have little scope for risk sharing because of their regional or sector based focus. Access to formal finance is poor because of the high risk of default among SMEs and due to inadequate financial facilities. Small businesses in Africa can rarely meet the conditions set by financial institutions, which see SMEs as a risk because of poor guarantees and lack of information about their ability to repay loans.

The financial system in most of Africa is under-developed however and so provides few financial instruments. Capital markets are in their infancy, shareholding is rare and no long-term financing is available for SMEs. Non-bank financial intermediaries, such as microcredit institutions, could be a big help in lending money to the smallest SMEs but they do not have the resources to follow up their customers when they expand (Kauffmann, 2005).

According to the World Bank recent report of Ethiopia, small-scale enterprises are the most marginalized in getting access to financial institutions. As to the report, the private sector plays a crucial role as a catalyst for economic change through offering financing options, which allow firms to expand and innovate. Despite the role of SMEs in the Ethiopian economy, the financial constraints they face in their operations are daunting and this has had a negative impact on their development and limited their potential to drive the national economy as expected. This is worrying for a developing economy without the requisite infrastructure and technology to attract big businesses in large numbers.

Thus, this research is attempted to analyze the gaps in accessing the finances by SMEs in Ethiopia and recommend measures to bridge those gaps. Specifically, the study aims to address the financing needs, key constraints in accessing finance, and the extent of involvement of banks and MFIs in driving away the obstacles thereby creating a room for reforms in Government policies. Moreover, unlike many previous studies that address either the demand side or the supply side limitations of access to finance (see for e.g., Petersen and Rajan, 1994; Wiedmaier-Pfister et al, 2008; Ngoc et al., 2009; Ghimire and Abo, 2013) this study synthesizes both the demand side and supply side constraints. Hence, this research guided by the following basic research questions.

1. To what extent Small Business Enterprises have an access to finance to run the business in Sodo Town administration?
2. What are the means to finance the Small Business Enterprises in Sodo Town?
3. What are the major challenges that hinder the Small Business Enterprises access to finance in Sodo Town Administration?
4. What is the mechanism to overcome the challenges of Small Business enterprise facing with access to finance?

### b) *Objectives*

#### i. *General Objective*

The general objective of this study is to explore the challenges of SMEs while mobilizing finances to support the venture in Sodo Town and advise the Administration through workable recommendations.

#### ii. *Specific Objectives*

The study would have the following specific objectives:

1. Explore access to finance to run the business in Sodo Town administration.
2. To identify the means to finance Small Business Enterprises in Sodo Town.
3. To dig out the major challenges that hinder the Small Business Enterprises in accessing the related financial support vis-à-vis Sodo Town
4. To formulate the intervention mechanisms in overcoming the challenges of Small Business Enterprises and mobilize sufficient financial support in the study area.

### c) *Significance of the Study*

Considering the significance of SMEs in Ethiopia, it is important to understand the challenges facing SMEs in accessing credit facilities in Wolaita Sodo Town. The research expected to benefit various groups of stakeholders as follows:

- The research would have enable the policy makers to come up with a viable and focused entrepreneurship strategy that can help SMEs access to credit facilities. The study would have help develop a University and SME interface to boost the sector by encouraging young graduates in exploring employment potential.
- The study would have be a source of reference for future research
- The research would have come up with products, which are tailor made to fit into entrepreneurship financial needs.
- To stakeholders like financial institutions, investors, shareholders, employees, pressure groups, etc., the research provides information for suggesting improvement in service delivery of the respective credit facilities providers in Wolaita Sodo Town.

## II. Literature Review

Access to external sources of finance may increase growth possibilities since it facilitates the development and improvement of firm's products and services or hire new employees. In transition economies, the development that financial markets experience may create barriers linked to the access to finance. Hence, academic research considers financial constraints as an important obstacle for entrepreneurship and firm growth. Empirical evidence supporting the importance of access to external finance for business growth can be found in Brown, Earlem & Lup, (2005), who examines firm growth determinants. Conversely, Johnson, McMillan and Woodruff (2000) evaluate institutional reforms in five Eastern European countries (including Romania), and they conclude that access to bank finance does not prevent business growth.

Lack of access to credit facilities is almost universally indicated as key problem for small and micro enterprises. In most cases, even where credit is available mainly through banks, the entrepreneurs may lack freedom of choice because the banks' lending conditions may force the purchase of heavy, immovable equipment that can serve as collateral for the bank. Credit constraints operate in variety of ways in Kenya where undeveloped capital market forces entrepreneurs to rely on self-financing or borrowing from friends and relatives. Lack of access to long-term credit for micro, small and medium enterprise forces them to rely on high cost short term finance (Wanjohi & Mugure, 2008).

