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Determinants of Bank Profitability in Ghana

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Abstract

Our study attempts to investigate the relationship between profitability and a set of bank-specific characteristics and macroeconomic factors on foreign and local banks in Ghana between 1999 and 2010. The findings suggest that cost management has an inverse relationship with profitability, bank size and credit risk show a positive association with profitability. The results apply to foreign and local banks as well. Our results suggest that bank management should pay attention to cost maintenance, and prudent risk management to deliver profitability, and perhaps build bigger local banks.

Keywords: Ghana, Bank, Profitability, local, foreign, internal, external

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1. Introduction

The stability of any financial system depends on a strong and effective banking system that aids the allocation of funds among the various economic units in the economy. Closely linked with the foregoing is the fact that a profitable banking sector has the needed absorbers to withstand negative economic shocks. The financial system of Ghana is characterised by the dominant role of the banking sector. With the liberalization of the financial sector of the economy as part of the Financial Sector Adjustment Programme (FINSAP), the banking sector of the economy has in the recent past undergone a significant transformation. Part of the transformation of the industry is the presence of foreign-owned banks in the economy. In this paper we examine the determinants of bank profitability in Ghana. In the second stage of our analysis we examine if there is any difference existing in the factors that determine profit between foreign and local banks. Our study presents a developing country findings, although other works like Berger (1995), Guru, Staunton & Balashanmugam (1999), Ben Naceur (2003), Kosmidou et al. (2006), and Athanasoglou et al. (2006), have studied bank profitability from different economic environment.

The rest of the paper is organized as follows. Section 2 reviews related literature on bank profitability. Section 3 describes the data and the econometric methodology, while Section 4 presents and analyses the empirical results. The last section concludes and offers some policy recommendations.

2. Related literature

There is considerable developed-world literature that attempts to explain bank performance. In a study of the determinants of Greek bank performance, Kosmidou (2008) classifies determinants of bank performance into internal (bank-specific) and external determinants.

2.1 Internal Factors

These are the factors that are considered controllable by the bank's management. The variables include bank assets and liabilities and how they are deployed and managed. The outcome of bank asset-liability management includes expenses, bank size, level of liquidity, loan loss provisioning policy, and capital adequacy. Bank size as a determinant of bank performance is an expectation from the economic concept of economies of scale. Larger banks are expected to report higher profits compared to smaller banks because the cost of producing a unit of banking service to them will be cheaper due to economies of scaled benefits. Goddard et al. (2004) study the performance of European banks across six countries. They find a relatively weak relationship between size and profitability measured by ROE. They also observe that size affects profitability through a decrease in the banks cost of capital. For others like Berger, Hanweck and Humphrey (1987), there is no significant relationship between profitability and size. These results are contradictory to economies of scale expectation. But as Eichengreen and Gibson (2001) show, probably size's impact on profitability is non-monotonic. Eichengreen and Gibson (2001) find that the effect of a growing bank's size on profitability may be positive up to a certain limit. Beyond this point the effect of size could be negative due to bureaucratic procedures that develop with size for example. Thus, the bank size-profitability relationship may be expected to be non-linear.

The operational expense by a bank gives an indication of management efficiency in many

respects. In view of this, cost is expected to have a direct relationship with bank profitability. Molyneux and Thornton (1992) observed a positive relationship, suggesting that high profits earned by firms may be appropriated in the form of higher payroll expenditures paid to more productive human capital. But Abreu and Mendes (2001) conclude that operating costs have a negative effect on profit measures despite their positive effect on net interest margins. These results probably suggest the different components of bank cost have different effects on measures of bank profitability. Employee costs and non-interest expenses might increase with profitability hence a positive relation. But for interest expense it will be inefficiency in terms of funding if that was to increase with profitability. Therefore, the negative relationship observed in Abreu and Mendes (2001) is an indication of the interest expense component of bank costs.

Bank capital serves as a cushion to depositors in case of bank failure. The argument is that the higher bank capital allows the banks to take on more risk, and hence to deliver the higher profits. Empirically, Staikouras and Wood (2003) find positive link between greater equity level and profitability among EU banks. Similar results are reported in Havrylchyk et al. (2006) and Goddard et al. (2004). These studies find a positive relationship between capital-asset ratio (or bank capital) and bank's earnings (or profitability).

Another bank-specific factor also important for bank performance is liquidity. Managing liquidity is an important part of a bank's intermediation role. Liquidity risk, arising from the possible inability of a bank to meet withdrawal need of customers or to accommodate decreases in liabilities or to fund increases on the assets' side of the statement of financial position, is considered an important determinant of bank profitability. The more liquid a bank is the more comfortable should it be for customers to transact business with the bank which should in the long run lead to increased profitability. Unlike Bourke (1989), Molyneux and Thorton (1992) find a negative correlation between liquidity and profitability levels. Credit risk cannot be ignored in bank performance assessment. Empirically, Miller and Noulas (1997) point out that credit risk will have a negative impact on profitability since the higher the level of high-risk loans, the higher the level of unpaid loans. Poor asset quality and low levels of liquidity constitute the two main causes of bank failure.

Individual bank market power is also factor that is important for profitability. Individual bank market power measured as a percentage of total industry deposit held by a bank. In economic theory the expectation is that the higher the percentage of a bank's deposits to the industry the higher the bank's profit. The amount of deposits held by the bank allows it flexibility in lending and other investments, hence the expectation of a positive relation between the percentages of industry deposits held by a bank and the bank's profitability.

2.2 External Factors

These are factors that affect a bank's performance and are out of the bank's control. In this regard the responsibility is on management to employ strategies and policies to adapt to them. External variables trace the effect of the macroeconomic environment on banks' performance. The external factors are of two categories -industry specific and macroeconomic factors.

2.2.1 Industry Specific Factors

Of particular importance in terms of industry factors that is important for individual bank

performance is the level of competition in the industry. Competition in the banking literature is largely about the concentration of market power in the industry. Bank concentration is defined as the number and size of banks in the market. The term has emerged from the structure-conduct-performance theory in the industrial organization literature, which is the proposition that market concentration fosters collusion among firms. High market concentration is expected to reduce profitability for the less powerful industry firms through price setting powers and monopolistic profits enjoyed by those that wield greater market power.

2.2.2 Macroeconomic Factors

Macroeconomic factors are those factors that reflect the economic setting within which a bank operates. These factors are variables that reflect the performance of the economy as a whole. From theoretical literature, gross domestic product (GDP) is a measure of total value of economic activity within an economy over a period of time. The growth of GDP has significant positive effect on the profitability of the financial sector. The link is that, higher economic growth encourages banks to lend more and permits them to charge higher margins, as well as improving the quality of their assets. In view of this we expect GDP to have a positive effect on banks profitability irrespective it being a local or foreign bank. Neely and Wheelock (1997) use per capita income as measure of total economic performance and suggest that this variable exerts a strong positive effect on bank earnings. Also, Demirguc-Kunt and Huizinga (1999) show that rapid economic growth increases bank profitability in a large number of countries.

Monetary policy outcomes have a direct effect on banks through the level of interest rates in the economy. Empirical evidence on the relationship between interest rates and bank profitability is not conclusive. Declining interest rates could leave banks' intermediation spread intact, as changes in interest rates are found to pass through to lending and deposit rates in US and also in Hong Kong (Peng, et al., 2003). Other cross-country studies have found either a positive relationship between interest rates and bank profitability (Demirguc-Kunt and Huizinga, 2000) or a mixed relationship (English, 2002).

According to Revell (1979) the effect of inflation on bank profitability depends on whether banks wages and other operating expenses increase at a faster rate than inflation. A widely used proxy for the effect of the macroeconomic environment on bank profitability is inflation. An inflation rate fully anticipated by the bank's management implies that banks can appropriately adjust interest rates in order to increase their revenues faster than their costs and thus acquire higher profits if not the bank is exposed to the negative effect of unanticipated effects of inflation on its revenue. Studies like Bourke (1989), and Molyneux and Thornton, (1992) observe a positive relationship between inflation and bank performance.

2.3 Foreign or Local Banks

Evidences from contemporary banking literature suggest that foreign banks in developing countries outperformed their domestic bank counterparts in terms of efficiency, productivity, and profitability (Bhattacharya et al., 1997; Sathye, 2001; Hasan and Marton, 2003; Isik and Hassan, 2003; Ataullah et al., 2004). In the emerging markets foreign banks turn to be more profitable as captured due to cost management advantages as a result superior operational

setup obtained from their home countries (see Bonin, Hasan & Wachtel, 2005). Another reason is that foreign banks in emerging markets and developing countries such as Ghana may bring expertise in risk management and a better culture of corporate governance, rendering foreign banks more efficient (Bonin et al., 2005). Other researchers such as Molyneux and Seth (1998) look at the performance of foreign banks in the United States (1987-91) and find risk adjusted capital ratio to be a key determinant of these banks' performance. