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ARTICLES

Full Length Research Paper

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

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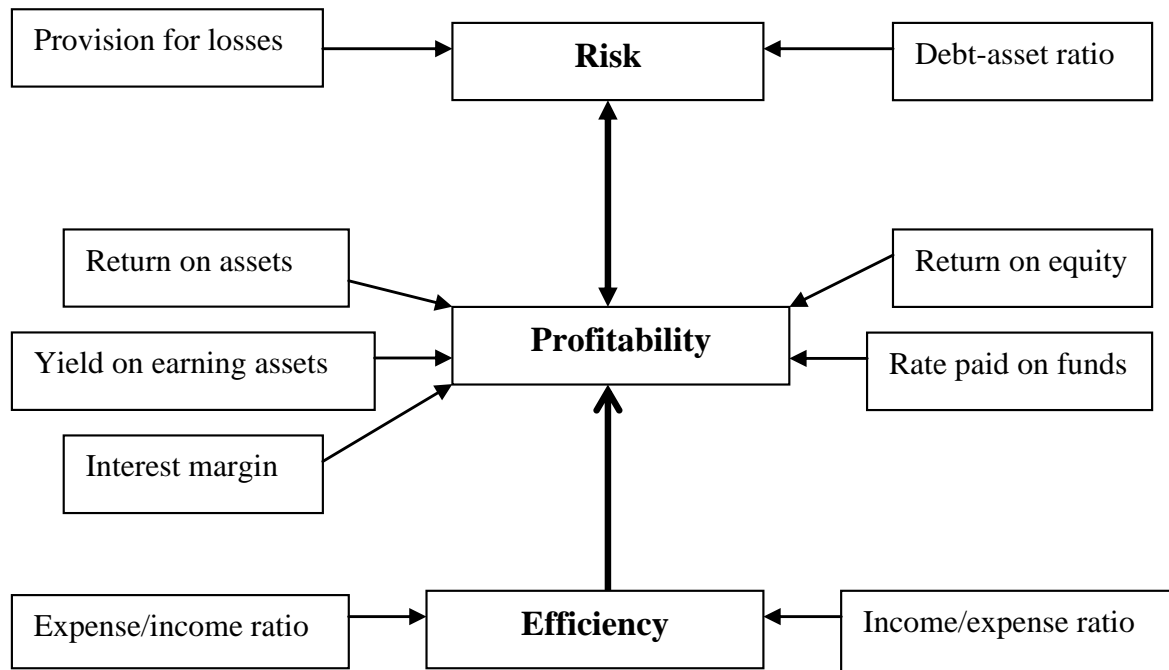
Figure 1. A framework for the measurement of bank profitability, risk and efficiency. Source: Developed by authors based on literature review.

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 loses 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 Easters 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.

REFERENCES

Athanasoglou P (2006). Determinants of Banking Profitability in the South Eastern European Region," Bank of Greece Working Paper 06/47.

Beck T, Hesse H (2006). Foreign Bank Entry, Market Structure and Bank Efficiency in Uganda," World Bank Policy Research Working Paper 4027, October.

Beck T, Patrick H (2007). Access to Financial Services: Measurement, Impact and Policies." World Bank Research Observer 24:119-145.

Bessis J (1998). Risk Management in Banking, Wiley, New York.

Crum R, Goldberg I (1998). Restructuring and Managing the Enterprise in Transition, EDI Learning Resources Series, World Bank Washington, DC.

Gardner MJ, Mills DL (1994). Managing Financial Institutions: An Asset Liability Approach, The Dryden Press, Orlando.

Gurley G, Shaw S (1960). Money in a theory of fiancé, the brooking Institution, Washington DC.

Knight SL (2003). Best institutional arrangements for worker equity-share schemes in South Africa. Agrekon 42(3):228-251.

Tsegai A (1999). Challenges and tasks of financial intermediaries in Eritrea, paper presented at a National workshop on Development of Finance, Banking and Insurance, Teraemni, Eritrea.

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	-.18	-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**

Full Length Research Paper

The effect of foreign portfolio equity and exchange rate risk on stock returns of commercial banks in Kenya

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Reversals of foreign portfolio equity due to a shift in investor risk appetite may have a drastic impact on the value of shares of commercial banks hence the effect on stock returns. Uncertainties in the flow of foreign portfolio investments (FPI) result in unpredictable behaviour of stock returns in Kenya's economy and also at the firm level. The objective of this study was to find out the effect of foreign portfolio equity and exchange rate risk on stock returns of listed commercial banks in Kenya. The target population of the study was 11 commercial banks listed on the Nairobi Securities Exchange. The study used purposive sampling technique and concentrated on 10 commercial banks. This study used a causal research design and adopted a panel data regression using the Ordinary Least Squares (OLS) method where the data included time series and cross-sectional. Hausman test was carried out and findings indicated that random effects model was preferable for this study. Results from panel estimation showed that exchange rate risk affect stock returns of listed financial institutions in Kenya. The study recommended that policies that would attract foreign portfolio investment should be pursued by commercial banks in order to enhance stock returns.

Key words: Foreign portfolio equity, stock returns, exchange rate risk, commercial banks, Nairobi securities exchange, Kenya.

INTRODUCTION

Foreign portfolio investment (FPI) has become an increasingly significant part of the world economy and an important source of funds to support investment not only in developed but also developing countries. Foreign investors enter emerging markets for diversification and also to maximize returns. Financial market theory suggests that, over the long run, higher returns should compensate for the higher risks of emerging market (Tokat, 2004).

In Kenya, participation of foreign investors in the Nairobi Securities Exchange (NSE) can be traced back to 1954

when trade in shares was confined to the resident European community. The presence and dominance of foreign investors in the market declined after independence, however, protection of foreign investor interest was still given prominence and thus the Foreign Investment Protection Act (1964) was passed. The Act focused on foreign direct investors and allowed for repatriation of earnings and capital by foreign firms (Ngugi, 2003).

