Determinants of Bank Performance in Ghana, the Economic Value Added (EVA) Approach

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Abstract

Previous Ghanaian governments attempted to use Ghana's well-developed banking system to grow the economy. Bad loans caused the banks to suffer great losses during the late 1980s, and decline in the cedi value caused a rise in the banks external loans. In 1988, the government initiated financial reforms to strengthen the banking sector. The reforms aimed to improve profitability, efficiency and productivity of banks. In spite of these reforms in 1990s, banks' performance has remained poor with substantial gaps in service delivery to private agents. There is sufficient empirical evidence that poor performance is manifest in low performance of bank indicators, including: high levels of credit risk to private agents, poor quality loans, limited and or inadequate capitalization, operational inefficiencies, higher incidences of non-performing loans, higher levels of liquidity risk; among others. Empirical evidence clearly shows that studies focusing on Ghana's financial sector are still scanty and limited. The study seeks to investigate the determinants of banks 'profitability in Ghana for the period 1988 to 2011 using Economic Value Added (EVA) technique to measure performance. The study evaluates two performance yardsticks to determine the best alternatives. The result of the study suggested economic value added as the best measurement as against the standard accounting measurement namely; ROA. Inflation was registered not to be affected Ghana's bank performance. The study results draw some implications for policy that helps to improve performance of the banking sector in Ghana.

Keywords: economic value added, bank performance, return on asset, net interest margin

1. Introduction

Prior to the 1980s, various governments in Ghana took advantage of a well-developed banking system to grow the Ghanaian economy. In the late 1980s, the bank's performance degraded due to some bad loans in their portfolios. Moreover, banks' liabilities rose due to cedi depreciation. The government in 1988 initiated financial reforms to strengthen the banking sector. Banks were required to keep a minimum capital base of six percent of net assets, adjusted for risk and to institute uniform accounting and auditing standards. These requirements were contained in the August 1989 amended banking law. Also, the law demanded limits on risk exposure to single borrowers and sectors. The measures resulted in enhancing Bank of Ghana supervision, efficient regulation, and improved credit allocation and resource mobilization. However, the reforms with the objectives to improve banks' efficiency, productivity and profitability have not yielded results, the banks' performance are still pitiable with significant gaps in service delivery to private agents. There is sufficient empirical evidence that poor performance is manifest in low performance of bank indicators, which include poor quality loans, elevated levels of credit risk to private agents, insufficient or and limited capitalization, elevated levels of liquidity risk, many occurrences of bad loans and operational inefficiencies. Although these are stated as constraint areas affecting Ghanaian bank's performance, they are based on a few studies and non-elaborate methods to generate sufficient conclusions. Nissanke and Aryeetey (1998) and Aryeetey et al. (1997) showed that Ghana banking system constant poor performance could be the result of limited access to basic payment services or savings accounts and the high degree of financial market fragmentation.

Empirical evidence demonstrates that there are very few studies on Ghana's financial sector, and the few studies

point to a need for further research on the factors that have continued to cause poor financial performance in the sub-region, notwithstanding the reforms. According to the literature, the studies on banks' profitability would provide more elaborate and current information that is important for policy for the sector and scholarly literature. The study seeks to investigate the determinants of banks 'profitability in Ghana for the period 1988 to 2011 using Economic Value Added (EVA) technique to measure bank performance. The results of the paper will draw some implications for policy that helps to improve performance of the sector in Ghana. The study utilized both bank level as well as macroeconomic factors to measure performance. The study shows a strong positive relationship between the economic value added bank performance measure and the bank specific variables such as the cost to income ratio, the liquid assets (deposits plus short-term funding), and the total asset. The traditional return on asset performance measure also shows a positive relationship with the bank specific variable. We also find that for both economic value added and the return on asset measure, liquid asset strongly determines the bank performance. The paper is organized as follows. In section 1.2, we discuss the banking sector performance. The empirical evidence on banking performance is analyzed in section 2. Section 3 describes the data and methodology used. In section 4, we present the results and comments on Ghana banking performance. Section 5 presents the conclusion and policy discussion.

1.1 Banking Sector Performance

In this section, an attempt is made to use some of the profitability index to describe the performance of Ghana's banking system. Ghana banks over the years have posted high levels of profits in spite of the unstable economic atmosphere that has caused the collapse of other businesses. Factors that have contributed to the high profit include high bank transaction fees and higher net interest income.

The key financial performance indicators show mixed results. The average capital adequacy ratio (CAR) that was recorded in the year 2002 was about 13.4% and 9.27% in 2003. This was well over the minimum 6% required by law (Bank of Ghana, 2004; Buchs & Mathisen, 2005). There was a wide dispersion among banks.

Table 1. Financial soundness indicators for the banking section, 1997–2003

	1997	1998	1999	2000	2001	2002	2003
Capital Adequacy							
Regulatory capital to risk-weighted assets 1	15.2	11.1	11.5	11.6	14.7	13.4	9.3
Percentage of banks greater or equal to 10%	87.5	75	60	62.5	64.7	52.9	66.7
Percentage of banks below 10 and above 6% minimun	6.3	12.5	40	37.5	35.3	35.3	27.8
Percentage of banks below 6 percent minimun	6.3	12.5	0	0	0	11.8	5.6
Capital (net worth) to assets	13.4	12.2	12.2	11.9	13.1	12.6	12.5
Asset Quality							
Foreign exchange loans to total loans 5/	25.6	28.5	33.4	35.3	34.1	33.8	…
Past-due loans to grossloans	24.6	18.9	20.1	16.2	28	28.6	24.4
Nonperforming loans	21.6	17.2	12.8	11.9	19.6	19.6	22.7
Watch-listed loans	3	1.7	7.3	4.3	8.4	5.9	6
Provision as percent of past-due loans	78	89.4	67.2	58.6	46.4	63.3	64.4
Earnings and Profitability							
Net profit (before tax) / net income	51.5	39.2	61.2	52.4	45.9	43.4	39.2
Return on assets 2/	8	8.6	8.5	9.7	8.7	6.8	6.4
Return on equity 3/	39.9	48.9	48.8	65.7	49.7	36.9	54
Expense / income	44	42.2	44.3	38.2	40.2	47.3	36
Interest Rate Spread (deposit money banks)							
Lending rates minus demand deposit rates	37	33.8	32.5	30.5	30.5	30.5	23.3
Lending rates minus demand saving rate	16.3	22	23.5	29.3	29.5	29.5	23
Liquidity							
Actual reserve ratio (as percent of total deposits)	60.1	64.8	61.8	49.9	62.9	66	66.1
Express reserve ratio 4/	17.1	21.8	18.8	5.9	18.4	22	22.1
Loan / deposit	42.2	48.7	59	64	63.9	50.1	56.1
Foreign exchange liabilities / total liabilities 5/	24.9	21.1	29.7	36.2	27	27.4	…
Sensitivity to market risk							
Net foreign exchange assets (Liabilities) to shareholders' funds 5/	62.9	48.1	-7.6	-9.4	22.9	24.3	…

Note. From competition and efficiency in banking: behavioral evidence from Ghana (IMF Working paper No. WP/05/07, p8), by T Buchs and M. Mathisen, 2005, Washington, DC: Internation Monetary Fund. * in precent, at years end, unless otherwise indicated.

Table 2. International comparison of selected banking and institutional indicators

	Ghana	Kenya	Mozambique	Nigeria	South Africa	Tanzania	Uganda	Zambia	SSA Average
Size of financial intermediaries									
Private credit to GDP	11.8	26.8	16.7	14.4	147.2	4.9	40	7.5	15.2
M2 to GDP	19	43.8	5.1	25.8	87.2	18.3	13	16.9	24.8
Currency to GDP	10.5	13.2	15.6	10.8	28.4	8.5	8.8	6.4	13.9
Banking industry									
Number of banks	17	53	10	51	60	29	15	16	…
Netinterest margin	11.5	5	5.9	3.8	5	6.5	11.6	11.4	8.3
Overhead costs	7.3	3.7	4.5	7.4	3.7	6.7	4.6	11.2	5.7
Foreign=bank share (assets)	53	4.8	98	11	0.6	58.7	89	66.6	…
Bank concentration (3 banks)	55	61.6	76.6	86.5	77	45.8	70	81.9	81
Nonperforming loans (share of total loans)	28.8	41	…	17.3	3.9	12.2	6.5	21.8	…
Capital markets									
Stock market capitalization (Percent of GDP)	10.1	9.2	…	10.9	77.4	4.3	0.6	6	21.3
Contract enforcement									
Number of procedures	21	25	18	23	16	26	14	1	29
Duration (number of days)	90	255	540	730	99	207	127	188	334
Bankruptcy									
Time in years	…	4.6	..	1.6	2	3	2	3.7	3.5
Credit markets									
Credit rights index (Ois weakest)[1]	1	1	3	1	2	3	1	2	2
Entry regulations									
Number of procedures	10	11	16	9	9	13	17	6	11
Duration (number of days)	84	61	153	44	38	35	36	40	72
Cost (percent of GNI per capita)	111	54	100	92	135	9	199	24	255

Note. Adapeted from the author: Competition and efficiency in banking: Behavioral evidence from Ghana (IMF Working paper No. WP/05/07, p.8), by T. Buchs and M. Mathisen, 2005, Washington, DC: International Monetary Fund. *(in percent, unless otherwise indicated).

In the light of this, two small commercial banks were not able to satisfy the minimum capital standard requirement. This prompted the intervention by bank supervisors. Further, the asset quality of the banks' loan portfolio had been negatively impacted, due to the adverse macroeconomic developments in 1999 and 2000. The nonperforming loans and past-due loans increased to 28.6% in 2002 from 16.2% in 2000 and slightly decreased to 24.4% in 2003 (see Table 1 below). The impact of the worsening asset quality of the banks' loan portfolio on the banking system was reduced by the cautious lending of the two largest foreign-owned banks (Bank of Ghana, 2004; Buchs & Mathisen, 2005). The banking system is also characterized by high overhead costs. On average the five largest banks recorded overheads of 7% of total asset, which is comparable to the sector as a whole, but significantly higher than the Sub-Saharan African average of 5.7%. It can be noted that these costs are, however, lower than those reported in Nigeria and Zambia (see Table 2).

One important factor that explains the high total overhead cost is the staff-related expenditure component, which accounted for more than half of total overhead costs (about 3.7% to average assets). The leading state-owned bank (bank 1), for example, recorded the highest staff overheads which accounted for 4.3% of average assets, whereas the large commercial bank's average is 3%. The high staff costs to total assets ratio has undermined the low levels of assets per employee and the comparatively high average staff overhead per employee. Also, the high cost may be due to the huge bank's investments in information and communication technologies and telecommunication (ICT) that suffers from interconnectivity problems. Another factor associated with high cost is reflected in some marketing activities such as the repudiation to the network and the automated teller machines (ATM) that seem to have resulted to excessive high investments in such systems (Buchs & Mathisen, 2005).

Despite the high overhead costs and sizable provisioning, profitability indicators show that pretax returns on assets and equity for Ghanaian banks are among the highest in Sub-Saharan Africa (see Table 6). This situation shows very wide interest margins. The return on asset (ROA) was recorded at 6.1% in 2002 and 6.4, while return on equity (ROE) stood at 35.56. This is remarkable by African standards. Noninterest revenue and net interest revenue also stood at 6.4% and 10% of average assets respectively. The 2002 interest rates fall decreased the

banks' income from government securities and resulted in a small narrowing of interest-rate spreads, however the latter remains between 20%–30%. Net interest revenue and noninterest revenue as a percentage of gross income in 2003 were recorded at 63.18% and 36.83%, respectively. The high cost of intermediation is due to the combination of sizable overheads, wider interest margins, and a sufficient supply of relatively low-risk, high-return, and government paper. For the stability of the banking system, the pitiable quality of banks' loan portfolios has become a key source of concern, since the largest interest margins are reflected in the nonperforming loan problem (Bank of Ghana, 2004; Buchs & Mathisen, 2005).

The development in the banking system indicated robust asset growth and improved profitability. This has strengthened the banks' capital position to absorb adverse shocks (Bank of Ghana, 2007). The banking industry total assets in the quarter of 2007 was recorded at GH¢5. 62 billion (Ghana's new currency). This is a yearly growth of 41.6% as compared with 24.0% in March 2006 (GH¢3.97 billion). The significant increase of the total assets was due to the rise in advances. Advance and net loans were GH¢2.63 billion at the end of March 2007. This is a record of 58.1% annual growth compared to 41.8% in March 2006. The expansion of the banking industry size was significantly funded primarily by deposits GH¢3.68 billion. This is a yearly growth rate of 41.9% in March 2007 relative to 26.3% yearly increase in March 2006. The significance of bank loans in the economy has also risen as shown by the rise in the ratio of gross advances of GDP to 24.6% as of March 2007 relative to 16.3% in March 2006. Deposit growth has been high. At the end of March 2007, deposits reached GH¢3.68 billion, compared with GH¢2.59 billion in 2006. This shows an annual growth of 41.9% (Bank of Ghana, 2007). Though this improvement is encouraging, it may be the result of low level of diversification of the Ghanaian financial system. The role of deposits as a means of bank funding continues to be high. The ratio of total deposits to GDP rose to 32% in March 2007 from 22.6% in March 2006. The significant decline in the ratio of nonperforming loans (NPL) to total loans is due to the stable macroeconomic environment which is favorable to borrowers. At the end of March 2007, the NPL ratio remains at 6.9% compared with the 12.9% that was recorded in the same period in 2006. At the same token, the bank's loan loss provisions to gross loans fell to 6.8% in March 2007 from 11.13% in March 2006. The NPL net of provisions for capital also dropped to 0.61% in March 2007 from 7.0% in March 2006.. The achievement in the development of the banking industry's lending activity is primarily due to the stability of the macroeconomic environment (Bank of Ghana, 2007).

The banking sector liquidity ratio remains satisfactory. The liquid asset ratio (core) fell to 19.5% in March 2007 from 20.9% in February 2007. The broad measure also dropped to 43.8% in March 2007 from 46.0% in February 2007. There was a decline in the short-term interbank liabilities in total liabilities from 2.8% in February 2007 to 2.2% in March 2007. Liquidity levels in general may be considered as stable and safe. At the end of the year 2007, banks met the primary reserve requirement of 9.0% (Bank of Ghana, 2007). The Capital Adequacy Ratio (CAR) that measures the solvency of the banking industry remains high, far more than the 10% statutory threshold. The industry CAR increased from 16.6% in February 2007 to 16.9% as of March 2007 and declined to 14.8% at the end of 2007. The industry CAR stood at 16% in March 2006 (Bank of Ghana, 2007).

There has been a substantial improvement in industry profitability. The operating income of the banks' reached ¢1,752 billion in the quarter of 2007 compared to ¢1,333.3 billion recorded in 2006. This represents an annual growth of 31.5% compared with 7.9% in March 2006. This development is due to expansion of net interest income which was recorded at ¢1,165.6 up from ¢889.5 billion. This shows a yearly increase of 31.0% in 2007 compared to 7.8% in 2006. The considerable decline in the default rate may be due to a rise in banks' loan portfolio and the progress in the macroeconomic environment. The structure of banks' income remains stable. Interest income constituted 74.1% of banks' total income and 25.9% for noninterest income in March 2006. Commissions and fee income declined 19.7% as of March 2007, compared with 21% recorded in the first quarter of 2006. Also, noninterest income fell to 76.1% in March 2007 from 77% in March 2006 (Bank of Ghana, 2007).

The investment income component of the total income keeps on falling, possibly exhibiting the fall in banks' investment in these instruments because of their unfavorable returns. The portion of income from loans and advances continued to surgeries, which could be the results of rise in the loan portfolio together with a positive macroeconomic environment leading to improved ability to service loans. The operating expenses of banks rose by 35.1% in March 2007 as to 11.7% in March 2006. The increase was caused by a rise in administrative expenses and staff cost. The administration and staff costs were 28.8% and 18.7% in March 2006 and March 2007 respectively. Net operating income was ¢740.5 billion and ¢584.2 billion in March 2007 and March 2006 respectively. Thus an annual increase of 26.7% in March 2007 relative to a decrease of 24.8% in March 2006. Fall in total provisions (bad debts and depreciation)from 2.7%, together with slower increases in taxes, led to net income of ¢427.2 billion an increase from ¢289.2 billion in March 2006. This resulted in yearly increase of 47.7% in March 2006. There is also a significant increase in the return on equity (ROE) of the banking industry, which

rose to 27.3% in March 2007 from 24.3% in March 2006. However, the total return on assets (ROA), declined marginally from 4.27% in March 2006 to 4.23% in March 2007. This was the consequence of relatively stronger growth in aggregate assets relative to the growth in aggregate net profits.

The efficiency of the banking industry has relatively improved. The marginal growths in the cost-asset and cost-income ratios show the sustained growth in assets and income but not improved cost levels, whose growth has remained comparatively, stable (Bank of Ghana, 2007). The financial expansion over the years in Ghana has been limited by certain factors, which explains the trend of both the indicators for profitability and efficiency the banking system. The development of the financial sector is associated with healthy macroeconomic policies. In light of this, macroeconomic stability is vital to such a development. This is important because over the last decade, Ghana's macroeconomic policies have exhibited periodic financial discipline slippages causing volatile and high inflation, negative real interest rates and large exchange rate swings (Bank of Ghana, 2004). A case of macroeconomic disparity includes the severe terms of trade shock, which occurred between 1999 and 2000. This, together with fiscal imbalances, caused inflationary pressures, exchange-rate depreciation of 15%, and the increase in a substantial domestic government debt. It is instinctive to presume that the size and the quality of financial intermediation have deteriorated because of uncertainty of Ghana's macroeconomic environment. This assumption is evidenced by the low level of overall savings and investment. Between 1996 and 2002 the savings-to-GDP ratio was recorded at 15.9%, while the private investment ratio was 10.6% (Buchs and Mathisen, 2005). On average, Ghana compared poorly to other African countries. The low bank intermediation appears to coexist with a wide array of savings ratios. Another piece of substantiation is the short duration horizon in the overall financial sector. What is nonexistent is Long-term savings as demand deposits constitute one-third of all deposits and bank loans rarely extend beyond one year term.

Another factor that explains bank profitability and efficiency of intermediation in Ghana is the risky lending environments that exist there. This is evident by the high levels of nonperforming loans (NPLs) posted by the banking system over the years. The NPLs as a percentage of total loans rose from an average of 10.62% at the close of the year 2000 to 18.72% at the close of the first quarter of 2004 (Bank of Ghana, 2004). Some state-owned companies' losses led to NPLs in Ghana's banking system.. Moreover, the high degree of NPLs was due to the lack of collaboration among banks in sharing customer information and the lack of any central credit information system (Buchs & Mathisen, 2005). The environments where financial institutions operate were affected by some institutional factors. As shown in Table 5, in Ghana the enforcement of creditors' rights is weak as relative to the Sub-Saharan African average. The increasing rate of bad and doubtful debt, which has become a source of worry for the financial sector, has led to huge loan loss provisions by the banks for extended periods (Bank of Ghana, 2004; Buchs & Mathisen, 2005). Another factor that has contributed to the low and inefficient intermediation in Ghana is the uncompetitive structure of the financial market. According to the Bank of Ghana (2004), the oligopolistic or the monopolistic behavior tendencies have resulted in rising costs of intermediation and diseconomies of management than under the competitive structure. This is evidenced by the wide interest rate margins and spreads that tend to discourage prospective depositors and possible borrowers. The upshot is low lending ratios. The rising cost could be due to recent high investments in banking infrastructure, in particular telecommunications that is prone to interconnectivity problems.

The banks have also identified some structural and policy issues as contributing to the high overhead cost of banking in Ghana. The key among them is the Bank of Ghana reserve requirements, especially the noninterest earnings on primary reserves. A review of the banks' operation by the BOG in 2003 suggested that banks in Ghana are not handicapped by the BOG current reserve requirement structure. The review indicated that banks carried excess reserve, including the primary reserve of about 40% of total deposit liabilities for most of 2003. The reserve requirement structure within the West African sub region suggested that the 9% primary reserve (non-interest-bearing) required of banks that operate in Ghana is quite moderate. In Gambia, banks are required to hold 14% of total deposit liabilities with the Central Bank as a primary reserve. The primary reserve requirement in Nigeria and Guinea are 12.5% and 5.5%, respectively. Ghana's primary reserve is therefore the second lowest among the four West African countries. The banks also contended that National Reconstruction Levy calculated on banks' and other companies' pre-tax earnings constitute a tax on their earnings. The National Reconstruction Levy Act, 2001 (Act 597) imposed a special levy of 10% and 7.5% on the profits (before tax) of banks and nonbank financial institutions, respectively. For all other companies, a levy of 2.5% was imposed on their profits. The 10% special levy imposed on banks' operating profits is admittedly high and underlies the increase in higher operating costs and high intermediation service charges of banks (Bank of Ghana, 2004).

1.2 Comments on Ghanaian Banks Performance

This section comments on the performance of Ghanaians banks over the last twenty years as shown in the banks'

financial data. Our major emphasis is why the performance of Ghanaian commercial banks has not been as well as other banks. Using available sources, including Ghanaian newspapers, journal articles, management discussion on the banks' annual reports and personal interviews with Ghanaian banks' top management; We looked at the results of financial analysis to Ghanaian banking practices. Therefore, our comments are quite subjective.

The negative rate of return of Ghanaian banks over the last five years resulted from several factors. Ghanaian banks have grown within a relatively narrow geographical area to serve the same customers (Ghanaians owned businesses). In addition, the Ghanaian market was threatened by the major foreign banks (e.g., Stanbic high-tech). Market-orientated strategy dominates Ghanaian banks in promoting their growth as shown in domestic loan growth ratio analysis. However, the growth has relied on the expansion of Ghanaian businesses. In as much as demands for bank services are sufficient and there is lack intense competition, the banks may have the opportunity to grow without any creative activities while waiting for their customers. However, Ghanaian markets have become more competitive since the early 1990s. Thus, such passive banking strategy may not be good enough. The market orientation should seek potential customers and more products of value.

The high ratio of overheads to average assets exhibit weak controls in Ghanaian bank's operations. This suggests inefficiencies in the management of Ghanaian banks. The inefficiencies may be due to high turnover in top management of Ghanaian banks and inadequate bank management experience, including professional knowledge of the banks' boards of directors.

The banks in Ghana recorded the highest loan charge-offs and nonperforming loan ratios, which may be the consequence of the banks' weak lending practices. The general suggestion is that, bankers consider the following six aspects of borrowers in considering lending decisions: capital, coverage, capacity, circumstances, collateral and character (Barrett, 1990). These suggestions underscore the significance of cash flow analysis in the loan application evaluation. However, the lending practices of Ghanaian banks' shows weak analysis of borrowers' future cash flows from their businesses. Instead, the banks have depended heavily on the estimated value of borrowers' collateral.

2. Literature Review

Managers have the responsibility to maximize the wealth of shareholders through efficient allocation of resources. Equity, profits, earnings per share, return on assets and investment are used to estimate shareholders' wealth.. The present and future performance could be evaluated by this financial statement information. Empirically, there is no single accounting-based yardstick to explain changes in shareholder wealth (Rogerson, 1997).

Accounting performance has been assessed using NI, EPS, ROA and ROE, and all these quantities fail to explain how much shareholder's wealth has been maximized by management. Conventional measures fail to disclose risks and therefore encourage action that aims to prevent the dilution of returns or maximize earnings. Average profitability could be explained by returns, but shareholder value creation could not be assessed correctly by returns.

The Economic Value Added (EVA) based management decisions could be parallel to decisions that are based on conventional measures. EVA maximization relates to wealth maximization because EVA is dollar-based. In fact, market value added (MVA) is strongly correlated with EVA (Uyemura, Kantor, & Pettit, 1996).

Several bank performance measures exist. Interest margin that is taking expenses from interest income and dividing the result by total assets is a measure of a bank's performance by the U.S. commercial banks (Revell, 1980). Arshadi and Lawrence (1987) employ correlation analysis to assess bank performance using profitability, pricing of bank services and loan market share indexes. However, the financial market does not evaluate bank competitiveness by the above measures. Size affects the banks' efficiency.

In their study of Anglophone SSA countries, Kirkpatrick,Murinde and Tefula (2008) showed the degree of foreign bank penetration is inversely related to X-inefficiency, suggesting that the ownership of Africa foreign banks has contributed to better management and performance of commercial banks. Also, a study by Bonin et al. of eleven transitional economies shows that foreign– owned banks collect more deposits and make more loans than domestic private banks, and are more efficient in the distribution of financial services in those countries (Bonin, Hasan, & Wachtel, 2005) Boubakri, Cosset, Fischer and Guedhami (2005) researched the performance of 81 banks in 22 developing countries after privatization and conclude that foreign bank entry is highly beneficial, since foreign banks have more cautious risk-taking strategies. For the period 1985 to 2001, Panayiotis et al. (2006) used the General Method of Moments (GMM) technique to a panel of Greek banks to show that

bank profitability persist to a moderate extent suggesting that departures from perfectly competitive market structures may not be large. Moreover, all banks-specific determinants, excluding size, affect bank performance in the anticipated way.

A research by Al-Haschimi (2007) on the determinants of bank net interest margin using 10 SSA countries, and applying an accounting decomposition model and panel regressions revealed that credit risk and operational inefficiencies clarify most of the variation in net interest margins across the region, but macroeconomic factors have minimal influence on performance. Teker and Sönmez (2011) used EVA to measure performance of Turkish banks listed in Istanbul Stock Exchange with data from 2006 to 2010. Their results show EVA as the best performance indicator relative to ROA and ROE indicators. Using multiple pool regression model, Haddad (2012) examined the relationship between economic value added (EVA), return on assets (ROA), return on equity (ROE), and capital adequacy ratio. His conclusion was a positive and significant relationship between EVA and stock returns in Jordanian Banks.

3. Data and Methodology

The study used average time series data obtained from the Bank of Ghana. This reflects all the banks, including development banks, newly established banks, but excluding rural banks. The bank data from 28 banks were extracted from the balance sheets and income statements of the banks from 1988 to 2011. Ghanaian banks are required to disclose regular information about activity and business structure in order to comply with accounting standards. Especially, banks report as information on the volume and composition of their assets in terms of cash and balances, loans, tangible and intangible assets, debt securities, financial instruments, as well as deposits, debt certificates, and other financial instruments on the liabilities side. The income statement represents a disappointing number of entries associated with interest income and expenses, fees and commissions, gains and losses on financial assets and liabilities, as well as personnel, administrative, and other operating expenses. The population of public-owned banks and private-ownership banks used in the paper embodies the vast majority of the banking system in Ghana. Hence, the sample is fairly representative of the population of banks. The annual inflation and unemployment rates were obtained from various issues of international financial statistics.

In this paper, we consider the determinant of bank profitability, usually measured by return on asset, (ROA), return on equity (ROE) and in some cases, the net interest margin. Economic value added (EVA) and return on average assets (ROAA) were used as dependent variables in order to make certain comparative performance indicator measurement. EVA is a value-based performance measure that includes a charge for the opportunity cost of capital and hence measures shareholders gain from positive value added over time. ROAA is the bank's total net income divided by the total assets and measures the bank's earnings as compared to all of the resources it had at its disposal (the shareholders' capital plus short and long-term borrowed funds). ROAA is the most rigorous test of shareholders' return. Cost to income ratio (CI), which measure operational efficiency reflects the cost of running the banks as a percentage of income. Higher CI implies the bank would less efficient the bank, which should adversely affect bank profits, depending on the degree of competition in the market. However, normally a negative relationship with performance is expected. Liquid asset (LA), a measure of liquidity is also a measure of deposit plus short-term funding. Bank managers have to determine an optimal balance knowing the risk/return tradeoff of holding a relatively high proportion of liquid assets. Insufficient liquidity might compel banks to borrow at penal rates from the interbank market and /or central bank depending on its reputation. Alternatively, a high ratio could lead to lost profitable investment activities, blurring the sign of the coefficient. Total assets (TA) as a proxy for bank size, tells whether the size of the bank is related to performance. It is well known that small profitable banks exist, making the sign of the coefficient ambiguous. Net loans to total assets (NLA) or the percentage of assets that consist of the loan portfolio may suggest better bank performance because of increases in interest income. But, very high ratios could decrease liquidity and increase the number of marginal borrowers that default. Again, the NLA's effect on bank performance is unclear. Inflation (INFL) measures the overall percentage increase in the consumer price index for all goods and services. The Bank of Ghana uses interest rates to target inflation. Interest rates are increased if inflation is expected to rise, to reduce expenditure and borrowing by firms and households, which could raise default rates. Both will affect a bank's performance adversely.

Stern Stewart Corporation came out with the Economic Value Added (EVA) as an overall yardstick of organizational performance. EVA is both a specific performance measure and the basis for a larger performance measurement framework. According to Stewart (1982), EVA is a financial performance measure that is directly linked to the creation of shareholder value over time. EVA is designed to offer managers better information and motivation to make decisions that will create the greatest shareholder wealth. It is calculated as the difference between an investment's net operating profit after tax (NOPAT) and the cost of funds used to finance the

investment. The cost of funds is calculated as the currency amount of the funds used to finance the investment multiply by the firm's WACC. Following the work of Teker et.al (2011) EVA is computed as below;

$$EVA = NOPAT - [WACC \times Capital\ Investment] \tag{1}$$

where NOPAT is net operating profits after-tax and capital charge is the amount of capital multiplied by the cost of capital (Fogelberg & Griffith, 2000). NOPAT is the operating profits of the company stated such that net income (NI) is adjusted to reveal the current economics of the business (Stewart, 1992). Loan loss provisions, non-recurring events, taxes, and securities accounting are the four major adjustments that are made to calculate EVA for banks (Uyemura, Kantor, & Pettit, 1996). NOPAT is stated below:

$$NOPAT = Operating\ Profit(1 - Tax\ Rate) + Provisions \tag{2}$$

The application of EVA uses the bank's weighted average cost of capital (WACC). The WACC computation is as follows;

$$WACC = w_d k_d (1 - T) + w_p k_p + w_s k_s \tag{3}$$

Where w_d, w_p and w_s stands for the weight of using debt, preferred and common stock, respectively; k_d, k_p and k_s is used for the cost of using each component. Since the tax is deductible, (1-T) adjusts the net cost of debt. Cost of debt is estimated as the average deposit rates for each bank in formula 1.3 while the CAPM model is implemented to figure out the cost of equity (k_s) as illustrated in the equation below.

$$k_s = k_{RF} + \left(k_p - k_{RF}\right)\beta \tag{4}$$

Where k_{RF} is the indicator interest rate of Ghana's Treasury Bonds for the underlined period; k_p represents the average Composite Ghana Stock Exchange index returns in annual basis and beta is the market risk for the stock of each bank. The beta β of a stock is a measurement that describes the relation of its returns to that of the financial market as a whole. Thus, beta measures the correlation of each stock with the financial market movements.

EVA differs from traditional earnings in two significant ways. First, NOPAT echoes operational profits adjusted to reduce accounting conventions that misrepresent economic flows or that distort the proper matching of revenues and expenses. Second, EVA assumes that management must generate enough revenues to cover interest charges, operating expenses, and provide the return that shareholders need as compensation for assuming risks.

EVA measures to advance the way companies could evaluate business strategies to the relative performance of divisions. Many of the management accounting literature centers in these areas. For example, O'Hanalon and Peasnell (1998) and Sheikholeslami (2002) look at EVA as a way of rewarding divisions that make a positive EVA within the firm. Stouhgton and Zechner (2007) provide the economic foundations for economic value added, developing a theoretical model of optimal capital allocation with asymmetric information, and extend it to a multi-divisional firm, where managers are evaluated according to the value they bring to the firm. Using EVA, Fiordelsi (2007) developed with a shareholder value efficiency frontier and with data from the UK, Italy, Germany and France(1997–2007), he concludes that EVA is better than relative cost and profit efficiency measures of performance. On average, banks of these countries are 36% value inefficient. Using panel data and a fixed effects model, Millar's GLS regressions suggests EVA is better than both ROAA and ROAE when employed as the dependent variable.

In order to assess the determinants of bank profits shareholder value creation in the Ghanaian banking system, we specify a model similar to that of Molyneux and Thornton (1992), Berger (1995) and Berger and Bonnacorsi di Patti (2006) where bank performance indicators are regressed against a number of potential determinants. We estimate the following multivariate regression model to deal with the panel dimensions of our data set.

The regression model is given by

$$EVA_t = \alpha + \beta_1 X_t + \beta_2 INFL_t + \varepsilon_t \tag{5}$$

where EVA is economic value added and X_t takes on the following variables, CI, the cost to income ratio, LA the liquid assets (deposits plus short-term funding), TA is the total asset, NLA is the net loan to total assets, INFL the inflation rate, U_{t-1} the unemployment rate, ε_t, d_t, v_t are the error terms and ln is the natural logarithm. Equation (0.6) and (0.7) below are maintained the same variables in equation 0.5 except that the dependent variables are given by return on asset (ROA).

$$ROA_t = \alpha + \beta_1 X_t + \beta_2 INFL_t + d_t \tag{6}$$

This research uses the generalized method of moment (GMM model) to evaluate the determinants of Ghana's

banking performance. GMM estimation was formalized by Hansen (1982). The method is one of the popular methods of estimation for models in economics and finance. GMM does not require full knowledge of the distribution of the data as required by the maximum likelihood estimation (MLE). Only specified moments obtained from an underlying model are required for GMM estimation. In some cases in which the distribution of the data is known, MLE can be computationally demanding relative to the GMM. The lognormal stochastic volatility model is one example.

A significant and unique feature of GMM estimation is that it provides a simplified method of testing the specification of the proposed model for models with less model parameters than moment conditions.

3.1 Data Analysis and Results

Table 3 shows the descriptive statistics for the main variables. The table shows that EVA has the biggest mean (64.95) and the highest standard deviation (14.03) followed by ROA with the mean of (0.04) and standard deviation of (0.03). We also report the descriptive statistics of the bank specific performance yardsticks and macro-economic determinants of the bank performance. All mean and median values are positive for the study period. The summary statistics for the main variables from 1988 to 2011 are presented in Table 3.

Table 3. Descriptive statistics of the dependent and the independent variables in the models

	EVA	ROA	CI	LA	TA	NLA	INFL
Mean	64.95	0.04	1.53	2.25	3.33	0.37	22.35
Standard deviation	14.03	0.03	1.98	3.10	4.84	0.14	13.82
Max	104.84	0.10	6.55	1.06	1.65	0.57	70.82
Min	43.26	-0.05	1.73	1.78	2.38	0.15	8.80
Kurtosis	1.95	3.19	1.29	1.71	2.00	-1.30	5.59
Skewness	1.18	-1.19	1.44	1.60	1.70	-0.10	2.04

Table 4 shows the correlation coefficients among the study variables. Correlation coefficients show a positive and negative significant relation between the dependent variables and the independent variables. Examination of the Pearson correlation matrices tells that there is a high correlation coefficient among the variables, especially TA, NLA and LA, but multicollinearity diagnostics are carried out in the analysis to assess if the observed high correlation among variables is likely to bias the results. Table 4 presents Pairwise correlation coefficients.

Table 4. Pairwise correlation of the factors considered and their p-value in parenthesis

Factors	CI	LA	TA	NLA	INFL
CI	1				
	(0.00)				
LA	0.98	1			
	(0.00)	(0.00)			
TA	0.98	1	1		
	(0.00)	(0.00)	(0.00)		
NLA	0.82	0.81	0.79	1	
	(0.00)	(0.00)	(0.00)	(0.00)	
INFL	-0.47	-0.45	-0.44	-0.49	1
	(0.02)	(0.03)	(0.03)	(0.01)	(0.00)

Table 4 presents the correlation matrix for all the bank specifics parameters we considered and the external macro-economic factors like inflation. The p-values for the various correlations are in parenthesis. Notice that all the bank specific measures are well above 0.95. The net loans to total asset measure records lower correlation with the other measures, but for the most part, even this are above 0.75. The correlation among the bank specific variables indicates we cannot put all the factors together as regressors (avoid multicollinearity). This calls for a pairwise regression with the macro indicator inflation (the regression equations above).

4. Results

Table 5 and 6 show the results of EVA and ROA models. The test confirms that the chosen independent variables are highly explanatory. The F-test was employed to establish whether the regression equation explained a

significantly greater amount of the total bank revenues than would be accounted for by random chance. The t-tests were used to find out the significance of the explanatory variables. Specifically, the cost of income ratio (CI) shows an economics significance relationship with the economic value added yardstick of bank performance (coefficient of 2.98 with t-statistics of 1.92). The cost of income ratio (CI) is positive and significant for all types of performance. This means that more efficient banks are not performing better. This is consistent with the results obtained by Teker et al. (2011). The coefficient LA determines the banks liquidity, therefore the bank manager has to determine an optimal balance given the risk/return tradeoff of holding a relatively high proportion of liquid assets. Insufficient liquidity might compel the bank to borrow at penal rates from the interbank market and/or central bank, depending on its reputation. Alternatively, a high ratio could result in lost profitable investment activities, making the sign of the coefficient blur. The coefficient LA was positive and significant (3.24; 0.009) in the EVA and ROA models respectively. This was consistent with the results obtained by Lin and Zhang (2006). The positive LA in the EVA and ROA model implied that banks may not be facing liquidity challenges which might resulted them not to borrow more at penal rates from the Bank of Ghana.

Size is important in explaining performance as shown by the coefficient for TA, which was positive and significant in all types of performance measurement. This finding compares sharply with most studies of Western banks, where size has a positive influence on performance that is often attributed to the benefits realized through economies of scale. Nonetheless, our result is consistent with the results got by Lin and Zhang (2008). NLA is the net loans/total assets, or the percentage of assets that consist of the loan portfolio. Higher ratios may suggest that better bank performance as a result of increases in interest income. However, very high ratios could also decrease liquidity and increase the number of marginal borrowers that default. The coefficients for NLA were observed to be significant given EVA and ROA as the dependent variable. With EVA and ROA as dependent variable, inflation and unemployment are found to be insignificant with the anticipated signs. This shows that macro variable has any explanatory power in the models, which means that bank's performance seems to improve in either an environment of low or high inflation period. This is consistent with the results obtained by Miller (2005). The results also show that the significance of including macroeconomic variables when testing bank performance is not an issue. To date they have been largely ignored in this literature.

Table 5. Estimates from using EVA as the dependent variable

Models	intercept	log(CI)	log(LA)	log(TA)	NLA	INFL
1	24.38	2.98*				0.10
	(1.07)	(1.92)				(0.43)
2	12.04		3.24**			0.11
	(0.45)		(2.11)			(0.50)
3	11.47			3.20**		0.12
	(0.43)			(2.14)		(0.53)
4	56.94**				21.04	0.01
	(4.45)				(0.89)	(0.05)

Note. * is significance at 10%, ** is significance at 5% and *** is significance at 1%.

Table 6. Estimates from using ROA as the dependent variable

Models	intercept	log(CI)	log(LA)	log(TA)	NLA	INFL
1	-0.089	0.009**				0.001
	(-1.94)	(2.77)				(1.42)
2	-0.126**		0.009**			0.001
	(-2.40)		(3.11)			(1.58)
3	-0.124**			0.009**		0.001
	(-2.35)			(3.07)		(1.58)
4	-0.007				0.085*	0.001
	(-0.25)				(1.74)	(1.03)

Note. * is significance at 10%, ** is significance at 5% and *** is significance at 1%.

Looking at the intercepts at all the models in both Table 5 and 6, obviously the economic value added yardstick

is stronger in determining bank performance comparability to the return on assets. This is reflected in low intercepts recorded in Table 5. Based on the results, EVA is shown to be the best performance yardstick, but if Ghanaian banks expand their off-balance activities, the EVA is likely to become the best reliable measure of performance.

5. Conclusion

Economic Value Added (EVA) is a value based financial performance yardstick, an investment decision tool and a performance measure that shows the absolute amount of shareholder value created. It is calculated as the product of the "excess return" made on an investment or investments and the capital invested in that investment or investments. The paper sheds some light on the determinant of bank performance on the Ghanaian banking system by looking at bank specific and macroeconomic factors. We considered several variables in line with the literature. The paper uses an application of the EVA concept as a performance indicator for Ghanaian banks. Although in variety of studies; ROE and ROA was accepted as an indicator to assess a bank's performance; recent studies propose that economic value added is comparatively more feasible to consider in banking performance ranking. In this research, we try to find out that the financial performance of banks may vary due to the technique used. The objective of the study is to investigate the determinants of banks 'profitability in Ghana for the period 1988 to 2011 using Economic Value Added (EVA) technique to measure performance. The results show that the system GMM model is the preferred method of estimation since it offers a goodness of fit measure. The study also looks at the question of which of three performance measures work best. The result indicates that the economic value added factors captures bank specific performance measure than the return on the asset. A detailed analysis shows that the EVA has a positive impact on cost to income ratio, the liquid assets and the total assets. We discover that both EVA and the ROA as a performance measure are strongly determined by the liquid asset of the banks. This means that banks in Ghana are more short term oriented. The study did not register the macroeconomic variables; inflation and unemployment have a significant effect on bank performance measurement. These results are in line t with the empirical results obtained by Popa et al. (2009) and Teker et al. (2011) using bank's data from the emerging markets.

5.1 Policy Discussion

Banks operating in Ghana have over the years recorded high levels of profits notwithstanding the harsh economic environment that has led to the collapse of other businesses. High bank transaction fees and tariffs as well as higher net interest income contributed significantly to these high profits.

The National Reconstruction Levy calculated that banks' pre-tax earnings constitute a tax on their earnings, which are passed on to bank customers. Contrary to the views expressed by some banks, a comparative analysis or reserve requirement structures revealed that banking operations in Ghana are not unreasonably constrained. The uncertainty associated with Ghana's unstable macroeconomic environment, the risky lending environment and the structure of the banking sector have prevented further financial expansion in Ghana over the years.

It is hoped that Bank of Ghana would, in concert with the fiscal authorities, continue to work toward consolidating and entrenching macroeconomic stability, so that inflation and interest rates would continue their downward trend while maintaining exchange-rate stability. This should hopefully remove distortions in the economy and allow a smooth development of the financial markets through the adoption of new technologies, accompanied by efficiency gains and quality services. To deliver these efficiency gains and quality services, banks must adopt high professional standards, hire and train qualified staff and management teams, and computerize their operations. The banks would then be in the position to not only pay prompt attention to customers' needs, but also shorten the time it takes to transact business at the banks; thereby reducing the public's banking transaction costs. The challenge for both the banks and the central bank (as the regulator) is, to extend financial intermediation and evolve an efficient banking system.

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