The Relationship between Liquidity and Profitability of Listed Banks in Ghana

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Abstract

The study sought to find out the relationship between the liquidity and the profitability of banks listed on the Ghana Stock Exchange. Seven out of the nine listed banks were involved in the study. The study was descriptive in nature. It adopted the longitudinal time dimension, specifically, the panel method. Document analysis was the main research procedure adopted to collect secondary data for the study. The financial reports of the seven listed banks were studied and relevant liquidity and profitability ratios were computed. The trend in liquidity and profitability were determined by the use of time series analysis. The main liquidity ratio was regressed on the profitability ratio. It was found that for the period 2005-2010, both the liquidity and the profitability of the listed banks were declining. Again, it was also found that there was a very weak positive relationship between the liquidity and the profitability of the listed banks in Ghana.

Key words: Bank, Profitability, Liquidity, Assets, Ratios

1.0 Introduction

General Banking business involves the mobilization of funds from excess or surplus units of the economy and giving out to deficit units as loans and advances. This is called financial intermediation. The performance of these functions by banks opens them to several risks; prominent among these is liquidity risk. Liquidity risk is the risk of loss to a bank resulting from its inability to meet its needs for cash. The liquidity of a commercial bank is its ability to fund all contractual obligations as they fall due. These may include lending and investment commitments and deposit withdrawals and liability maturates, in the normal course of business (Amengor, 2010). In other words, bank liquidity refers to the ability to fund increases in assets and meet obligations as they fall due. In Ghana, Banking Act 2004 (Act 673) Section 31 urges banks to keep 9% of their deposits as primary reserves in an account with Bank of Ghana, which is used primarily to settle inter-bank indebtedness, and also as insurance for depositors.

Bank profitability is the ability of a bank to generate revenue in excess of cost, in relation to the bank's capital base. A sound and profitable banking sector is better able to withstand negative shocks and contribute to the stability of the financial system. (Athanasoglou, Brissimis and Delis, 2005). The majority of studies on bank profitability, such as Short (1979), Bourke (1989), Molyneux and Thornton (1992), Demirguc-Kunt and Huizinga (2000) and Goddard et al. (2004), used linear models to estimate the impact of various factors that may be important in explaining profits. Bank profitability is usually expressed as a function of internal and external factors. The internal determinants of bank profitability are also known as micro or bank-specific determinants. These can be broadly classified into two – financial statement variables and non-financial statements variables. The financial statement variables which determine bank profitability are: expense management, loan composition and bank credit, composition of bank deposits, market interest rates, bank earning and operating efficiency, changes in capital and liquidity management. The non-financial statement variables which determine bank profitability include number of bank branches, bank size and bank location. The external determinants are variables that are not related to bank management but reflect the economic and legal environment that affect the operation and performance of financial institutions (Athanasoglou, Brissimis and Delis, 2005). These factors include: financial regulation, competitive condition, concentration, market share, market growth and ownership.

There have been many researches on the determinants of bank profitability and almost all find liquidity to be one of the determinants of bank profitability. Examples include Bourke, (1989), Bashir, (2000), Karasulu, (2001), Guru, Staunton and Balashanmugam (2002), Staikouras, and Wood (2003) and Naceur, (2003). Meanwhile, there have been varying reports on the relationship between bank liquidity and profitability. Some argue, per their research findings, that banks holding more liquid assets benefit from a superior perception in funding markets, reducing their financing costs and increasing profitability. For example, Bourke (1989) finds some evidence of a positive relationship between liquid assets and bank profitability for 90 banks in Europe, North America and Australia from 1972-1981. On the other hand, other researchers argue that, holding liquid assets imposes an opportunity cost on the bank given their low return relative to other assets, thereby having a negative effect on profitability. For example, Molyneux and Thornton (1992) and Goddard, et al (2004) find evidence of a negative relationship between the two variables for European banks in the late 1980s and mid-1990s, respectively. According to Eichengreen and Gibson (2001), the fewer the funds tied up in liquid investments, the higher we might expect profitability to be. In effect, various authors have found varying relationships between the liquidity and profitability of banks in various countries. However, no such study has been carried out in Ghana, specifically to find out the relationship between the liquidity and profitability of banks in Ghana. This research therefore sought to find out the relationship existing between the liquidity and the profitability of banks in Ghana, with specific reference to those listed on the Ghana Stock Exchange. The purpose of the study was to find out the relationship between the liquidity and the profitability of banks listed on the Ghana Stock Exchange.