Matavire et al., (2013), in their study on challenges facing SMEs in accessing finance from financial institutions: The case of Belaway, Zimbabwe found out that SMEs fail to secure loans because of restrictive requirements of the financial institutions, top among them being collateral security. Among their recommendations is that the government should play its role of enabling SMEs to obtain finance from financial institutions. Makena, et al., (2014), in their study on challenges facing women entrepreneurs in accessing business finance in Kenya: Case of Ruiru Township, Kiambu County, lack of collateral was one of the objectives. However, the study found out that lack of collateral was a greater hindrance to credit accessibility by women entrepreneurs. This is due to lack of tangible assets like land, which used as an asset to secure credits. Among their recommendations is that the government should play its role of enabling SMEs to obtain finance from financial institutions.

Gitari, (2012) in her study on factors affecting women entrepreneurs' financial performance in Kenya: a case of Ngara Market found out that lack of information on who is offering what and the cost of obtaining such services limit them and that high inventory costing are some of the major drawbacks for success in women entrepreneurship. The high cost of running the entrepreneurs is a big threat to the women development due to lack of adequate capital and on the other hand lack of information on how to access funds to boost the business also is a major threat. At Wolaita Sodo town (2017), did a study on factors affecting the performance of SMEs traders at Wolaita Sodo town, Ethiopia. The study concluded that access to finance affected performance of SME's largely because it limited the entrepreneurs' ability to take advantage of opportunity as and when they arose.

## III. Conceptual Framework

- A conceptual framework is a product of qualitative process of theorization, which interlinks concept that together provides a comprehensive understanding of a phenomenon or phenomena (Jabareen, 2009).
- The concepts that constitute a conceptual framework support one another, articulate their respective phenomena, and establish a framework-specific philosophy that defines relationships. The conceptual framework of this study relates to independent variables; collateral requirements, cost of credit, availability of information on finance, business risks and the dependent variable; access to credit facilities by micro and small enterprises in Wolaita Sodo

## IV. Research Methodology

### a) *Research Design*

This study would have adopted descriptive statistics and econometric analysis. The target population would have been drawn from all micro and small enterprises in Wolaita Sodo town. Currently the total micro and small enterprises registered with Wolaita Sodo Town is 957. The businesses in operation are mainly in manufacturing, construction, trade, service and urban agriculture.

*Table 3.1:* Shows Population and sample of the study

| Type of business | Population | Sample size(n) |
|---|---|---|
| Manufacturing | 135 | 40 |
| Construction | 230 | 68 |
| Trade | 223 | 65 |
| Service | 295 | 87 |
| Urban Agriculture | 74 | 22 |
| Total | 957 | 282 |

*Source: Field Survey, 2017*

*b) Data Type*

The data for this study would have been gathered through the use of primary and secondary sources. The primary data source for this study involves the use of questionnaire. The questionnaires would have been distributed to SME operators and/or owners for first hand information for processing towards answering the research questions. The questionnaire would have been divided into three sections.

*c) Sampling and Sampling Techniques*

i. *Sample Size*

Sample sizes for survey data would have been calculated using simplified formula for determining proportional sample sizes survey (Gay et al., 2009). The formula used to calculate the sample sizes, where a 95% confidence level and P = 0.5 are assumed in the calculation. Described by Yemane (1967), a simplified formula for calculating sample size of a population proportion is unknown that is given.

| | | |
|---|---|---|
| N | = | the population size |
| n | = | the sample size |
| | = | is the level of precision |
| N | = | 282 |

ii. *Sampling Techniques*

The study would have used stratified random sampling technique to select the sample. The study would grouped the population into strata. From each stratum, the study used simple random sampling to select 282 respondents. This sampling design would have been used because the population of study would have not homogenous and was to be sub-divided into sub-units namely manufacturing, construction, trade service and urban agriculture. Kothari (2004) recommends stratified random sampling because it is accurate, easily accessible, divisible into relevant strata and it enhances better comparison; hence representation across strata. Another advantage of stratified random sampling is its ability to ensure inclusion of sub-groups, which would otherwise be omitted entirely by other sampling methods because of their small number in the population.

*d) Data Collection Instruments*

The study would have used questionnaire to collect data. Questionnaires would have been constructed based on the research objectives. The questionnaire contained closed-ended questions using a Likert scale (ranging from 1 = highly disagree; 2 = disagree; 3 = neutral 4 = agree; 5 = highly agree).