Foreign portfolio investment increases the liquidity of commercial banks and domestic capital markets, and can

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help develop market efficiency as well. As markets become more liquid, as they become deeper and broader, a wider range of investments can be financed. New enterprises, for example, have a greater chance of receiving start-up financing. Savers have more opportunity to invest with the assurance that they will be able to manage their portfolio, or sell their financial securities quickly if they need access to their savings. In this way, liquid markets can also make longer-term investment more attractive (APEC, 2000).

According to Bekaert et al. (2002), foreign portfolio investments (FPI) are reversible and tend to leave as fast as they come in an economy. Due to this, portfolio flows may have a drastic impact on Kenya's economy and on the value of shares of companies in which foreign investors offload their holdings, hence the stability of the market in general.

An increase in FPI leads to changes in information flow, efficiency and liquidity thereby affecting stock market returns. Volatility or rapid reversal of foreign portfolio flow increases risk and uncertainty in the stock market, leading to high macroeconomic instability. Thus, it affects the value of the firm by pushing stock prices up when they come in, but down when they offload. FPI also affects the net foreign assets in form of foreign currency, hence undermining competitiveness. Sudden and large inflows of FPI lead to exchange rate appreciation and widening current account deficits.

During the past three decades, the relationship between firms' stock returns and foreign exchange rates have been empirically analysed. Theory explained that a change in the exchange rates would affect a firm's foreign operation and overall profits which would, in turn, affect its stock prices, depending on the multinational characteristics of the firm. Conversely, a general downward movement of the stock market will motivate investors to seek for better returns elsewhere. This decreases the demand for money, pushing interest rates down, causing further outflow of funds and hence depreciating the currency. While the theoretical explanation was clear, empirical evidence was mixed.

METHODOLOGY

Research design

The design of the study was causal as it seeks to test for the existence of cause-and-effect relationships among variables (Cooper and Schindler, 2004). This design is suitable in studies which aim to determine whether a group of variables together influence a given dependant variable (Saunders et al., 2009). The design was suitable for this study as it aimed to establish the effect of foreign portfolio investments on stock returns.

Target population

The study focused on a population of 11 listed commercial banks in Kenya. The 11 listed commercial banks trade the securities in NSE.

Data collection

The study used panel financial data over the seven year period (January, 2008 to December, 2014) to find the effect of foreign portfolio equity (sales, purchases and turnover) and exchange rate risk on stock returns of listed commercial banks in Kenya. Regression coefficients were interpreted using the E-views software output. To ensure that enough degrees of freedom in the models to be estimated are available, monthly data covering the entire study period was collected resulting to 7392 observations. The method of data collection was secondary research, which essentially involved reviewing data sources that were collected for some other purpose than the study at hand. Thus, all the relevant data for this study were available in secondary form. The main sources of data were: Central Bank of Kenya, Capital markets Authority, Nairobi Securities Exchanges and Kenya Bureaus of Statistics.

Measurement of variables

Stock returns (SR)

Stock return is defined as the increase in the value of an investment over a period of time, expressed as a percentage of the value of the investment at the start of the period. Stock return in this study was computed as:

$$SR_{it} = \left[\frac{P_{it} - P_{i(t-1)}}{P_{i(t-1)}} \right] \times 100$$

It is measured by changes in share prices.

Exchange rate risk (ERR)

ERR is measured as the change in monthly exchange rate to the US dollar. Changes in exchange rate create uncertainty in the market about the stability of macroeconomic policy. Exchange rate risk reduces confidence in the market and hence affect share prices either because of uncertain future returns or because investors will be pulling out of the market. Change in exchange rate is expected to be negatively related to stock returns.

Data analysis

This study adopted a panel data regression using the Ordinary Least Squares (OLS) method where the data included time series and cross-sectional data that was pooled into a panel data set and estimated using panel data regression.

Justification for use of panel data approach

Panel data is also called pooled or combined data since there are elements of both time series and cross section data. According to Damodar and Sangeetha (2007), panel data has a number of advantages. First, since panel data relate to individuals e.g. firms over time, there is bound to be heterogeneity in these units. The technique of panel data estimation takes such heterogeneity explicitly into account by allowing for individual specific variables. Secondly, by combining time series of cross section observations, panel data give more informative data, more variability, less collinearity among variables, more degrees of freedom and more efficiency. Thirdly, by making data available for several units, panel data can minimise the bias that might result if the study aggregate individuals into broad aggregates. These advantages enrich panel data empirical analysis in ways that may not be possible if only cross-section or time series data is used, hence the use of panel data in this study.

Descriptive Statistics

Descriptive statistics was essential in determining the statistical properties of the model so as to select the proper functional form of the estimable model. Therefore the study sought to determine the spread of the data which included calculating for the mean, standard deviation, standard errors, maximum and minimum values of the variables overtime. This also involved finding correlation matrix so as to check which variables were highly correlated so as to avoid the problem of multi-collinearity which is a common problem in time series data.

Model specification, estimation and rationale of variables

The study hypotheses were measured using one panel data regression equation. The equation had Stock returns (SR) as the dependent variable and Foreign portfolio equity sales (FPES), Foreign portfolio equity purchases (FPEP), Foreign portfolio equity turnover (FPET) and Exchange rate risk (ERR) as independent variables. Treasury bill rate (TBIL), Inflation rate (INFL) and Market capitalization (MCAP) were the control/intervening variables in the study. The regression analysis used E-views 7 data analysis software. The hypotheses were tested using the following regression model;

$$SR_{it} = \alpha + \beta_1 FPES_{it} + \beta_2 FPEP_{it} + \beta_3 FPET_{it} + \beta_4 ERR_{it} + \beta_5 TBILit + \beta_6 INFL_{it} + \beta_7 MCAP_{it} + \mu_{it}$$

Where;
SR_{it} = Stock returns at time t
$FPES_{it}$ = Foreign portfolio equity sales at time t
$FPEP_{it}$ = Foreign portfolio equity purchases at time t
$FPET_{it}$ = Foreign portfolio equity turnover at time t
ERR_{it} = Exchange rate risk at time t
$TBILit$ = Treasury bill rate at time t
$INFL_{it}$ = Inflation rate at time t
$MCAP_{it}$ = Market capitalization at time t
α = The intercept
β_i = The parameter of explanatory variables of FPES, FPEP, FPET, ERR, TBIL, INFL and MCAP
μ_i = The disturbance term