2.0 Methodology

2.1 Research Design

This study seeks to describe the relationship between the liquidity and the profitability of banks listed on the Ghana Stock Exchange. The study adopts the longitudinal time dimension, specifically the panel study type. Panel study is a powerful type of longitudinal research in which the researcher observes exactly the same people, group, or organisation across multiple time points (Neuman, 2007). In this study, particular banks listed on the Ghana Stock Exchange were examined in terms of their liquidity and profitability across time period of 2005-2010. The population of this study was made up of all commercial banks listed on the Ghana Stock Exchange. These included CAL Bank Limited, Ecobank Ghana Limited, Ecobank Transnational Incorporated, Ghana Commercial Bank Ltd., HFC Bank Ltd, SG-SSB Ltd., Standard Chartered Bank Ltd., Trust Bank Ltd. and UT Bank Limited. In this study, purposive sampling was used to select seven (7) out of the nine (9) banks listed on the Ghana Stock Exchange. The two banks excluded were Ecobank Transnational Incorporated and Trust Bank Ltd. These banks were excluded from the study because their financial statements were reported in currencies other than Ghana Cedis. Ecobank Transnational Incorporated reported in US Dollars while Trust Bank Ltd reported in Dalasi. Including the above two banks in the research would distort the analyses and comparison.

2.2 Instrumentation and Data Collection

Data was mainly collected from secondary sources. Data emanated from listed banks' financial reports, published and unpublished books, scholarly journals, business and financial news papers and other magazines and corporate journals. As the study needs historical financial data, which are from corporate reports, accessing publicly available data is assumed as the suitable method for the accuracy of the data. As public data is accessible to everyone; the study made use of the financial performance data which were of interest to the present research. Financial reports and other relevant information of the listed banks for the period 2005-2010 were retrieved from the internet, by search engines.

2.3 Analysis of Data

Quantitative analysis techniques were adopted for the study. These included profitability and liquidity ratios analyses, time series analysis, and regression and correlation analyses.

Absolute profit and liquid assets figures of the listed banks were analysed and compared, to see the trend within the period 2005-2010. Profitability and liquidity ratios of the banks were also analysed and compared to notice the trend in profitability and liquidity within the period 2005-2010. The profitability ratios of the listed banks (Y – axis) were then regressed against their liquidity ratios(X – axis) to determine the least square regression lines and equations. The correlation coefficients and coefficients of determination were identified to describe the strength of the relationship.

For the purpose of the regression, the profitability measure was Return on Asset (ROA) – Profit after Tax over Total Assets. The liquidity measure used was Temporary Investment Ratio (TIR) – Cash and Cash Equivalents over Total Assets. The least squared regression line equation was in the form: y = abx + ba; where y = profitability (dependent variable); x = liquidity (independent variable); a = the gradient of the regression line; b = the y intercept

3.0 Empirical Results

Figure 1: Listed Banks Included In the Study
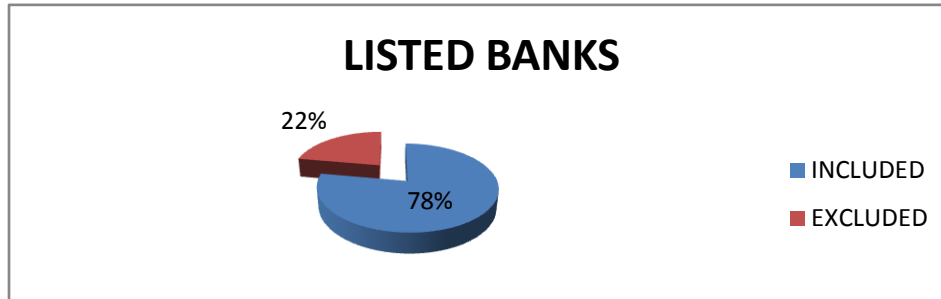
(Source: Authors Computation, 2011)

Figure 1 shows that the listed banks included in the study form 98% of the total number of banks listed on the Ghana Stock Exchange. This means the majority of the listed banks were included in the study.