*e) Hypothesis Testing*

Research statements are tested using the Z-test statistical tool. The tests are measured within 95% confidence interval having 0.05 significance levels. The following are the hypothesis drawn:

*H1:* Sources of initial capital are not due to challenges of Small and Micro Enterprises in accessing the required finances.

*H2:* Availability of information on finance is not a serious challenge for Small and Micro Enterprises in accessing the required finances

*H3:* The major constraints to SMEs are not a serious challenge for Small and Micro Enterprises in accessing the required finances.

*f) Data Analysis and Interpretation*

i. *Data Analysis*

Under this section, the process by which outputs are generated through three steps: preparing data for analysis, analyzing the data, and interpreting the output data, i.e. testing the research hypothesis and drawing valid inferences. Qualitative analysis consisted of examining, categorizing, tabulating and recombining evidences to address the research questions. Qualitative data grouped into meaningful patterns and themes that observed to help in the summarizing and organization of the data.

Quantitative data analyzed with statistical techniques such as frequency counts, percentages, arithmetic means, standard deviations, bar charts and tabulation to show differences in frequencies. Qualitative data would have been analyzed descriptively with questionnaires. Statistical Package for Social Sciences (SPSS) version 20 was used to aid in coding, entry and analysis of quantitative data obtained from the closed ended questions.

Besides, descriptive statistics, the linear regression model would be used to determine the covariates of the likelihood of having a loan from a formal financial institution. The linear regression model is extremely flexible and widely used function, and leads itself to meaningful interpretations when the dependent variable is dichotomous outcome. It is a powerful tool in its ability to estimate the individual effects of the continuous or categorical variables on the qualitative dichotomous dependent variable (Wright, 1995). The dependent variable in model is whether SME's benefit from banking facilities or not. It is a categorical variable with a value of 1 when a SME's benefits from banking facilities and 0 otherwise. This is regressed against factors that possibly limit a firm's access to bank loan. The model specified as follows:

Formula: $Zi = \beta 0 + xji + \mu i$

Where Zi is the dependent variable with a value of 1 when firm i benefits from micro finance facilities and 0 other wise. Xji are a vector of explanatory variables which include major obstacle of SME's, availability of financial information, sources of initial capital, working capital financed by firm size and purchase of fixed assets financed by. Finally, $\mu i$ is the discrepancy term.

# V. Findings and Discussion

## a) Introduction

This chapter presents the analysis of data collected from respondents. The collected data was edited and cleaned for completeness and consistency in preparation for coding. Once coded, the data was keyed into the Statistical Package for Social Sciences (SPSS-20) for analysis.

## b) Results of the Pilot Study

### i. Data Reliability

A pre-test of 5% of the population size was conducted to give a representation of the selected population thus the designed questionnaire was tested on 12 potential respondents (Mugenda and Mugenda, 2003). To test the internal consistency of the Likert scale used in this study, reliability analysis was done using Cronbach's Alpha as the measure. A reliability co-efficient of $\alpha \geq 0.7$ was considered adequate. A co-efficient of 0.761 was registered indicating that the scale used had a high level of internal consistency. This indicated that the scale was reliable enough to test the extent to which micro and small enterprises faced challenges in accessing finance facilities. The results of the reliability analysis are shown in Table 4.1;

*Table 4.1:* Results of the Pilot Study Reliability Statistics

| Cronbach's Alpha | Cronbach's Alpha | No. of Items |
|---|---|---|
| 0.761 | 0.780 | 280 |

*Source: Field Survey, 2017*

The researchers administered 282 questionnaires and 280 were completed and returned successfully. This represents a response rate of 99.3%. This response rate was adequate to allow the researchers to continue with the analysis. The questionnaires were composed of questions that addressed the objectives of the study. The study sought to establish the influence of major obstacles of SMEs, sources of initial capital, working capital financed by firm size, availability of information on accessibility of credit facilities by MSEs in Wolaita Soddo town.

# VI. Sex of the Respondents

The study sought to know the distribution of the respondents by gender. The study findings indicated that 62.5% of the respondents' were male while 37.5% were female. This implied that the male participants dominated the businesses at Wolaita Soddo town. The findings also indicated that the researchers observed gender balance during the administration of questionnaires. It reveals that, the SME is largely dominated by the male participants. Thus, it needs attention to increase the number of women entrepreneur in the SMEs to sustained their economic independence and improve the level of employment of women.