Unit root tests

A unit root test was carried in this study to examine stationarity of variables because it used panel data which combined both cross-sectional and time series information. A variable is said to be stationary if it displays mean-reverting behaviour implying that its mean remains constant over time (Hlouska and Wagner, 2005). Any regression with non-stationary variables is invalid and hence, any time series application must start with testing stationarity of the data (Charito, 2010). This study used Levin, Lin and Chu unit root test to examine stationarity. Levin, Lin and Chu suggested the following hypothesis:

H_0 = each time series contains a unit root
H_1 = each time series is stationary

Choice of model: Testing for the validity of the fixed effects model

Panel data analysis has three more-or-less independent approaches: Pooled panels; assumes that there are no unique attributes of individuals within the measurement set, and no universal effects across time. Fixed effects models; assumes that there are unique attributes of individuals that are not the results of random variation and that do not vary across time. It assumes differences in intercepts across groups or time periods. Random effects models; assumes there are unique, time constant attributes of individuals that are the results of random variation and do not correlate with the individual regressors. This model is adequate if the study want to draw inferences about the whole population, not only the examined sample.

The choice of the appropriate model depends upon the objective of the analysis, and the problems concerning the exogeneity of the explanatory variables. The last two models were considered in this analysis since pooled regression model assumes that all the financial institutions are the same which is not the case. The Pooled regression model assumes that the coefficients (including the intercepts) are the same for all the financial

Table 1. Hausman test (Commercial banks).

Test summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	7	1.0000

institutions. The fixed and random effects models cater for heterogeneity or individuality among the financial institutions by allowing each financial institution to have its own intercept value which is time invariant. As to which model between the fixed and random is appropriate, the study used the Hausman test.

Discussion of findings

The effect of foreign portfolio equity and exchange rate risk on stock returns of listed commercial banks in Kenya

In the case of commercial banks, the Hausman test had a chi square statistic of 0.000000 with an insignificant probability value of 1.0000 meaning that the study should reject the fixed effect model in favour of the random effects model as presented in Table 1. The results from panel estimation output for the effect of foreign portfolio equity and exchange rate risk on stock returns of listed commercial banks in Kenya are shown in the Table 2.

The results for listed commercial banks when tested independently showed varying findings. Foreign portfolio equity sales had a coefficient -0.0022 and an insignificant probability value of 0.5534 for commercial banks. The results showed that foreign portfolio equity sales do not affect stock returns. The results are in support the work of Meurer (2006) who studied the behaviour shown by international investors in the Brazilian stock market. Meurer found out that portfolio flows are higher when the index is low, and the outflows are higher when the index is high, showing that portfolio investors are trying to operate in the opposite way with respect to the market, buying stocks when prices are low and selling when prices are high, chasing profitable opportunities.

Foreign portfolio equity purchases had a coefficient of -0.0095 and an insignificant probability value of 0.4495. The results are statistically insignificant meaning that foreign portfolio equity purchases for commercial banks do not affect stock returns. The results contradicted with the work of Luciana et al. (2010) who examined the relationship between stock returns and foreign investment in Brazil. They concluded that the inflows of foreign investment boosted the returns from 1995 to 2005. This suggested that positive feedback trading played a role, and that the market promptly assimilated the relevant new information that arrived.

Foreign portfolio equity turnover had a coefficient of -1.327 and a probability value of 0.4043 for commercial

banks and a coefficient of -0.5559 which is statistically insignificant. Therefore, foreign portfolio equity turnover do not affect stock returns of both commercial banks. The results were not consistent with the work of Griffin et al. (2004) who used daily data on equity flows for nine emerging market countries and found that equity flows are positively related to host country stock returns as well as market performance abroad.

Exchange rate risk had a significant negative coefficient of -0.8371 with a P- value of 0.0020 for banking institution and negative coefficient of -0.6023 with a significant P-Value of 0.0673 for non- commercial banks. The results are statistically significant at one percent level of significance for commercial banks. The banks' exposure to exchange rate risk has grown in importance due to the continuing expansion of foreign currency business, greater variability of exchange rates, and increase in foreign exchange deposits and foreign borrowing in the Kenyan banking sector. The findings are in line with the work done by Muller and Verschoor (2007). Muller and Verschoor (2007) examined the relationship between individual Asian firm's stock returns and fluctuations in foreign exchange rates. Among 3634 firms from Hong Kong, Indonesia, South Korea, Malaysia, Philippine, Singapore and Thailand, 25 percent experienced economically significant exposure effects to the US dollar, and 22.5 percent to the Japanese yen for the period of January 1993 to January 2003. Reviewing the empirical literature, previous researchers investigated the effect of both contemporaneous and lagged exchange rate changes on current stock returns.

Inflation had significant negative coefficient of -1.7550 with a P- value of 0.0210 in relation to stock returns for commercial banks. The results indicate that the stock returns of commercial banks are affected by inflation. The results supported prior expectation that an increase in inflation erodes the value of shares resulting to decrease in stock returns of commercial banks.

Treasury bills rate had insignificant negative coefficient of -0.2078 with a P-value of 0.2552 in relation to stock returns indicating that treasury bills rate do not affect the stock returns of commercial banks. The findings support the work done by Joseph and Vezos (2006) who investigated the impact of interest rates changes on US bank's stock returns. Joseph and Vezos (2006) study employed an Exponential Generalised Autoregressive Conditional Heteroscedastic model to account for the Autoregressive Conditional Heteroscedastic (ARCH) effects in daily returns instead of standard ordinary Least Square estimation methods with the result that the

Table 2. Results from the panel estimation output for listed commercial banks.

Variable	Pooled model	Random effects model
	Coefficient (P-Value)	Coefficient (P-Value)
ERR	-0.837116 (0.0020)***	-0.837116 (0.0020)***
FPEP	-0.009568 (0.4479)	-0.009568 (0.4495)
FPES	-0.002275 (0.5520)	-0.002275 (0.5534)
FPET	-1.327508 (0.4027)	-1.327508 (0.4043)
INFL	-1.755014 (0.0206)**	-1.755014 (0.0210)**
MKTCAP	0.005876 (0.3983)	0.005876 (0.4000)
TBIL	-0.207882 (0.2535)	-0.207882 (0.2552)
C	5.048217 (0.0041)	5.048217 (0.0043)
R- Squared	0.022374	0.022374
Prob (F- Statistic)	0.008562	0.008562
Nxt	840	840

***Significance at 1% level of significance; ** Significance at 5% level of significance; * Significance at 10% level of significance.

presence of ARCH effects would had affected estimation efficiency.