Figure 2: Average Total Assets, Equity and Total Liabilities of Listed Banks
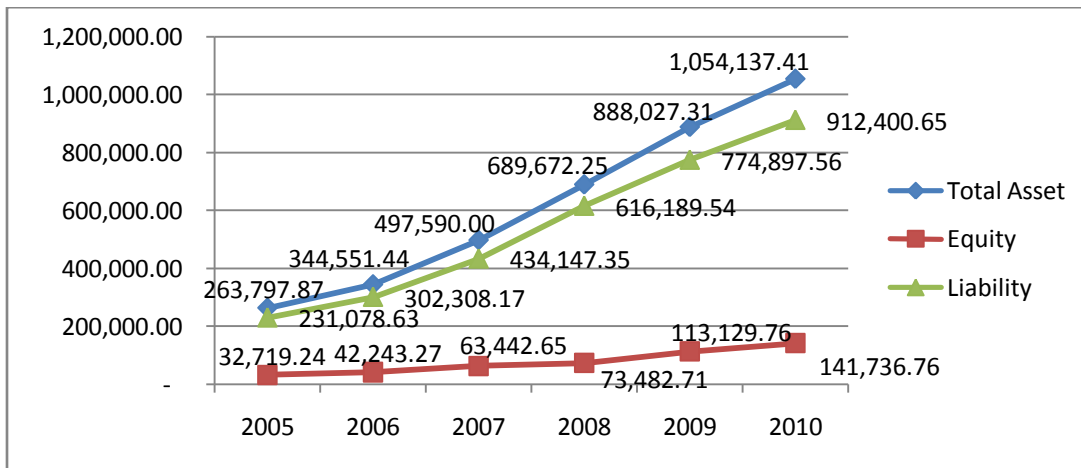
(Source: Authors Computation, 2011)

Figure 2 shows the Total Assets, Total Liabilities and Equity of the average listed bank. It clearly indicates that the Total Assets and the Total Liabilities of the average listed bank increased at the same pace. It meant that a very huge proportion of a (listed) bank's Total Assets was financed by external debt. This is in line with normal banking business because banking, to a greater extent, has to do with accepting customers' deposits, (liabilities) which in turn could be lent as loans and advances (assets) to individuals and corporate entities. Majority of a bank's assets are financed by liabilities.

Figure 3: Average Proportions of Total Liabilities and Equity
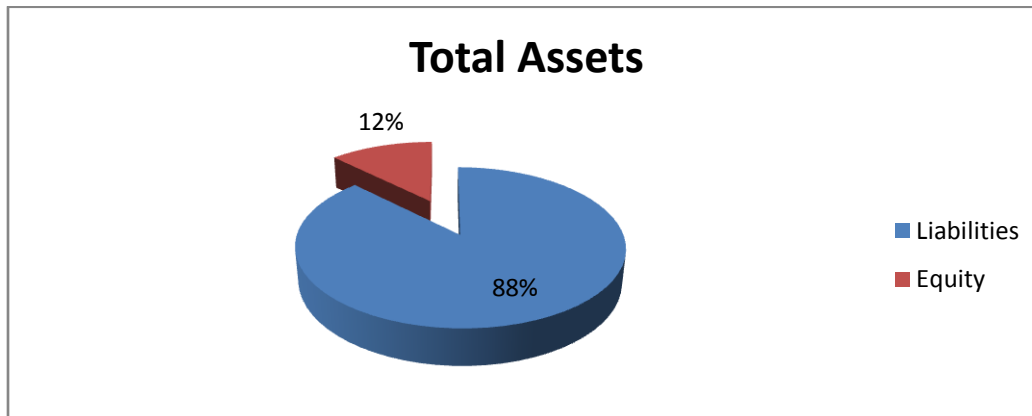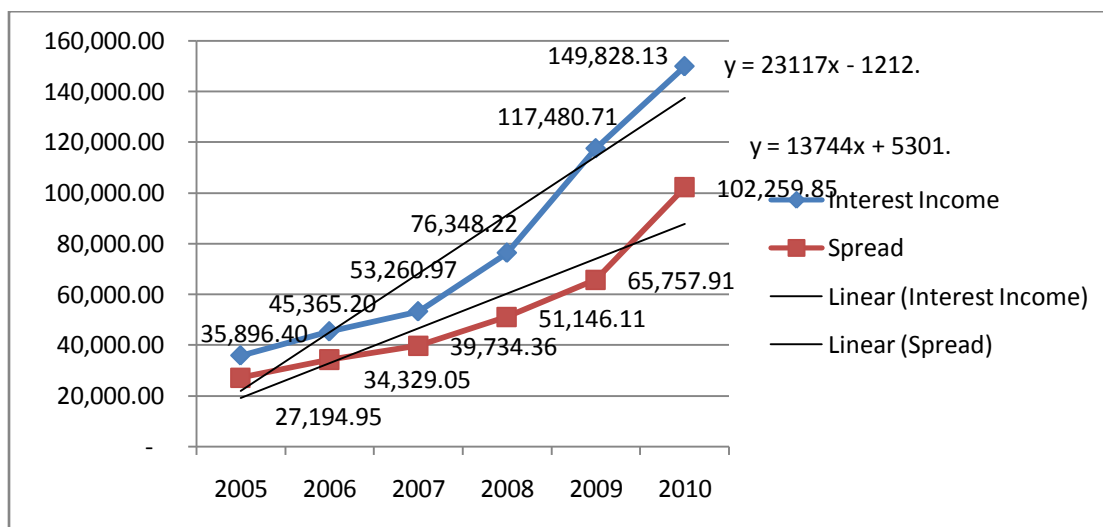