*Table 4.1:* Sex of Respondents

| Sex | Frequency | Percent | Cumulative Percent |
|---|---|---|---|
| Female | 105 | 37.5 | 37.5 |
| Male | 175 | 62.5 | 100.0 |
| Total | 280 | 100.0 | |

*Source: Field survey, 2017*

# VII. Level of Education

The study also sought the distribution of the respondents by their level of education. The study established that most (48.9%) of the respondents' were TVET levels followed by diploma levels at 37.5% and then BA 13.6%. This implies that the respondents were educated enough to understand the issues being sought by the researchers.

The results of the study are as shown in Table 4.2.

*Table 4.2:* Education Level of Respondents

| Qualification | Frequency | Percent | Cumulative Percent |
|---|---|---|---|
| BA | 38 | 13.6 | 13.6 |
| Diploma | 105 | 37.5 | 51.1 |
| TVET | 137 | 48.9 | 100.0 |
| Total | 280 | 100.0 | |

*Source: Field survey, 2017*

## VIII. Age of Respondent

The survey result shows that about 66.4% of the sampled respondents were under the age of 25-35 followed and 31.1%, 2.5% of respondents were under the age of <25 and 35-45 respectively. This implies that the researchers-sought opinions from respondents who had the age of respondents were enough to understand the challenges faced when trying to access credit facilities. The study findings are as shown in Table 4.3.

*Table 4.3:* Age of Respondents

| Age | Frequency | Percent | Cumulative Percent |
|---|---|---|---|
| <25 | 87 | 31.1 | 31.1 |
| 25-35 | 186 | 66.4 | 97.5 |
| 35-45 | 7 | 2.5 | 100.0 |
| Total | 280 | 100.0 | |

*Source: Field Data of 2017*

## IX. Age of the Company

The study further sought to know the duration the businesses had been in existence. The study found out that most (49.3%) of the businesses had been in existence for below two years followed by 43.6% of the businesses that had been existence for 2-5 years. Only 7.1% of the businesses had less than 6-10 years' existence. This implies that the researchers-sought opinions from respondents who had been in business long enough to understand the challenges faced when trying to access credit facilities. The study findings are as shown in Table 4.4.

*Table 4.4:* Age of the Company

| | Frequency | Percent | Cumulative Percent |
|---|---|---|---|
| 2-5 years | 122 | 43.6 | 43.6 |
| 6-10 years | 20 | 7.1 | 50.7 |
| Below 2 Years | 138 | 49.3 | 100.0 |
| Total | 280 | 100.0 | |

*Source: Field Survey 2017*

## X. Nature of Organization

In this section, the study sought to know the distribution of respondents by the nature of business they were engaged in. According to the study findings, most (29.6%) of the respondents were engaged in the service followed by 23.6% of construction and Traders accounted for 23.9% respectively. Manufacturing and Urban agriculture (14.3% and 8.6%) accounted only. This indicates that the researchers sought views from people of diverse businesses to avoid any bias. The findings are shown in Table 4.5.

*Table 4.5:* Nature of the Organization

| | Frequency | Percent | Cumulative Percent |
|---|---|---|---|
| Construction | 67 | 23.9 | 23.9 |
| Manufacturing | 40 | 14.3 | 38.2 |
| Service | 83 | 29.6 | 67.9 |
| Trade | 66 | 23.6 | 91.4 |
| Urban Agriculture | 24 | 8.6 | 100.0 |
| Total | 280 | 100.0 | |

*Source: Field Survey, 2017*

## XI. Current Position in the Organization

In this section, the study sought to know the distribution of respondents by their position in the organization. The respondents position within the organization was categorized in to four categories namely accountants, cashiers, mangers and secretary. According to the study findings, most (74.3%) of the respondents were mangers in the organization, 13.6% of the respondents were cashier and accountants and secretary were accounted for 2.1% and 10% respectively. This implies that the researchers-sought opinions from respondents who had been in business were mangers and this helped the researchers to get their feelings regarding the challenges they faced when trying to access credit facilities. The findings are shown in Table 4.6

*Table 4.6:* Current position of respondents

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| | Accountant | 6 | 2.1 | 2.1 |
| | Cashier | 38 | 13.6 | 15.7 |
| | Manger | 208 | 74.3 | 90.0 |
| | Secretary | 28 | 10.0 | 100.0 |
| | Total | 280 | 100.0 | |

*Source: Field Survey, 2017*

*c) Descriptive Analysis of access to finance of Small and Micro Enterprise*

This part explains the descriptive statistics based on the factors that affect the access to finance of SME's. The results for measures of central tendency and dispersion were obtained from the sample of respondents of manufacturing, construction; trade, service and urban agriculture are shown in the following tables.

The study sought to know the extent to which various factors influenced access to credit facilities for micro and small enterprises in Wolaita Sodo town. The extent to which the factors influenced access to credit was measured on a Likert scale of 1-5 where 1- highly disagree, 2- disagree, 3- neutral, 4- agree and 5- highly agree.

*Table 4.7:* Access to Finance SME's

| | N | Mean | Std. Deviation | Variance |
|---|---|---|---|---|
| Y | 280 | 2.088 | .7310 | .534 |
| X1 | 280 | 3.5205 | .61876 | .383 |
| X2 | 280 | 2.41652 | .552472 | .305 |
| X3 | 280 | 2.833333 | .6392200 | .409 |
| X4 | 280 | 3.436 | .9595 | .921 |
| X5 | 280 | 3.800 | .6259 | .392 |

*Source: Field Survey, 2017*

The study found out that the extent of major obstacles influence of access to credit facilities to a moderate extent (*M* = 3.52, *SD*= 0.731) while source of initial capital influenced access to financing to a moderate extent also (*M*= 3.5205, *SD*= 0.618). The influence of working capital financed by firm size was to a moderate extent (*M*= 2.41, *SD*= 0.552) and so did purchase of fixed assets finance such as internal fund, owners contribution (*M*= 2.83, *SD*= 0.639). Availability of information like limited information on financial management and limited training /experience had the least influence but still it was to a moderate extent (*M*= 3.8, *SD*= 0.625). The standard deviations indicated the extent to which the responses were dispersed from the mean. Overall, measure obstacles influenced access to credit facilities only to a moderate extent (*M*= 3.52, *SD*= 0.731. This implies that access to credit was highly limited by measure obstacles such as lack of skilled manpower, lack of good telecommunication services, high interest rate and group guarantee. The results are as shown in Table 4.6.

These findings are in line with those of Matavire et al (2013) who their study on challenges facing SMEs in accessing finance from financial institutions, the case of Belaway, Zimbabwe found out that SMEs fail to secure loans because of measure obstacles to access to finance, top among them being collateral security.

## XII. Econometric Result

*Table 4.8:* Result of Linear Regression

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Tolerance | VIF |
| 1 | (Constant) | 3.456 | .421 | | 8.214 | .000 | | |
| | X1 | -.034 | .079 | -.029 | -.431 | .667 | .768 | 1.303 |
| | X2 | -.190 | .089 | -.143 | -2.132 | .034** | .754 | 1.325 |
| | X3 | -.106 | .073 | -.092 | -1.454 | .147 | .847 | 1.181 |
| | X4 | -.100 | .047 | -.132 | -2.154 | .032** | .911 | 1.098 |
| | X5 | -.038 | .073 | -.033 | -.525 | .600 | .868 | 1.152 |

a) *Dependent Variable: Y where as X1, X2, X3, X4 and X5 were independent variables*

b) *Note: B=regression coefficient, Exp (B) = odds ratio Overall, correct prediction = 95% Sig. = significance S.E = standard error*

*Source: Field Survey, 2017*

NB: X1 = major obstacle of SMEs
X2 = Source of initial capital
X3 = Working capital finance
X4 = Purchasing of fixed asset
X5 = Availability of Information that affects access to finance

In accordance with the above table, it can be inferred that the researchers rejects the H1 and H2 as there is an indication that a strong and significant relationship exists between sources of capital X2 and major obstacles faced by SMEs X1, as well as the obstacles faced by SMEs X1 is not due to availability of information to access finance X5. The scores p = 0.147 and p = 0.6 reveal their significant association and hence we fail to reject the hypothesis. Further, working capital finance X3 and purchasing of fixed assets X4 having p values less than 0.05 shows no significant association with major obstacle of SMEs X1 and hence alternate hypothesis gets accepted by rejecting the null.

## XIII. Conclusion and Recomendation

### a) *Conclusions*

The study sought to establish the extent to which major obstacles of SMEs, sources of initial capital, working capital financed by firm size, availability of information on accessibility of credit facilities by MSEs in Wolaita soddo town. From the study findings, it can infer that, sources of initial capital influences accessibility to credit facilities to a great extent followed by purchase of fixed assets financed by and major obstacles of SMEs which influenced access to credit facilities to a moderate extent and then availability of information on finance which has an influence in accessing credit facilities for micro and small enterprises only to a small extent. The study also concludes further that the respondents preferred to get their start-up capital from personal savings, relatives and friends because the collateral requirements and high repayment costs by financial institutions.

### i. *Recommendations*

The study findings yielded the following recommendations in view of the challenges faced by MSEs when accessing credit facilities for the expansion of their businesses.

- The management of banks should stretch further to more business people so as to be able to serve their banking needs. This will serve in increasing their chance of securing credit facilities.
- Credit provider institutions should come up with products for MSEs where collateral requirements are lenient.
- The credit giving institutions come up with programs of educating the MSEs on how they can go about obtaining credit facilities. The study therefore recommends that the management of these businesses should put in place proper accounting practices and adequate internal control systems, which will counter problems of information asymmetry that make MSEs risky for credit giving institutions.
- The management of the institutions should increase their product portfolios they offered to MSEs.
- The marketing departments should endeavor to research on the clients' desired options and be able to include the probable and realistic ones onto the list. This will help to reach out to the MSEs that cannot access to credit facilities.

## XIV. Areas for Further Research

The study recommends further research in the following areas; the effect of initial capital to start up and on the profitability of micro and small enterprises; the effect of finance to acquire fixed assets on MSEs access to credit facilities in Wolaita Sodo town. In future, a similar research should be done covering other towns as this research only covered micro and small enterprises in Wolaita Soddo town.

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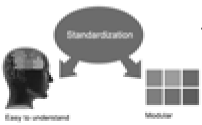


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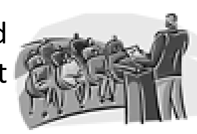

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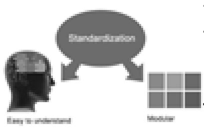


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**3. SUBMISSION OF MANUSCRIPTS**

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Complete support for both authors and co-author is provided.

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Original research paper: Such papers are reports of high-level significant original research work.

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Research articles: These are handled with small investigation and applications

Research letters: The letters are small and concise comments on previously published matters.

**5.STRUCTURE AND FORMAT OF MANUSCRIPT**

The recommended size of original research paper is less than seven thousand words, review papers fewer than seven thousands words also.Preparation of research paper or how to write research paper, are major hurdle, while writing manuscript. The research articles and research letters should be fewer than three thousand words, the structure original research paper; sometime review paper should be as follows:

**Papers**: These are reports of significant research (typically less than 7000 words equivalent, including tables, figures, references), and comprise:

(a)Title should be relevant and commensurate with the theme of the paper.

(b) A brief Summary, "Abstract" (less than 150 words) containing the major results and conclusions.

(c) Up to ten keywords, that precisely identifies the paper's subject, purpose, and focus.

(d) An Introduction, giving necessary background excluding subheadings; objectives must be clearly declared.

(e) Resources and techniques with sufficient complete experimental details (wherever possible by reference) to permit repetition; sources of information must be given and numerical methods must be specified by reference, unless non-standard.

(f) Results should be presented concisely, by well-designed tables and/or figures; the same data may not be used in both; suitable statistical data should be given. All data must be obtained with attention to numerical detail in the planning stage. As reproduced design has been recognized to be important to experiments for a considerable time, the Editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned un-refereed;

(g) Discussion should cover the implications and consequences, not just recapitulating the results; conclusions should be summarizing.

(h) Brief Acknowledgements.

(i) References in the proper form.

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References

References follow the Harvard scheme of referencing. References in the text should cite the authors' names followed by the time of their publication, unless there are three or more authors when simply the first author's name is quoted followed by et al. unpublished work has to only be cited where necessary, and only in the text. Copies of references in press in other journals have to be supplied with submitted typescripts. It is necessary that all citations and references be carefully checked before submission, as mistakes or omissions will cause delays.

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## TECHNIQUES FOR WRITING A GOOD QUALITY RESEARCH PAPER:

**1. Choosing the topic:** In most cases, the topic is searched by the interest of author but it can be also suggested by the guides. You can have several topics and then you can judge that in which topic or subject you are finding yourself most comfortable. This can be done by asking several questions to yourself, like Will I be able to carry our search in this area? Will I find all necessary recourses to accomplish the search? Will I be able to find all information in this field area? If the answer of these types of questions will be "Yes" then you can choose that topic. In most of the cases, you may have to conduct the surveys and have to visit several places because this field is related to Computer Science and Information Technology. Also, you may have to do a lot of work to find all rise and falls regarding the various data of that subject. Sometimes, detailed information plays a vital role, instead of short information.

**2. Evaluators are human:** First thing to remember that evaluators are also human being. They are not only meant for rejecting a paper. They are here to evaluate your paper. So, present your Best.

**3. Think Like Evaluators:** If you are in a confusion or getting demotivated that your paper will be accepted by evaluators or not, then think and try to evaluate your paper like an Evaluator. Try to understand that what an evaluator wants in your research paper and automatically you will have your answer.

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**11. Revise what you wrote:** When you write anything, always read it, summarize it and then finalize it.

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**22. Never start in last minute:** Always start at right time and give enough time to research work. Leaving everything to the last minute will degrade your paper and spoil your work.

**23. Multitasking in research is not good:** Doing several things at the same time proves bad habit in case of research activity. Research is an area, where everything has a particular time slot. Divide your research work in parts and do particular part in particular time slot.

**24. Never copy others' work:** Never copy others' work and give it your name because if evaluator has seen it anywhere you will be in trouble.

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**26. Go for seminars:** Attend seminars if the topic is relevant to your research area. Utilize all your resources.

**27. Refresh your mind after intervals:** Try to give rest to your mind by listening to soft music or by sleeping in intervals. This will also improve your memory.

**28. Make colleagues:** Always try to make colleagues. No matter how sharper or intelligent you are, if you make colleagues you can have several ideas, which will be helpful for your research.

**29. Think technically:** Always think technically. If anything happens, then search its reasons, its benefits, and demerits.

**30. Think and then print:** When you will go to print your paper, notice that tables are not be split, headings are not detached from their descriptions, and page sequence is maintained.

**31. Adding unnecessary information:** Do not add unnecessary information, like, I have used MS Excel to draw graph. Do not add irrelevant and inappropriate material. These all will create superfluous. Foreign terminology and phrases are not apropos. One should NEVER take a broad view. Analogy in script is like feathers on a snake. Not at all use a large word when a very small one would be sufficient. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Amplification is a billion times of inferior quality than sarcasm.

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**33. Report concluded results:** Use concluded results. From raw data, filter the results and then conclude your studies based on measurements and observations taken. Significant figures and appropriate number of decimal places should be used. Parenthetical remarks are prohibitive. Proofread carefully at final stage. In the end give outline to your arguments. Spot out perspectives of further study of this subject. Justify your conclusion by at the bottom of them with sufficient justifications and examples.

**34. After conclusion:** Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print to the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects in your research.

## Informal Guidelines of Research Paper Writing

**Key points to remember:**

- Submit all work in its final form.
- Write your paper in the form, which is presented in the guidelines using the template.
- Please note the criterion for grading the final paper by peer-reviewers.

**Final Points:**

A purpose of organizing a research paper is to let people to interpret your effort selectively. The journal requires the following sections, submitted in the order listed, each section to start on a new page.

The introduction will be compiled from reference matter and will reflect the design processes or outline of basis that direct you to make study. As you will carry out the process of study, the method and process section will be constructed as like that. The result segment will show related statistics in nearly sequential order and will direct the reviewers next to the similar intellectual paths throughout the data that you took to carry out your study. The discussion section will provide understanding of the data and projections as to the implication of the results. The use of good quality references all through the paper will give the effort trustworthiness by representing an alertness of prior workings.

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Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear

· Adhere to recommended page limits

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- Insertion a title at the foot of a page with the subsequent text on the next page
- Separating a table/chart or figure - impound each figure/table to a single page
- Submitting a manuscript with pages out of sequence

In every sections of your document

· Use standard writing style including articles ("a", "the," etc.)

· Keep on paying attention on the research topic of the paper

· Use paragraphs to split each significant point (excluding for the abstract)

· Align the primary line of each section

· Present your points in sound order

· Use present tense to report well accepted

· Use past tense to describe specific results

· Shun familiar wording, don't address the reviewer directly, and don't use slang, slang language, or superlatives

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**Title Page:**

Choose a revealing title. It should be short. It should not have non-standard acronyms or abbreviations. It should not exceed two printed lines. It should include the name(s) and address (es) of all authors.

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The summary should be two hundred words or less. It should briefly and clearly explain the key findings reported in the manuscript--must have precise statistics. It should not have abnormal acronyms or abbreviations. It should be logical in itself. Shun citing references at this point.

An abstract is a brief distinct paragraph summary of finished work or work in development. In a minute or less a reviewer can be taught the foundation behind the study, common approach to the problem, relevant results, and significant conclusions or new questions.

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- Fundamental goal
- To the point depiction of the research
- Consequences, including definite statistics - if the consequences are quantitative in nature, account quantitative data; results of any numerical analysis should be reported
- Significant conclusions or questions that track from the research(es)

Approach:

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- A conceptual should situate on its own, and not submit to any other part of the paper such as a form or table
- Center on shortening results - bound background information to a verdict or two, if completely necessary
- What you account in an conceptual must be regular with what you reported in the manuscript
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- Explain materials individually only if the study is so complex that it saves liberty this way.
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- Do not take in frequently found.
- If use of a definite type of tools.
- Materials may be reported in a part section or else they may be recognized along with your measures.

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- Report the method (not particulars of each process that engaged the same methodology)
- Describe the method entirely
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures
- Simplify - details how procedures were completed not how they were exclusively performed on a particular day.
- If well known procedures were used, account the procedure by name, possibly with reference, and that's all.

Approach:

- It is embarrassed or not possible to use vigorous voice when documenting methods with no using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result when script up the methods most authors use third person passive voice.
- Use standard style in this and in every other part of the paper - avoid familiar lists, and use full sentences.

What to keep away from

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings - save it for the argument.
- Leave out information that is immaterial to a third party.

**Results:**

The principle of a results segment is to present and demonstrate your conclusion. Create this part a entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Carry on to be to the point, by means of statistics and tables, if suitable, to present consequences most efficiently.You must obviously differentiate material that would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matter should not be submitted at all except requested by the instructor.

Content

- Sum up your conclusion in text and demonstrate them, if suitable, with figures and tables.
- In manuscript, explain each of your consequences, point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation an exacting study.
- Explain results of control experiments and comprise remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or in manuscript form.

What to stay away from

- Do not discuss or infer your outcome, report surroundings information, or try to explain anything.
- Not at all, take in raw data or intermediate calculations in a research manuscript.
- Do not present the similar data more than once.
- Manuscript should complement any figures or tables, not duplicate the identical information.
- Never confuse figures with tables - there is a difference.

Approach

- As forever, use past tense when you submit to your results, and put the whole thing in a reasonable order.
- Put figures and tables, appropriately numbered, in order at the end of the report
- If you desire, you may place your figures and tables properly within the text of your results part.

Figures and tables

- If you put figures and tables at the end of the details, make certain that they are visibly distinguished from any attach appendix materials, such as raw facts
- Despite of position, each figure must be numbered one after the other and complete with subtitle
- In spite of position, each table must be titled, numbered one after the other and complete with heading
- All figure and table must be adequately complete that it could situate on its own, divide from text

**Discussion:**

The Discussion is expected the trickiest segment to write and describe. A lot of papers submitted for journal are discarded based on problems with the Discussion. There is no head of state for how long a argument should be. Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implication of the study. The purpose here is to offer an understanding of your results and hold up for all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of result should be visibly described. Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved with prospect, and let it drop at that.

- Make a decision if each premise is supported, discarded, or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."
- Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work
- You may propose future guidelines, such as how the experiment might be personalized to accomplish a new idea.
- Give details all of your remarks as much as possible, focus on mechanisms.
- Make a decision if the tentative design sufficiently addressed the theory, and whether or not it was correctly restricted.
- Try to present substitute explanations if sensible alternatives be present.
- One research will not counter an overall question, so maintain the large picture in mind, where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

- When you refer to information, differentiate data generated by your own studies from available information
- Submit to work done by specific persons (including you) in past tense.
- Submit to generally acknowledged facts and main beliefs in present tense.

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| Topics | Grades | | |
|---|---|---|---|
| | **A-B** | **C-D** | **E-F** |
| *Abstract* | Clear and concise with appropriate content, Correct format. 200 words or below | Unclear summary and no specific data, Incorrect form<br><br>Above 200 words | No specific data with ambiguous information<br><br>Above 250 words |
| *Introduction* | Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited | Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter | Out of place depth and content, hazy format |
| *Methods and Procedures* | Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads | Difficult to comprehend with embarrassed text, too much explanation but completed | Incorrect and unorganized structure with hazy meaning |
| *Result* | Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake | Complete and embarrassed text, difficult to comprehend | Irregular format with wrong facts and figures |
| *Discussion* | Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited | Wordy, unclear conclusion, spurious | Conclusion is not cited, unorganized, difficult to comprehend |
| *References* | Complete and correct format, well organized | Beside the point, Incomplete | Wrong format and structuring |

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