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Measurement of bank profitability, risk and efficiency: The case of the Commercial Bank of Eritrea and Housing and Commerce Bank of Eritrea

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This study aims at measuring the profitability, risk, and efficiency of the banking sector in Eritrea. In this study, performance is measured in terms of profits generated, risk, and efficiency. We have employed the major financial ratio analysis to evaluate the performance of the Commercial Bank of Eritrea and the Housing and Commerce Bank of Eritrea. The results obtained indicate that both banks generally are not scoring significant improvement of their respective performances throughout the sample period (1997-2007), as it is indicated by most of the profitability, risk, and efficiency measures. It is obvious that a number of bank specific factors like size, ownership, capital structure, equity, age, and experience significantly affect bank's performance.

Key words: Bank profitability, risk, and efficiency, commercial banks, and housing and commerce bank, Eritrea.

INTRODUCTION

Increasingly, scholars acknowledge that supportive policy for financial sector development that enhances the performance of financial institutions is a key component of national development policy (Knight and Roth, 2003). Careful comparative analysis of the growth rates of different countries has produced convincing evidence that having a successful financial system contributes to growth—and is not merely a reflection of prosperity (Honohan and Beck, 2007). As a consequence, countries with victorious financial systems seem to have a lower incidence of poverty than others at the same level of

national income. The importance of a strong banking sector to a country's economic growth and development is well established in the literature (Beck and Hesse, 2006; Athanasoglou, 2006). Competent banking systems help countries to grow, partly by widening access to external finance, and channelling resources to the sectors that need them most. The major activity of banks that serve as intermediaries between customers who save and customers who borrow, is to collect deposits and disburse loans in the capacity of principals. In doing this, they assist in the acquisition of information about firms

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and households and also determine the allocation of credit in the economy. Indeed, any contractual arrangement that ensure the repayment of loans will encourage savers and lenders to lend and this influences the savings pattern. Therefore, by bridging the gap between savers and entrepreneurs, financial systems not only reduce the risks on both sides but also open up opportunities to both sides. They can reduce the barriers to entry for entrepreneurs, thereby allowing the economy at large to benefit in terms of increasing employment, improving the price and quality of services, and reducing the oppressive influence of established monopolies.

Given access to the necessary finance, investors can move to a higher level of productivity and output. Savers, too, can share in the returns on an expanded flow of investment. Housing, insurance, and pension arrangements can be lifted onto a new level. Additionally, in a well functioning economy, banks tend to act as quality controllers for capital seeking successful projects, ensuring higher returns and accelerating output growth.

At present, Eritrean banking sector is dominated by two major banks, namely Commercial Bank of Eritrea (CBER) and Housing and Commerce Bank of Eritrea (HCBE). After independence in 1991, the Eritrean banking sector inherited an obsolete monetary and financial system from the Ethiopian Marxist government. During 1974-1991, the military government of Ethiopia nationalized the banking sector and converted it into an appendage of the state administration. In this system, bankers were transferred into civil servants and bureaucrats, devoid of any sense of customer needs and expectations (Tsegai, 1999). It is this type of archaic organizational structure and banking behaviour that the Eritrean banking system is trying to leave behind. Currently, the Eritrean banking sector can be characterized as small, state-owned, undeveloped and providing rudimentary banking and other financial services to the economy (Tsegai, 1999).

This study aims at measuring the profitability, risk, and efficiency of the banking sector in Eritrea. Generally, the main objective of this study is to measure the profitability of the Commercial Bank of Eritrea (CBE) and the Housing and Commerce Bank of Eritrea (HCBE). Hence, we have focused our study on the Eritrean Commercial Banks in order to examine their financial performance.

LITERATURE REVIEW

A competitive banking system is required to ensure that banks are effective forces for financial intermediation channelling savings into investment fostering higher economic growth. When evaluating a bank's performance, several conventional analyses may be done on the basis of the information in its financial statements, such as profitability and risk analysis, and the efficiency of asset management (Gardner and Mills, 1994; Athanasoglou, 2006). Although different evaluators have different

motivations, they all have an interest in evaluating performance (Gardner and Mills, 1994) and use accounting and other data to assess the financial condition of an institution at a specific point in time.

Profitability measures the financial performance of a bank over a period of time, usually one year, as a result of the decisions made regarding the use of all resources in the institution (Knight and Roth, 2003). When evaluating a bank performance however, "due consideration needs to be given to not only its profitability but also its financial condition. Thus, the management of profitability and risks is closely related, because risk taking is a necessary condition of future profitability" (Bessis, 1998:16). Each bank makes trade-offs between the profitability level it is striving to achieve and the risks it is willing to take. Therefore, profitability measure, taken alone without a proper assessment to a bank's risk, can be misleading.

To judge a particular bank's earnings and financial security, analysts use several measures. Such measures are most useful when trends are examined over a period of time and compared with data from similar banks. When a bank's performance is compared with other banks of similar size and business profile, a wide deviation from the norm on any one indicator can signal possible problems or advantages. Before drawing any conclusions, however, it is always important to determine the reasons for the deviation.

In addition, bank profitability which is typically measured by the return on assets (ROA) and/or the return on equity (ROE) is usually expressed as a function of internal and external determinants (Athanasoglou, 2006). Internal determinants are factors that are mainly influenced by a bank's management decisions and policy objectives such as the level of liquidity, provisioning policy, capital adequacy, expense management and bank size (Athanasoglou, 2006). On the other hand, the external determinants, both industry-related and macro-economic, are variables that reflect the economic and legal environment where the banking institutions operate.

Furthermore, banking risks are usually defined by their adverse impact on profitability from several distinct sources of uncertainty (Knight and Roth, 2003). Some of the most important banking risks include liquidity risk, interest rate risk and solvency risk. Banks have to generate sufficient income from both the intermediation function (primarily interest margin) and from non-lending activities (that is, value added services and trading) to cover any adverse impact on profitability from the risks described above, and to maintain adequate capital to ensure the stability of the banking system and to satisfy the investment expectations of the providers of capital.

Finally, there are several ratios that measure efficiency, which is an important component of profitability. The ratios relate physical output to selected physical inputs and help evaluate whether or not firm assets are being used efficiently to generate income (Knight and Roth,

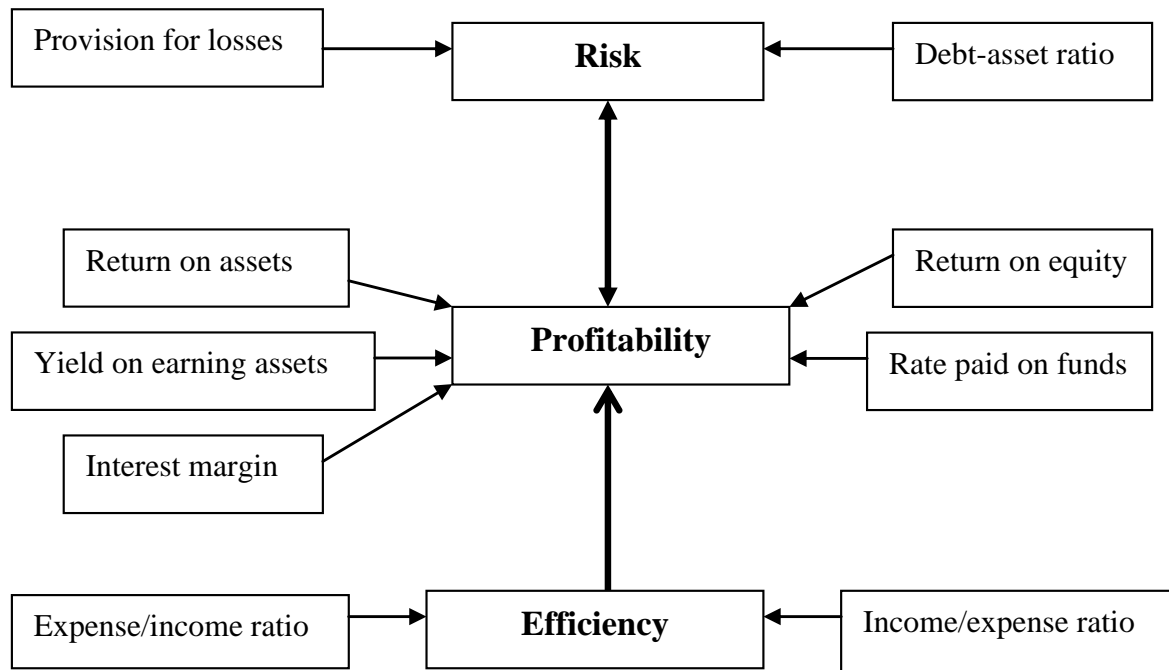


Figure 1. A framework for the measurement of bank profitability, risk and efficiency. Source: Developed by authors based on literature review.

2003). The efficiency measure most widely used in banks is the expense to income ratio. The expense to income ratio works with two important components namely Operating income and Operating Expense. Operating income is the income that comes from a bank's ongoing operations. Most of a bank's operating income is generated by interest on its assets, particularly loans (Knight and Roth, 2003). Interest income fluctuates with the level of interest rates, and so its percentage of operating income is highest when interest rates are at peak levels. Non-interest income is generated partly by service charges on deposit accounts, but the bulk of it comes from the off-balance-sheet activities, which generate fees or trading profits for the bank.

Operating expenses are the expenses incurred in conducting the bank's ongoing operations (Knight and Roth, 2003). An important component of a bank's operating expenses is the interest payments that it must make on its liabilities, particularly on its deposits. Just as interest income varies with the level of interest rates, so do interest expenses. Non-interest expenses include the costs of running a banking business: salaries for tellers and officers, rent on bank buildings, purchases of equipment such as desks, and servicing costs of equipment such as computers. The final item listed under operating expenses is provisions for loan losses. When a bank has a bad debt or anticipates that a loan might become a bad debt in the future, it can write up the loss as a current expense in its income statement under the "provision for loan losses" heading. Provisions for loan

losses are directly related to loan loss reserves (Honohan and Beck, 2007).

RESEARCH FRAMEWORK AND METHODOLOGY

Generally, bank-specific, industry related, and macroeconomic variables affect the profitability of the banking industry. A useful start for considering the best choice for designing a framework for measuring bank profitability, risk and efficiency would be to assess how far the model addresses the main objective of this study, that is, measure the profitability of the CBER and the HCBE. Therefore, based on discussions in the literature review, the framework below (Figure 1) is designed as an analytical tool because it shows the relationship among the measures of profit, risk and efficiency and the subcomponents of each measure.

Return on assets (ROA): A widespread measure of bank profitability is ROA. This is calculated by dividing a bank's net income by its total or average assets during the same period. A trend of rising ROA is generally positive provided it is not the result of excessive risk-taking.

Return on equity (ROE): Another measure of profitability, usually considered in conjunction with ROA, is ROE. A bank's ROE is calculated by dividing net income by average shareholders' equity. The ROE measure is the more relevant performance measure for shareholders. Banks that rely heavily on deposits and borrowings to support assets tend to have higher ROEs than those that depend on shareholder's funding.

Yield on earning assets (YEA): Since banks can achieve a target profit level in a variety of ways, the components affecting net income must be considered in evaluating the quality of earnings. The principal source of most banks' revenues is interest-earning

assets: loans, short-term money, market investments, lease financings, and investment securities. The YEA is calculated by dividing interest income on earning assets by the average value of these assets during the period. As some investments earn dividends, the interest income side of the ratio is usually calculated on a tax-equivalent basis to account for the added value of dividend income.

Rate paid on funds (RPF): Money is the 'raw material' that banks use to produce income. Thus, the cost of funds has an important influence on banks profits. A measure of this expense is the RPF. This is calculated by dividing the interest expense on the funding a bank uses to support earning assets by the total average of funds employed in that way. The RPF level varies with the general level of interest rates, and it is also affected by the make-up of the bank's liabilities.

Net interest margin (NIM): The difference between YEA and RPF is the net interest margin, which can also be calculated by dividing tax-equivalent net interest income by average earning assets. A widening net interest margin is a sign of successful management of assets and liabilities, while a narrowing net interest margin indicates a profit squeeze. A NIM of less than 3% is generally considered low, and more than 6% is very high. This range, however, should be used only as a rough guideline, because net interest margin can vary with the particular business mix of individual banks as well as the specific economic conditions of a country concerned.

Provision for loan losses: The provision for loan losses should be considered along with net interest margin when evaluating the quality of a bank's financial performance. The provision, which appears on the income statement, is a charge taken against earnings; the charge then goes into a cumulative reserve to cover possible loan losses. The level of provisions as a percentage of total loans reflects the success or failure of the bank's credit evaluation procedures and the riskiness inherent in the bank's loan portfolio. Over the short-term, risky loans may boost a bank's YEA and, hence, its net interest margin.

Non-interest income: The proportion of non-interest income to total income. In general, large banks tend to have a greater proportion of their total income attributable to non-interest bearing sources than do smaller banks. This reflects large banks' involvement in currency and bond trading, asset management services, corporate finance, and other fee based financial services.

Non-interest expenses: Non-interest expenses represent all expenses incurred in operations. A rising cost to income ratio (non-interest expenses relative to net operating revenues) can signal inefficient operations, but it might also reflect heavy technology spending or restructuring charges.

Data collection

Secondary accounting data is used to assess and measure the profitability of the two banks. In collecting secondary data, a sample of ten (10) bank branches in three (3) major cities of Eritrea were included in addition to the head quarters of these two major banks. Several discussions with bank managers, head departments and employees have been conducted regarding bank performance and the factors affecting it. Accounting data form the basis for planning future operations and for suggesting ways to improve the performance of organisations. According to Crum and Goldberg (1998, p.47), "Almost every action taken by the company management is noted in the accounting system. Each interaction with suppliers, customers, workers, and the government is recorded in the books of accounts." In assessing profitability of the two

banks, financial statements for 11 years (1997-2007) is used to extract financial data related to interest income, expenses, total assets, net income, total revenues, and other relevant information. These sample years are taken because the adverse effects following the three years (1998-2000) of border war with Ethiopia, the instability of the economy created ten years later, and the change to new currency in 2015 and their cumulative effects may not provide a true picture of bank performances.

RESULTS AND DISCUSSION

Profitability

Profitability has been operationalised using several financial measures such as the return on assets, return on equity, and yield on earning assets, rate paid on funds, and interest margin. Return on assets (ROA), often used as an overall index of profitability, is a financial ratio used to measure the relationship of profits and earnings and total assets. As shown in Table 1, the ROA for HCBE has shown a sharp decline between 1999 to 2001 with negative ROA indicating that the assets of the bank business could not generate sufficient income to be profitable. However, in 2002 it started to change showing a swift increase afterwards until the year 2007. This improvement of ROA indicates an increase in the efficient use of profits generated from the assets employed in the bank.

CBER's ROA ratio shows also similar trend with that of HCBE in which the bank faced a poor ROA because of the war situation in the years 1999, 2000 and 2002, and from 2003 to 2006 there was a speedy rise and a swift fall afterwards. When the banks are ranked based on this ratio, CBER is first with an average ROA of 1.16% while HCBE's ROA equals to 0.997% over the sample period. Return on equity reflects the banks management's ability to generate profits from using the owners' equity as one of the financial resources. In 1997 and 1998 the two banks scored a relatively high ROE, followed by a sharp plummet of the ratio with a negative score in some of the years and relatively low positive ratio in others until 2003 for HCBE and 2002 for CBER. In the subsequent years; however, they improved their ROE with both banks reaching their highest level in 2005 (58 and 85% for HCBE and CBER, respectively). Banks that rely heavily on deposits and borrowings to support assets tend to have higher ROEs than those that don't. In fact, an unusually high ROE versus ROA, which is the case for both banks, can indicate that the bank's equity base is too small and its ability to borrow further is limited. Nonetheless, at the end of sample years the rates started to fall in which CBER scored zero in ROE. On average, the ROE for HCBE is negative (-73%) and CBER attained a rate of 28%. Furthermore, as banks can achieve their target profit level in a variety of ways, the components affecting net income must be considered when evaluating the quality of earnings.

Thus, yield on earning assets ratio accounts the

Table 1. Profitability measures at CBER and HCBE (1997-2007).

Year	Return on assets (%)		Return on equity (%)		Yield on earning assets (%)		Rate paid on funds (%)		Interest margin (%)	
	CBER	HCBE	CBER	HCBE	CBER	HCBE	CBER	HCBE	CBER	HCBE
1997	1.49	1.33	49	46	2.34	4.48	1.78	3.33	0.56	1.16
1998	1.36	1.37	39	45	2.65	5.48	2.01	3.79	0.64	1.69
1999	-0.75	-0.18	-25	-8	3.30	4.37	2.23	3.89	1.07	0.48
2000	-0.01	-1.8	0	-1098	2.54	3.86	2.35	3.59	0.19	0.27
2001	0.75	-0.01	13	-16	2.27	2.29	2.42	2.93	-0.15	0.06
2002	-1.11	0.25	-37	18	2.91	2.75	2.30	2.52	0.61	0.23
2003	1.17	0.76	38	30	2.26	2.58	2.30	2.35	-0.04	0.22
2004	2.29	1.57	72	48	2.11	3.28	2.25	2.38	-0.13	0.90
2005	3.85	2.94	85	58	2.60	3.90	1.80	2.00	0.81	1.90
2006	3.75	2.43	75	38	2.69	4.33	1.80	2.02	0.89	2.32
2007	0.0029	2.31	0	35	2.25	3.87	1.77	1.75	0.48	2.12
Average	1.163	0.997	28	-73	2.54	3.81	2.09	2.78	0.448	1.032

Source: Calculated from financial statements of the banks (1997-2007). Note: For all the years Net Interest Margin is calculated as: Net interest income divided by total assets. (It can also be calculated as: Net interest income divided by average interest earning assets)

interest income relative to the total or average of the assets during the same period. The yield on earning assets of both banks fluctuates over the sample period mostly showing minor differences along the years. In comparison, the average YEA is 3.81 and 2.54% for HCBE's and CBER respectively, over the period.

In addition, rate paid on funds ratio shows the significance of the cost of funds in affecting the banks profits. This ratio swings between the lowest level of 1.75% in 2007 and highest of 3.89% in 1999 for HCBE, whereas for CBER, the rate changes from a highest of 2.42% in 2001 to the lowest of 1.77% in 2007. As a result, on average HCBE scores 2.78% of RPF while CBER gets 2.09%. On the basis of this ratio, both banks are expected to have insignificant difference in their cost of funds and make-up of the bank's liabilities.

Finally, if the bank is able to raise funds with liabilities that have low interest costs and acquire assets with high interest income, the net interest margin will be high indicating that the bank is likely to be highly profitable. If the interest cost of its liabilities rises relative to the interest earned on its assets, the net interest margin will fall. Consequently, bank's profitability will suffer. The net interest margin of both banks fluctuates over the sample period showing negative figures for CBER in 2001, 2003 and 2004. When the two banks are compared, the average net interest margin is 1.03 and 0.45% for HCBE's and CBER respectively over the period.

Risk

Provision for loan losses and debt-to-asset are the two ratios employed to measure bank's risk. The Provision for loan losses is an amount reserved by a bank to cover the

possible loan losses. Therefore, its level is highly dependent on the bank's effectiveness in the evaluation of credit proposal. As can be seen from Table 2, this ratio is shown to be very low and zero for five years for HCBE, whereas for CBER the rate fluctuates from year to year showing a highest rate of 24.21% in 2002. Based on the results, the two banks are expected to have a significant difference in their loan portfolios, signifying that the level of provisions as a percentage of total loans reflects risky loans.

The debt-to-asset ratio indicates the financial strength of a bank to pay its debtors. Generally both banks have a high debt-to-asset ratio, indicating the banks' involvement in more risky businesses. The HCBE's debt-to-asset ratio shows a steady increase from 1999 to 2001 followed by a stable fall afterwards to the end of the sample period, whereas for CBER, the rate fluctuates between a highest rate of 96.99% and lowest of 94.73% showing a minor rate of change during the sample period.

Efficiency

Bank efficiency has been measured using non-interest income, expense to income, and expense ratios. Non-interest income indicates the proportion of total income accountable to non-interest sources of income. Regarding HCBE, a higher ratio of non-interest income is recorded between 2003 to 2005 with a rate of 25.95%, 24.24%, and 26.86% respectively, whereas during the other years of the sample period it ranges from the lowest of 6.95% to the highest of 15.16% (see Table 3 below). For CBER, significant portion of the bank's total income is attributable to its non-interest income in most of the sample period out of which four years show a rate of more

Table 2. Measurability of risk at CBER and HCBE (1997-2007).

Year	Provision for loan losses (%)		Debt-to-asset ratio (%)	
	CBER	HCBE	CBER	HCBE
1997	2.74	0.00	96.94	97.09
1998	2.94	0.25	96.53	96.93
1999	12.69	0.58	96.99	97.85
2000	6.56	4.51	96.13	99.84
2001	6.65	0.19	94.46	99.91
2002	24.21	0.00	96.99	98.63
2003	4.27	0.00	96.90	97.46
2004	18.27	0.00	96.83	96.75
2005	5.49	0.00	95.48	94.98
2006	0.00	0.03	95.08	93.67
2007	0.04	0.25	94.73	93.32
Average	7.62	0.53	96.10	96.95

Source: Calculated from financial statements of the banks (1997-2007).

Table 3. Measurability of efficiency at CBER and HCBE (1997-2007).

Year	Non-interest income ratio (%)		Expense-income ratio (%)		Non-interest expense ratio (%)	
	CBER	HCBE	CBER	HCBE	CBER	HCBE
1997	43.75	15.06	64.21	74.88	4.97	11.82
1998	39.37	8.76	69.23	77.13	4.24	10.91
1999	30.07	10.24	116.00	103.67	4.10	19.22
2000	28.61	6.95	100.35	143.48	4.39	16.52
2001	48.62	14.22	83.07	100.42	4.61	14.37
2002	34.73	13.89	124.82	92.20	3.47	13.34
2003	48.64	25.95	68.60	78.03	3.84	10.38
2004	69.32	24.24	65.69	63.65	2.21	8.68
2005	63.69	26.86	38.22	44.93	4.69	7.39
2006	53.60	9.75	35.44	49.46	4.40	7.09
2007	55.06	13.57	99.94	48.37	3.58	6.46
Average	46.90	15.41	64.21	74.88	4.05	11.47

Source: Calculated from financial statements of the banks (1997-2007).

HCBE's ratio shows a relative efficiency in the year 2004 than 50% (2004-2007). This reflects the banks' involvement in other activities which may include currency and bond trading, asset management services, corporate finance, and other fee based financial services applicable to its services.

Expense to income ratio assesses the efficiency of the bank in utilizing its assets to generate income. The HCBE's ratio shows a relative efficiency in the year 1997 and 1998, showing a speedy decline from 1999 until 2002. Starting 2003 to the end of the sample period, the expense-to-income ratio shows a quick drop indicating a rise in the bank's efficiency in utilizing its assets. The trend of this ratio for CBER is also almost similar to that of HCBE in that it shows a relative lower expense to

income ratio in 1997 and 1998 followed by a swift increase afterwards until 2002 only interrupted by 17.3% drop in between 2000 and 2001. Again similar to the case of HCBE, the expense-to-income ratio for CBER started to decrease afterwards till the end of 2006. This lower value of expense to income ratio during the last 4 years for both banks indicates that a smaller proportion of operating income is needed to counterbalance all operating expenses of the banks. However, the ratio for CBER in the last year of the sample period swiftly increased by 64.5% indicating a decline in efficiency.