(Source: Authors Computation, 2011)

Figure 3 shows that about 88% of the Total assets of the average listed bank at a point in time are financed by Total Liabilities. The remaining 12% is financed by Equity.

### 3.1 Profitability trend of banks listed on the Ghana Stock Exchange

Figure 4:   Interest Income and Spread of the Average Listed Bank

(Source: Authors Computation, 2011)

Figure 4 Presupposes that there is a direct positive relationship between the Interest Income of the average listed bank and its Spread. Both have been increasing from the period 2005 up to 2010. Spread is the Excess of Interest Income over Interest Expense.
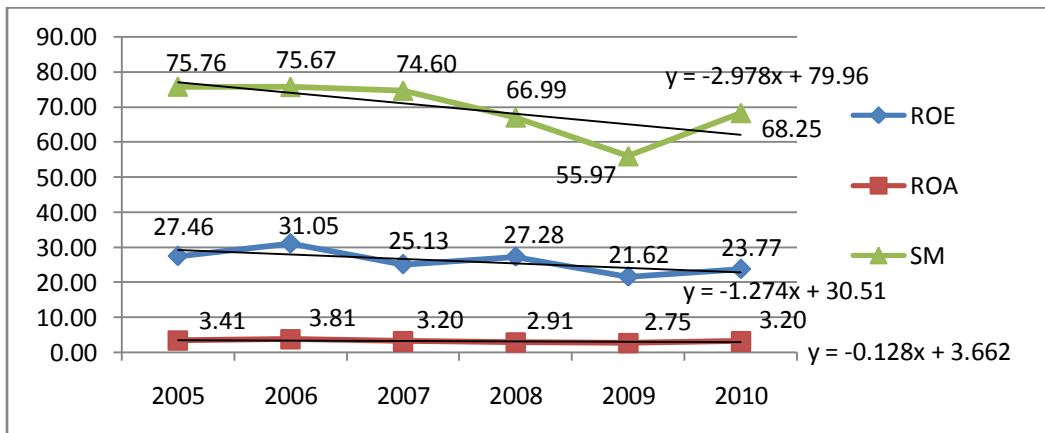
Figure 5: PBT and PAT of the Average Listed Bank
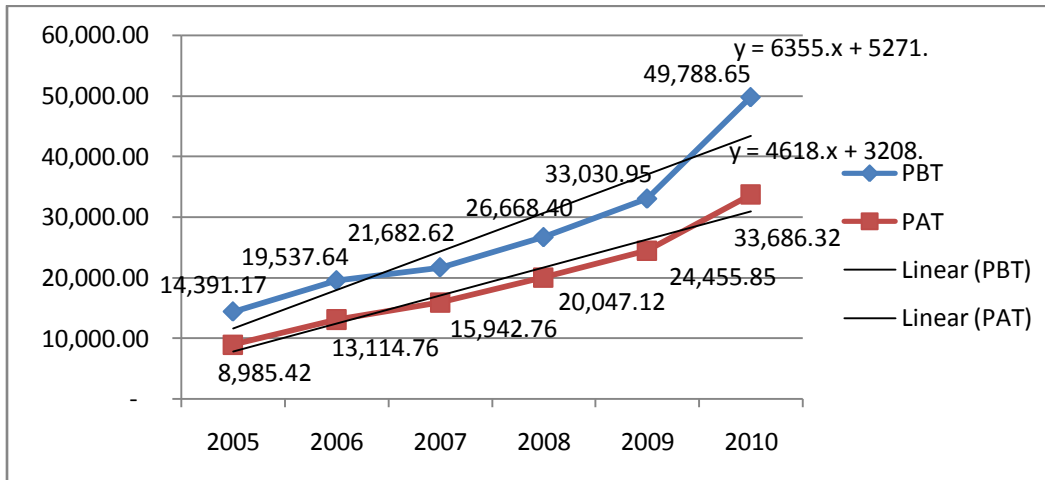
(Source: Authors Computation, 2011)

Figure 5 Shows that the trends in Profit before Tax and Profit after Tax of the average listed bank were almost the same. Both PBT and PAT of the average listed bank had been increasing within the period 2005-2010. This means that generally, profits of the listed banks were increasing within the period 2005 – 2010.

Figure 6: Profitability of the Average Listed Bank
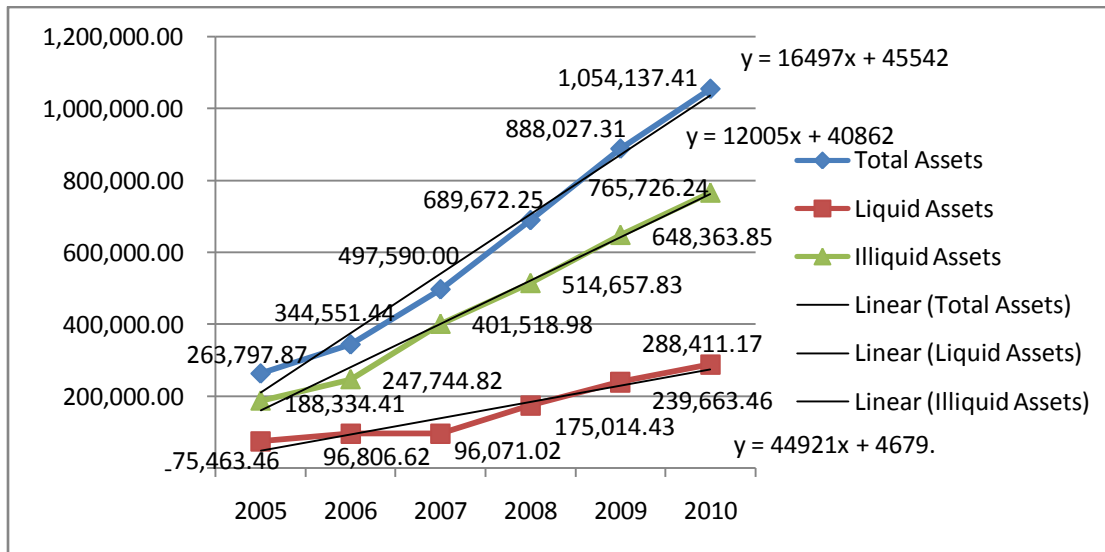

(Source: Authors Computation, 2011)

Figure 6 shows the Spread Margin (SM), Return on Assets (ROA) and Return on Equity (ROE). It indicates that the profitability of the average listed bank has been reducing generally. These are shown by the trend lines of Spread Margin, Return on Assets and Return on Equity. Spread Margin is the Spread over Interest Income times 100.

**3.2 Liquidity Trend of Banks Listed On the Ghana Stock Exchange**

Figure 7: Comparison of Liquid Assets, Illiquid Assets, with Total Assets

(Source: Authors Computation, 2011)

Figure 7 shows that there have been increases in all categories of assets. However, the increase in Total Assets results in higher increase in Illiquid Assets than in Liquid Assets. The Liquid Assets increased in 2006 and reduced by a margin in 2007. Thereafter, it increased continuously up to the year 2010. The equations of the trend lines show general increase in Liquid Assets over the years 2005-2010, though there was a fall in 2007.
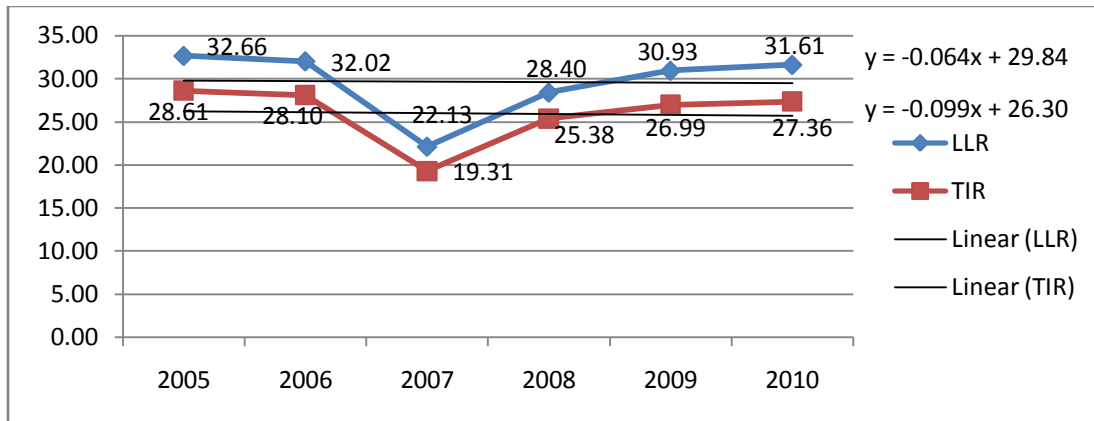
Figure 8: Percentages of Liquid Assets and Illiquid Assets
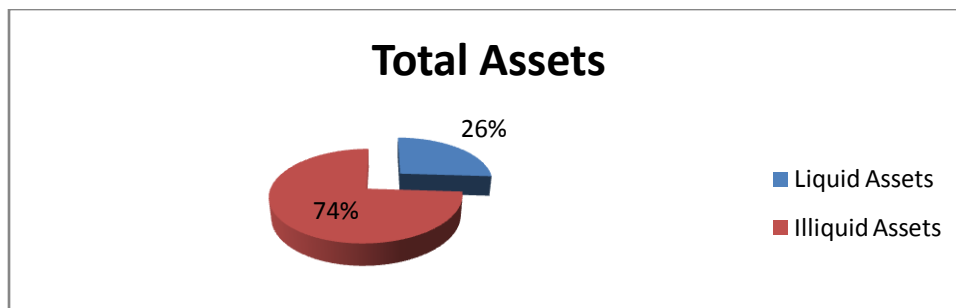
(Source: Authors Computation, 2011)

Figure 8 shows that the average listed bank holds about 26% of its Total Assets in the form of Liquid Assets, while the remaining 74% is locked up in the form of Illiquid Assets.

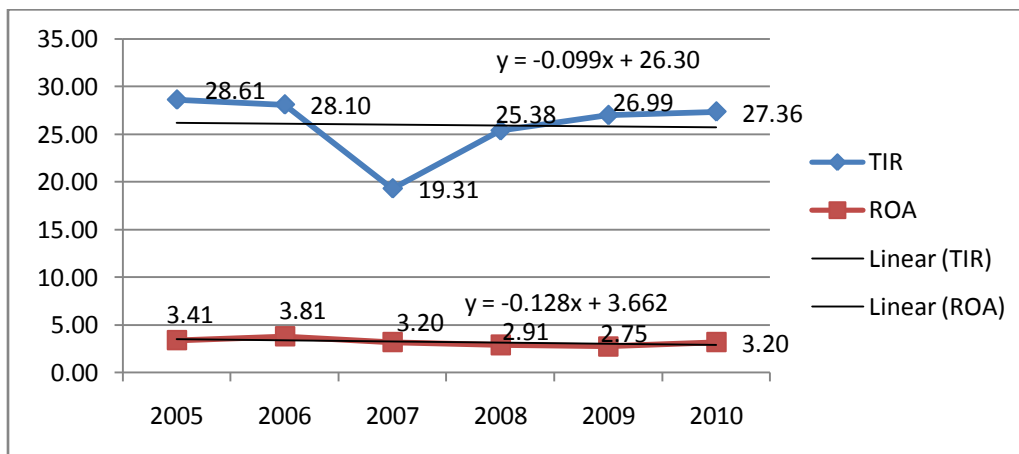**Figure 9: Liquidity of the average listed bank**

(Source: Authors Computation, 2011)

Figure 9 shows that both Temporary Investment Ratio (TIR) and Liquid Assets to Long-term Liabilities (LLR) of the average listed bank portray the same trend in liquidity. The trend lines show that there has been a general decreasing effect in liquidity within the period 2005-2010. Even though the average listed bank has been increasing its Liquid Assets, there has been a reduction in the general level of liquidity.
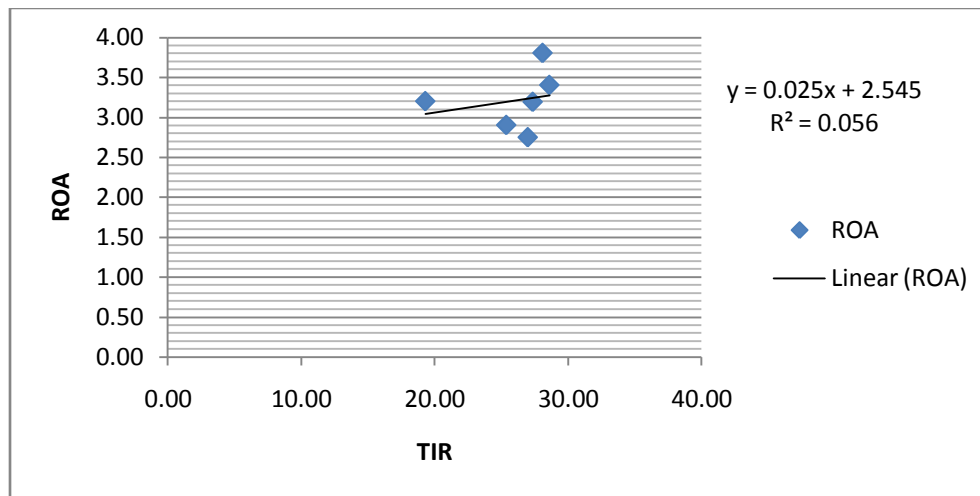
3.3 The relationship between the liquidity and the profitability of banks listed on the Ghana Stock Exchange

In order to find out the relationship which exists between the liquidity and the profitability of the banks listed on the Ghana stock exchange, their profitability (ROA) were regressed against their liquidity (TIR).

Figure 10: Liquidity and Profitability of the Average Listed Bank

(Source: Authors Computation, 2011)

Figure 11: Relationship between Liquidity and Profitability of the Average Listed Bank

(Source: Authors Computation, 2011)

Figure 10 and figure 11 show that the relationship between the liquidity and the profitability of the average listed bank is a weak positive relationship. The regression line of ROA on TIR is Y = -0.025X + 2.545. The coefficient of correlation (R) is 0.237 while the coefficient of determination (R2) is 0.056.

4.0 Discussion

The results show that within the period 2005-2010, the listed banks were increasing both liquid assets and illiquid assets. Despite the fact that the liquid asset holdings of the listed banks were increasing, their liquidity was decreasing in the period, 2005-2010. The listed banks had their lowest liquidity in 2007. The listed banks were increasing their absolute profit figures within the period 2005-2010. Despite this, their profitability was actually declining within the period 2005-2010. The research revealed a weak positive relationship between the liquidity and the profitability of the average listed bank in Ghana. Using Return on Assets (ROA) and Temporary Investment Ratios (TIR) as the main representatives of profitability and liquidity respectively,
The regression equation was Y = 0.025X + 2.545,
Where Y = Return on Asset (Profitability)
        X = Temporary Investment Ratio (Liquidity)
Correlation Coefficient (R) is 0.237
Coefficient of Determination (R^2) is 0.056
This means that only 5.6% of increase in profitability could be caused by increase in liquidity.

5.0 Conclusion

In conclusion, both the liquidity and the profitability levels of the listed banks were decreasing within the period 2005-2010. There was a weak positive relationship between the liquidity and the profitability of the listed banks. These findings support Bourke (1989) who found some evidence of a positive relationship between liquid assets and bank profitability for 90 banks in Europe, North America and Australia from 1972 to 1981. In view of the fact that liquidity has some amount of bearings on the profitability of a bank, it is important that banks manage their liquidity very well. When banks hold adequate liquid assets, their profitability would improve. Adequate liquidity helps the bank minimise liquidity risk and financial crises. The bank can absorb any possible unforeseen shock caused by unexpected need for decrease in liabilities or increase in assets side of the Statement of Financial Position. However, if liquid assets are held excessively, profitability could diminish. Liquid assets usually have no or little interest generating capacity. The opportunity cost of holding low-return assets would eventually outweigh the benefit of any increase in the bank's liquidity resiliency as perceived by funding markets.

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