The results suggested that the market return accounted for most of the variation in stock returns at both the individual bank and portfolio levels; and the degree of the sensitivity of the stock returns to interest rate changes was not very pronounced despite the use of high frequency data.

Market capitalization had insignificant positive coefficient of 0.00587 with a P- value of 0.4000 indicating that market capitalization do not affect the stock returns of banking and non-commercial banks. This is not in line with prior expectations which believed that large firms as measured by higher market capitalization are expected to have higher returns.

The probability F-statistic is 0.008 for banking institution meaning that the model is stable and significant at one percent level of significance. The probability F- statistic for non-commercial banks is 0.5086.

Summary of the findings

The effect of foreign portfolio equity and exchange rate risk on stock returns of listed commercial banks in Kenya

The panel estimation output results for commercial banks indicated the following;

Foreign portfolio equity sales for commercial banks had a coefficient -0.0022 and an insignificant probability value of 0.5534 meaning that foreign portfolio equity sales do not affect stock returns of commercial banks. Foreign portfolio equity purchases had a coefficient of -0.0095 and an insignificant probability value of 0.4495 for commercial banks. Foreign portfolio equity turnover had a coefficient of -1.3275 and a probability value of 0.4043 for commercial banks. Exchange rate risk had a negative coefficient of -0.8371 with a statistically significant P-

value of 0.0020 for commercial banks indicating that exchange rate do have significant effect on stock returns of commercial banks at one percent level of significance. The null hypothesis stating that there is no significant effect of foreign portfolio equity (sales, purchases and turnover) and exchange rate risk on stock returns of listed commercial banks in Kenya is rejected.

CONCLUSION

The study found that exchange rate risks do affect stock returns of listed commercial banks in Kenya. The study further found out that foreign portfolio equity sales, foreign portfolio equity purchases and foreign portfolio equity turnover do not affect stock returns of commercial banks. The study concluded that listed commercial banks engaged more in forex transaction and most of this banks are multinational banks hence the ease to attract foreign investors to buy the shares of their companies.

RECOMMENDATION

The study recommended management of foreign equity flows in Kenya's financial sector through some non-radical interventions such as building of reserves by commercial banks to guard against reversals. The government of Kenya should enhance stability of macroeconomic factors such as foreign exchange rate through monetary policy as they affect the performance of securities exchange hence stock returns.

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Conflicts of Interests

The authors have not declared any conflict of interests.

REFERENCES

Asia-Pacific Economic Cooperation (2000). Voluntary Action Plan for Promoting Freer and More Stable Capital Flows, report presented to APEC finance ministers.

Bekaert G, Harvey CR, Lumsdaine RL (2002). The Dynamics of Emerging Market Equity Flows. J. Int. Money Fin. 21:295-350.

Brudel J (2005). Panel data analysis. Retrieved March 13, from http://www.sowi.unimannheim.de/.../Panel analyse.pdf

Charito BJ (2010). The evolution of corporate governance in an emerging market: Evidence from Philippine initial public offerings (IPO) Discussion Papers, No. 1002.

Cooper RD, Schindler PS (2004). Business Research Methods. Eight Edition . Tata McGraw-Hill. New Delhi, India.

Damodar N, Sangeetha (2007). Basic Econometrics. Fourth Edition, Tata McGraw-Hill Publishing Company Limited in New Delhi in India.

Feldstein M (1980). Inflation and the Stock Market. Am. Econ. Rev. 70(5):839-947.

Griffin JM, Harris JH, Topaloglu S (2003). The dynamics of institutional and individual trading. J. Financ. 58:2285-2320.

Griffin JM, Nardari F, Stulz RM (2004). Are daily cross-border equity flows pushed or pulled? Rev. Econ. Stat. 86:641-657.

Hlouska J, Wagner M (2005). The performance of panel unit root and stationarity tests: results from large scale simulation study. European Economic Institute. Working paper, No 5.

Joseph NL, Vezos P (2006). The sensitivity of US banks' stock returns to interest and exchange rate changes. Manager. Fin. 32(2):182-199.

Luciana R, Roberto M, Sergio D (2010). Stock returns and foreign investment in Brazil, Appl. Financ. Econ. 20(17):1351-1361.

Meurer R (2006). The behaviour shown by international investors in the Brazilian stock market. Brazil J. Fin. 4(1):345-361.

Muller A, Verschoor FC (2007). Asian Foreign Exchange Risk Exposure. J. Jap. Int. Econ. 21(1):16-37.

Ngugi RW (2003). Development of the Nairobi Stock Exchange: A historical perspective (Discussion paper No. 27). Nairobi: Kenya Institute for Public Policy Research and Analysis.

Park HM (2011). Practical Guides to Panel Data Modeling: A Step by Step Analysis Using Stata. Retrieved March 16, 2015 from http://www.iuj.ac.jp/faculty/

Saunders M, Lewis P, Thornhill A (2009). Research Methods for Business Students.'5th Edition. Prentice Hall.

Schmidheiny K (2013). Panel Data: Fixed and Random Effects: Retrieved March 16, 2015 from http://www.schmidheiny.name/teaching/panel2up.pdf

Stulz RM (1999). International Portfolio Flows and Security Markets. Unpublished Working Paper, Ohio State University, Columbus, Ohio.

Tokat Y (2004). International Equity Investing: Investing in Emerging Markets. Investment Counseling and Research, the Vanguard group.

Full Length Research Paper

A comparison of the effect of foreign portfolio equity on stock returns of listed banking and non- banking institutions in Kenya

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Uncertainties in the flow of foreign portfolio investments (FPI) result in unpredictable behaviour of stock returns in Kenya's economy and also at the firm level. The net effect of this is the possibility of financial loss suffered by the banking and non-banking institutions. The objective of the study was to compare the effects of foreign portfolio equity on stock returns of listed banking and non- banking institutions in Kenya. The study used purposive sampling technique and concentrated on 14 banking and non-banking institutions listed on the Nairobi Securities Exchange. Secondary data was obtained from Central bank of Kenya, Nairobi securities exchange and capital markets authority for the period January 2008 to December 2014. The study used causal research design, and adopted a panel data regression using the Ordinary Least Squares (OLS) method where the data included time series and cross-sectional data that was pooled into a panel data set and estimated using panel data regression. Results from panel estimation showed that exchange rate risk had a significant negative coefficient of -0.8371 with a P- value of 0.0020 for banking institution and negative coefficient of -0.6023 with a significant P- Value of 0.0673 for non-banking institutions. The results are statistically significant at one percent level of significance and five percent level of significance for banking and non-banking institutions respectively. Inflation had significant negative coefficient of -1.7550 with a P- value of 0.0210 in relation to stock returns for banking institutions and an insignificant negative coefficient of -0.6875 with a P- value of 0.4569 for non-banking institutions. The results indicate that the stock returns of banking institutions are affected by inflation while inflation has no effect on non-banking stock returns. The study recommended that policies that would attract foreign portfolio investment should be pursued in order to enhance stock returns.

Key words: Foreign portfolio equity, banking institutions, non-banking institutions, stock returns, Nairobi securities exchange.

INTRODUCTION

An important development in international financial markets over the last decade has been the growing role of foreign portfolio investment as a channel for international capital flows to developing countries. The increased flow of securities investment from industrialized countries to emerging markets was made possible by a number of developments in all the countries involved (Somoncu and Karan, 2006). Major sources for foreign portfolio investment in developing countries were the predominantly United States (US) based emerging markets mutual funds which contributed to the surge in investments in emerging markets equities. Some of these

funds were interested in investing in countries where macroeconomic variables were far out of line with sustainable values, so that when changes in asset prices occurred, they would be attractively large. However, the financial crises driven from the reverse in capital inflows lead to the discussion on the role of market players. Bouts of turbulences in international financial markets in recent years have drawn attention to the role played by institutional investors, especially hedge funds. Following the crisis in Asia, Russia and Turkey, it was suggested that hedge fund investments precipitated major developments in asset prices either directly through their own transactions or indirectly *via* the tendency of other market participants to follow their lead (Conover et al., 2002).

Importance of foreign portfolio investments in financial institutions

Foreign portfolio investment increases the liquidity of financial institutions and domestic capital markets, and can help develop market efficiency as well. As markets become more liquid, as they become deeper and broader, a wider range of investments can be financed. New enterprises, for example, have a greater chance of receiving start-up financing. Savers have more opportunity to invest with the assurance that they will be able to manage their portfolio, or sell their financial securities quickly if they need access to their savings. In this way, liquid markets can also make longer-term investment more attractive. Foreign portfolio investment can also bring discipline and know-how into the financial institutions. In a deeper, broader market, investors will have greater incentives to expend resources in researching new or emerging investment opportunities. As enterprises compete for financing, they will face demands for better information, both in terms of quantity and quality. This press for fuller disclosure will promote transparency, which can have positive spill-over into other economic sectors (APEC, 2000).

Contribution of the study

The understanding of foreign portfolio flows is important for policy makers, forecasters and researchers alike, and this is particularly the case for financial institutions in Kenya. Foreign portfolio flows make up an important part of the balance of payments, and the large fluctuations in such flows have, among emerging economies, ignited a number of balance-of-payment crises over the past two

decades. The sharp reduction in foreign investment inflows was, indeed, the main reason for the Mexican crisis of 1994 and 1995, and it played an important part in most of the emerging market crises that was to follow. Foreign portfolio flows not only constitute one of the main ingredients in the balance of payments, but also one of the most volatile. Understanding foreign portfolio investment flows is, therefore, crucial in any balance-of-payments analysis. The discussion of the results could inform the improvement of structural policies with the objective of reducing the likelihood and intensity of adverse effects of foreign portfolio investments and increasing their benefits for the Kenyan economy.

There has been a very large information gap for investors and analysts on the effect of foreign portfolio flows on stock returns. The study may help to reduce the information gap by adding to the existing body of knowledge. Investors also need information on the behaviour of foreign portfolio flows, especially in their short-term and long-term financing decisions, earning assessments, and also for capital budgeting decisions.

METHODOLOGY

Introduction

This chapter presented the model, methods, data and estimation techniques used in the study to investigate the effect of foreign portfolio investment on stock returns.

Research design

The design of the study was causal as it seeks to test for the existence of cause-and-effect relationships among variables (Cooper and Schindler, 2004). This design is suitable in studies which aim to determine whether a group of variables together influence a given dependant variable (Saunders et al., 2009). The design was suitable for this study as it adopted a theoretical approach in establishing the comparison between the effects of foreign portfolio equity on stock returns of listed banking and non-banking institutions in Kenya.

Target population

The study focused on a population of 21 listed commercial banks in Kenya. The 21 listed financial institutions trade the securities in NSE.

Sample and sampling procedure

The sample size for this study was 14 listed banking and non-banking institutions. Purposive sampling was used to select 14

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listed financial institutions whose monthly foreign data was available at NSE since January 2008 to December 2014.

Data collection

The study used panel financial data over the seven year period (January 2008 to December 2014) to compare the effect of foreign portfolio equity (sales, purchases and turnover) on stock returns of listed banking and non- banking institutions in Kenya. To ensure that enough degrees of freedom in the models to be estimated are available, monthly data covering the entire study period was collected resulting to 9408 observations. The method of data collection was secondary research, which essentially involved reviewing data sources that were collected for some other purpose than the study at hand. The main sources of data were: Central Bank of Kenya, Capital markets Authority, Nairobi Securities Exchanges and Kenya Bureaus of Statistics offices.

Data analysis

This study adopted a panel data regression using the Ordinary Least Squares (OLS) method where the data included time series and cross-sectional data that was pooled into a panel data set and estimated using panel data regression.

Justification for use of panel data approach

Panel data is also called pooled or combined data since there are elements of both time series and cross section data. According to Damodar and Sangeetha (2007), panel data has a number of advantages. First, since panel data relate to individuals e.g. firms over time, there is bound to be heterogeneity in these units. The technique of panel data estimation takes such heterogeneity explicitly into account by allowing for individual specific variables. Secondly, by combining time series of cross section observations, panel data give more informative data, more variability, less collinearity among variables, more degrees of freedom and more efficiency. Thirdly, by making data available for several units, panel data can minimise the bias that might result if the study aggregate individuals into broad aggregates. These advantages enrich panel data empirical analysis in ways that may not be possible if only cross-section or time series data is used, hence the use of panel data in this study.

Descriptive statistics

Descriptive statistics was essential in determining the statistical properties of the model so as to select the proper functional form of the estimable model. Therefore the study sought to determine the spread of the data which included calculating for the mean, standard deviation, standard errors, maximum and minimum values of the variables overtime. This also involved finding correlation matrix so as to check which variables were highly correlated so as to avoid the problem of multi-collinearity which is a common problem in time series data.

Model specification, estimation and rationale of variables

A univariate analysis was conducted and the data converted to their natural logs to ensure a normal distribution and eliminate heteroscedasticity. The study hypotheses were measured using one panel data regression equation. The equation had Stock returns (SR) as the dependent variable and Foreign portfolio equity

sales (FPES), Foreign portfolio equity purchases (FPEP) and Foreign portfolio equity turnover (FPET) as independent variables. Exchange rate risk (ERR), Treasury bill rate (TBIL), Inflation rate (INFL) and Market capitalization (MCAP) were the control/intervening variables in the study. The regression analysis used E-views 7 data analysis software.

The hypotheses were tested using the following regression model for banking institutions;

$SR_{it} = \alpha + \beta_1 FPES_{it} + \beta_2 FPEP_{it} + \beta_3 FPET_{it} + \beta_4 ERR_{it} + \beta_5 TBILit + \beta_6 INFL_{it} + \beta_7 MCAP_{it} + \mu_{it}$

Where; SR_{it} = Stock returns at time t for banking institutions I; $FPES_{it}$ = Foreign portfolio equity sales at time t; $FPEP_{it}$ = Foreign portfolio equity purchases at time t; $FPET_{it}$ = Foreign portfolio equity turnover at time t; ERR_{it} = Exchange rate risk at time t; $TBILit$ = Treasury bill rate at time t; $INFL_{it}$ = Inflation rate at time t; $MCAP_{it}$ = Market capitalization at time t; α = The intercept; β_i = The parameter of explanatory variables of FPES, FPEP, FPET, ERR,TBIL, INFL and MCAP; μ_i = The disturbance term.

For non-banking institutions, the hypotheses were tested using the following regression model:

$SR_{it} = \alpha + \beta_1 FPES_{it} + \beta_2 FPEP_{it} + \beta_3 FPET_{it} + \beta_4 ERR_{it} + \beta_5 TBILit + \beta_6 INFL_{it} + \beta_7 MCAP_{it} + \mu_{it}$

Unit root tests

A unit root test was carried in this study to examine stationarity of variables because it used panel data which combined both cross-sectional and time series information. A variable is said to be stationary if it displays mean-reverting behaviour implying that its mean remains constant over time (Hlouska and Wagner, 2005). Any regression with non-stationary variables is invalid and hence, any time series application must start with testing stationarity of the data (Charito, 2010). This study used Levin, Lin and Chu unit root test to examine stationarity. Levin, Lin and Chu suggested the following hypothesis:

H_0 = each time series contains a unit root
H_1 = each time series is stationary

Choice of model: Testing for the validity of the fixed effects model

Panel data analysis has three more-or-less independent approaches: Pooled panels; assumes that there are no unique attributes of individuals within the measurement set, and no universal effects across time. Fixed effects models; assumes that there are unique attributes of individuals that are not the results of random variation and that do not vary across time. It assumes differences in intercepts across groups or time periods. Random effects models; assumes there are unique, time constant attributes of individuals that are the results of random variation and do not correlate with the individual regressors. This model is adequate if the study want to draw inferences about the whole population, not only the examined sample.

The choice of the appropriate model depends upon the objective of the analysis, and the problems concerning the exogeneity of the explanatory variables. The last two models were considered in this analysis since pooled regression model assumes that all the financial institutions are the same which is not the case. The Pooled regression model assumes that the coefficients (including the intercepts) are the same for all the financial institutions. The fixed and random effects models cater for heterogeneity or individuality

Table 1. Hausman test (Banking institutions).

Test summary	Chi-Sq. statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	7	1.0000

Table 2. Hausman test (Non-banking institutions).

Test summary	Chi-Sq. statistic	Chi-Sq. d.f.	Prob.
Cross-section random	1.484702	4	0.8293

among the financial institutions by allowing each financial institution to have its own intercept value which is time invariant. As to which model between the fixed and random is appropriate, the study used the Hausman test.

RESULTS AND DISCUSSION

Comparative analysis results between banking and non- banking institutions

The study used panel estimation model to find out if there is any comparison between the effect of foreign portfolio equity (sale, purchases and turnover) and exchange rate risk on stock returns of banking and non- banking institutions. Independent panel analysis tests were carried out differently for banking and non- banking institutions. The results are discussed subsequently.

Panel estimation results (Banking and non-banking institutions)

Separate panel equations were run for banking and non-banking institutions to have an in depth analysis of the results. In the case of banking institutions the Hausman test had a chi square statistic of 0.000000 with an insignificant probability value of 1.0000 meaning that the study should reject the fixed effect model in favour of the random effects model as presented in Table 1. In non-banking institutions, Hausman test had an insignificant probability value of 0.8293 indicating also that the study should reject the fixed effect model in favour of the random effects model as presented in Table 2. Table 3 presents the panel estimation results for banking and non-banking institutions.

A comparison of the effect of foreign portfolio equity and exchange rate risk on stock returns of banking and non-banking institutions

For banking institutions the random effects model indicated that foreign portfolio equity purchases had a coefficient of -0.0095 and an insignificant probability

value of 0.4495. For non-banking institutions, foreign portfolio equity purchases had a coefficient of 0.0014 with an insignificant probability value of 0.5820. This therefore meant that foreign portfolio equity purchases do not affect stock returns of banking institutions. The results are not consistent with base-broadening hypothesis which suggested that foreign inflows cause emerging equity market prices to rise. By broadening the investor base, diversification and risk sharing is increased thereby lowering the required risk premium.

Foreign portfolio equity sales had a coefficient -0.0022 and an insignificant probability value of 0.5534 for banking institutions and a coefficient of 0.0006 with an insignificant probability value of 0.9596 for non-banking institutions meaning that foreign portfolio equity sales do not have an effect on stock returns. This is not in line with the work of Odean (1998) and Griffin et al. (2003). Odean (1998) showed that individual investors tend to sell past winners and hold on to past losers. Griffin et al. (2003) on the dynamics of institutional and individual trading showed that individual investors tend to be contrarian traders in that they sell stocks with positive returns in prior trading days.

Foreign portfolio equity turnover had a coefficient of -1.327 and a probability value of 0.4043 for banking institutions and a coefficient of -0.5559 with a probability value of 0.7274 for non-banking institutions. The results are statistically insignificant indicating that foreign portfolio equity turnover do not affect stock returns. The results are not consistent with the work of Stulz (1999) who argued that foreign flows increase prices when they come in and decrease them when they leave thereby making prices more volatile. Hence, capital flows have an impact on valuations only if they are undertaken because of information that foreign investors have that is not yet incorporated in prices.

Exchange rate risk had a significant negative coefficient of -0.8371 with a P- value of 0.0020 for banking institution and negative coefficient of -0.6023 with a significant P-Value of 0.0673 for non- banking institutions. The results are statistically significant at one percent level of significance and five percent level of significance for banking and non-banking institutions respectively. The

Table 3. The panel estimation output for banking and non-banking institutions.

Variable	Banking institutions		Non-banking institutions	
	Pooled model	Random effects model	Pooled model	Random effects model
	Coefficient (P-value)	Coefficient (P-value)	Coefficient (P-value)	Coefficient (P-value)
ERR	-0.837116(0.0020)***	-0.837116(0.0020)***	-0.605813(0.0092)***	-0.602355(0.0673)**
FPEP	-0.009568(0.4479)	-0.009568(0.4495)	0.001317(0.6485)	0.001447(0.5820)
FPES	-0.002275(0.5520)	-0.002275(0.5534)	0.003080(0.8249)	0.000640(0.9596)
FPET	-1.327508(0.4027)	-1.327508(0.4043)	-0.184036(0.9171)	-0.555928(0.7274)
INFL	-1.755014(0.0206)**	-1.755014(0.0210)**	-0.686962(0.2915)	-0.687515(0.4569)
MKTCAP	0.005876(0.3983)	0.005876(0.4000)	0.013893(0.1269)	0.009702(0.2426)
TBIL	-0.207882(0.2535)	-0.207882(0.2552)	-0.035529(0.8240)	-0.023153(0.9169)
C	5.048217(0.0041)	5.048217(0.0043)	1.659376(0.2697)	1.664582(0.4351)
R- Squared	0.022374	0.022374	0.033818	0.018793
Prob (F- Statistic)	0.008562	0.008562	0.123284	0.508605
Durbin- Watson Statistic	2.427628	2.427628	1.964748	2.095134
N×t	840	840	336	336

***Significance at 1% level of significance; ** Significance at 5% level of significance; * Significance at 10% level of significance.

banks' exposure to exchange rate risk has grown in importance due to the continuing expansion of foreign currency business, greater variability of exchange rates, and increase in foreign exchange deposits and foreign borrowing in Kenyan banking sector. Exchange rates affect most directly those banking institutions with foreign currency transactions and foreign operations. Even without such activities, exchange rates can affect banking institutions indirectly through their influence on the extent of foreign competition, the demand for loans, and other aspects of banking conditions. The results are in line with the work of Maysami and Koh (2000) who examined the impacts of the exchange rate on the stock returns and showed that the exchange rate is the determinant in the stock prices.

Inflation had significant negative coefficient of -1.7550 with a P- value of 0.0210 in relation to stock returns for banking institutions and an insignificant negative coefficient of -0.6875 with a P- value of 0.4569 for non-banking institutions. The results indicate that the stock returns of banking institutions are affected by inflation while inflation has no effect on non- banking stock returns. The results supported prior expectation that an increase in inflation erodes the value of shares resulting to decrease in stock returns of banking institutions.

Treasury bills rate had insignificant negative coefficient of -0.2078 with a P-value of 0.2552 in relation to stock returns for banking institutions while non- banking institutions treasury bills rate had insignificant negative coefficient of -0.0231 with a P-value of 0.9169 indicating that treasury bills rate do not affect the stock returns of banking institutions and non-banking institutions. The findings support the work done by Joseph and Vezos (2006) who investigated the impact of interest rates changes on US bank's stock returns. Joseph and Vezos

study employed an Exponential Generalised Auto-regressive Conditional Heteroscedastic model to account for the Autoregressive Conditional Heteroscedastic (ARCH) effects in daily returns instead of standard ordinary Least Square estimation methods with the result that the presence of ARCH effects would had affected estimation efficiency. The results suggested that the market return accounted for most of the variation in stock returns at both the individual bank and portfolio levels; and the degree of the sensitivity of the stock returns to interest rate changes was not very pronounced despite the use of high frequency data.

Market capitalization had insignificant positive coefficient of 0.00587 with a P- value of 0.4000 for banking institutions while non-banking institutions had insignificant positive coefficient of 0.0097 with a P-value of 0.2426 in relation to stock returns indicating that market capitalization do not affect the stock returns of banking and non-banking institutions. This is not in line with prior expectations which believed that large firms as measured by higher market capitalization are expected to have higher returns.

The probability F-statistic is 0.008 for banking institution meaning that the model is stable and significant at one percent level of significance. The probability F- statistic for non-banking institutions is 0.5086.

There is a difference in the results for banking and non-banking institutions. This could have been contributed by the fact that there were only four sampled non- banking institutions with very few observations. Another reason for differences in results could be because these non-banking institutions are small in size hence attracting a few foreign investors as indicated by the volume of inflows of foreign equity. The other reasons for varied results between banking and non- banking institutions

are first, non- banking institutions provide such services as hire purchase, leasing, asset management, venture capital services, insurance etc. which sometimes are not appealing to foreign investors as compared to services provided by banking institutions like foreign exchange financing.

Second, banking institutions have gone international by expanding their branch networks globally especially through cross listing as compared to non- banking institutions which may not be cross listed in other stock exchanges. Cross listing allows shares of these banks to be traded in other securities exchange hence the ability to attract foreign investors.

Third, most banking institutions have embraced financial globalization as compared to non-banking institutions. Financial globalization is encompassed by two main aspects: Free flow of capital into and out of the domestic economy and high participation in domestic financial system. Financial globalization can be measured by capital mobility, that is, holdings of cross-border financial assets and liabilities, magnitude of cross-border flows into and out of the financial system and foreign participation, that is, foreign share of domestic banking assets and liabilities, ease of entry for foreign financial institutions into domestic market.

Fourth, banking institutions can also raise funds at no cost as no interest is payable on demand deposits and therefore they have the potential to grow and improve their financial performance hence a possibility of attracting foreign investors as compared to non-banking institutions who have to pay higher and higher interest to attract more funds.

The null hypothesis stating that there is no significant comparative difference between the effect of foreign portfolio equity (sales, purchases and turnover) and exchange rate risk on stock returns of listed banking and non- banking institutions in Kenya is rejected.

A comparison of the effect of foreign portfolio equity on stock returns of banking and non- banking institutions

The comparative results for banking and non-banking sector when tested independently showed varying findings. The panel estimation output results for banking and non-banking institutions indicated the following: Foreign portfolio equity sales for banking institutions had a coefficient -0.0022 and an insignificant probability value of 0.5534 while non-banking institutions had a coefficient of 0.00064 with an insignificant P-value of 0.9596 meaning that foreign portfolio equity sales do not affect stock returns of banking and non-banking institutions. Foreign portfolio equity purchases had a coefficient of -0.0095 and an insignificant probability value of 0.4495 for banking institutions while non-banking institutions had a coefficient of 0.00144 with an insignificant P-value of

0.5820. Foreign portfolio equity turnover had a coefficient of -1.3275 and a probability value of 0.4043 and a coefficient of -0.5559 with a P- value of 0.7274 for banking and non-banking institutions respectively. Exchange rate risk had a negative coefficient of -0.8371 with a statistically significant P- value of 0.0020 for banking institutions and negative coefficient of -0.6023 with a P- value of 0.0673 indicating that exchange rate do have significant effect on stock returns of banking institutions and non-banking institutions at one percent and five percent level of significance respectively. The null hypothesis stating that there is no significant comparative difference between the effect of foreign portfolio equity (sales, purchases and turnover) and exchange rate risk on stock returns of listed banking and non- banking institutions in Kenya fail to be accepted.

CONCLUSION

The study found that there is a comparison between the effect of foreign portfolio equity (sales, purchases and turnover) and exchange rate risk on stock returns of banking and non- banking institutions. The study found out that foreign portfolio equity sales, foreign portfolio equity purchases and foreign portfolio equity turnover do not affect stock returns of banking institutions and non-banking institutions. Exchange rate risk affects stock returns of banking and non-banking institutions at one and five percent level of significance respectively. The study concluded that banking institutions engaged more in forex transaction and most of this banks are multinational banks hence the ease to attract foreign investors to buy the shares of their companies. Non-banking institutions on the other hand are limited by their nature, that is, they are small in size hence attracting a few foreign investors as indicated by the volume of inflows of foreign equity.

RECOMMENDATION

The government of Kenya should enhance stability of macroeconomic factors such as foreign exchange rate through monetary policy as they affect the performance of securities hence stock returns. On the other hand, the government should aim at financing and promoting the growth of non-banking institutions in order to make them attractive to foreign investors in Kenya. The study recommended management of foreign equity flows in Kenya's banking sector through some non-radical interventions such as building of reserves by commercial banks to guard against reversals.

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article would have been impossible.

Conflict of Interests

The authors have not declared any conflict of interests.

REFERENCES

Asia-Pacific Economic Cooperation (2000). Voluntary Action Plan for Promoting Freer and More Stable Capital Flows, report presented to APEC finance ministers.

Charito BJ (2010). The evolution of corporate governance in an emerging market: Evidence from Philippine initial public offerings (IPO) Discussion Papers, No. 1002.

Conover CM, Jensen GR, Robert RJ (2002). Emerging Markets: When Are They Worth It? Fin. Anal. J. 58(2):86-95.

Cooper RD, Schindler PS (2004). Business Research Methods. Eight Edition. Tata McGraw-Hill. New Delhi, India.

Damodar N, Sangeetha (2007). Basic Econometrics. Fourth Edition, Tata McGraw-Hill Publishing Company Limited in New Delhi in India.

Griffin JM, Harris JH, Topaloglu S (2003). The dynamics of institutional and individual trading. J. Financ. 58: 2285-2320.

Hlouska J, Wagner M (2005). The performance of panel unit root and stationarity tests: results from large scale simulation study. European Economic Institute. Working paper, No 5.

Joseph NL, Vezos P (2006). The sensitivity of US banks' stock returns to interest and exchange rate changes. Manage. Financ. 32(2):182-199.

Maysami RC, Koh TS (2000). A Vector Error Correction Model of the Singapore stock market. Int. Rev. Econ. Financ. 9:79-96.

Odean T (1998). Are investors reluctant to realize their losses? J. Financ. 53:1775-1798.

Somoncu K, Karan MB (2006). The impacts of international portfolio investments. Int. J. Financ. 77:149-167.

Stulz RM (1999). International Portfolio Flows and Security Markets. Unpublished Working Paper, Ohio State University, Columbus, Ohio.

Saunders M, Lewis P, Thornhill A (2009). Research Methods for Business Students. 5th Edition. Prentice Hall.

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