Furthermore, the non-interest expenses ratio indicates the relationship between all expenses incurred in the banks other operations and the operating income. The with a persistent decline to the end of the sample period,

Table 4. Comparison of HCBE and CBER and some East Europe Countries.

Characteristics	HCBE (%)	CBER (%)	Albania (%)	Boznia-Herzegovina (%)	Bulgaria (%)	Croatia (%)	FYROM (%)	Romania (%)
ROA	1.0	1.16	1.90	1.05	1.46	0.95	2.05	1.02
ROE	-73	28	23	7.35	9.71	9.17	6.62	9.30
Debt/Assets	97	96	22	47.25	38.1	53	40	36
PLL	0.53	7.62	2.25	4.57	3.37	2.88	6.22	3.27

2007. From 1997 to 2003; however, it showed a relatively high rate indicating inefficiency in its operations. The trend of this ratio for CBER is relatively stable throughout the sample period shifting from one year to the other only with minor differences along the years. In most of the years the rate falls between the highest level of 4.97% and lowest 3.47%. However, in 2004, it showed a rate of only 2.21% indicating an improved in the banks efficiency operations. It appears that CBER is relatively more efficient with an average ratio of 4.05% compared to HCBE's 11.47%.

Conclusion

Here, we summarize the most commonly used profitability, risk and efficiency measures such as ROA, ROE, NIM, debt-equity, and expense-income ratio (Appendix 1). Both banks experienced a relative increase of ROA in 1997 and 1998. However, this was followed by a quick decline in profitability indicated by negative ROA for both banks. When this low performance of the banks during that period is compared with some international banking sectors that scored very low ROA due to the economic-crisis of the period that badly hit their economy, for example, Hong Kong (ROA of 39% and 77% in 1999 and 2000 respectively), we still find the performance of CBER and HCBE to be relatively very low on the basis of that ratio. Although such comparison cannot be conclusive because it does not consider all the country specific factors that affect this specific ratio and other bank performance measures, it gives a general indication on how the banks perform in competently generating profits from the assets employed in their businesses. The following table (Table 4) shows comparison of some of the performance measures with those of countries in South Easterns Europe (observation for these countries is from 1998 – 2002).

Between 2003 and 2007, both banks scored a positive ROA. An average ROA of HCBE was 0.997%, whereas the average ROA of CBER for the same periods was 1.163%, which does not imply significant difference of performance between the two banks. Thus, according to the results we obtained, ROA of both banks slightly increased during the last three years (2005-2007). It should, however, be noted that there was no significant improvement through most of the years.

Many decision makers prefer ROE as it answers the question of "what's in it for the owners?" With the exception of some years in which both banks scored negative ROE, the banks' ROE score is higher than their ROA profitability measure (exclusive of that of CBER for 2007). This high ROE, but a low ROA are results of employing a high level of financial leverage. This is supported by the increased debt-to-asset ratio in the sample period. That is, both banks show generally a high debt-to-asset ratio, indicating their involvement in more risky business.

It may not be inherently wrong to do business with a high debt, provided the operation is very efficient and can service the debt. Banks may have efficient operations with a high return on assets; and it may only be that there is little income left to provide for other expenses by the time they make their interest and principal payments. Thus, a high debt/ asset ratio is not necessarily bad in this situation.

Having a debt/asset ratio of zero is not necessarily a desirable goal either. Financial theory dictates that we should be earning a higher return on our equity than our debt. The theory goes that as debt payments get first claim on profits, and equity is a residual return, equity needs a higher return to compensate for this risk. Assuming that the operation is efficient and has a high return on assets, then it is desirable to assume an acceptable level of debt in order to "lever up" return on equity.

However, one thing should always be clear; a high debt/asset level involves a higher degree of financial risk. Ultimately, such banks face major financial challenges, particularly in times of economic difficulty. Thus, it is clear that higher debt levels should be accompanied by a higher return on assets to service the debt.

In considering the efficiency measure of the banks, generally, the lower the expense to income ratio the better it is. However, the expense-income ratio for both banks is very high and this will result in increasingly less cash from every Nakfa of income generated left to cover debt servicing, reinvestment, and withdrawals. It should also be recognized that banks that have low debt levels can get by with a higher expense –income ratio. Their mix of debt servicing, reinvestment, and withdrawals can lean more heavily towards withdrawals without sacrificing debt servicing or reinvestment. Conversely, banks that are highly leveraged will require a lower expense–income

to be able to service the debt and maintain an adequate level of investment. This states an obvious truth, to take on more debt requires greater efficiency.

Another major consideration in the analysis relates to the operating strategy of the bank. If the bank has a low cost-of-funds strategy, or if the bank does not require high levels of reinvestment, then that bank can operate at a higher level of expense –income and still be as profitable as others.

Generally, the present study used the major financial ratio analysis to evaluate the performance of CBER and HCBE. The results obtained indicate that both banks generally are not scoring significant improvement of their respective performances through the sample period (1997-2007), as it is indicated by most of the profitability, risk and efficiency measures. However, concerning the cause of this poor performance, nothing is said in the study and this requires further research. It is obvious that a number of bank specific factors like size, ownership, capital structure, equity, age, and experience significantly affect bank's performance. Thus, inter-bank comparison was not conducted and is beyond the scope of this study as both banks are different in terms of the factors mentioned earlier. Hence, an extensive inter-bank analysis of performance is also worth conducting.

IMPLICATIONS OF THE STUDY

The main contribution of the present study is the formulation of a comprehensive framework for studying profitability, risk, and efficiency measures in a banking sector in a developing-country context. To-date, much research on profitability in a banking sector in Africa in general, and in Eritrea in particular is scarce. Accordingly, this study attempts to start a data-base of research on profitability in the banking sectors on which more enriching studies are expected to be built.

We would like to state that, like most researches, this study also has several limitations and thus readers must be cautious in making generalisations. First, our study was conducted for two Eritrean banks engaged in the commercial and housing banking services. Thus, the findings may not be generalizable to other bank and financial institution in Eritrea, nor be they to the banking sector in other countries.

Conflict of Interests

The authors have not declared any conflict of interest.

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Appendix 1. Performance measures of both banks 1997-2007.

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Average
Profitability (%)												
ROA-HCBE	1.33	1.37	-1.8	-1.8	-.01	.25	.76	1.57	2.94	2.43	2.31%	.997
CBER	1.49	1.36	-.75	-.01	.75	-1.11	1.17	2.29	3.85	3.75	.0029%	1.163
ROE-HCBE	46	45	-8	-1098	-16	18	30	48	58	38	35%	-73
CBER	49	39	-25	0	13	-37	38	72	85	75	0%	28
NIM-HCBE	1.16	1.69	.48	.27	.06	.23	.22	.9	1.9	2.32	2.12%	1.032
CBER	.56	.64	1.07	.19	-.15	.61	-.04	-.13	.81	.89	.48%	.448
Risk (%)												
D/A-HCBE	97.09	96.93	97.85	99.84	99.91	98.63	97.46	96.75	94.98	93.67	93.32%	96.95
CBER	96.94	96.53	96.99	96.13	94.46	96.99	96.90	96.83	95.48	95.08	94.73%	96.10
Efficiency (%)												
E/I-HCBE	74.88	77.13	103.67	143.48	100.42	92.20	78.03	63.65	44.93	49.46	48.37%	74.88
CBER	64.21	69.23	116.00	100.35	83.07	124.82	68.60	65.69	38.22	35.44	99.94%	64.21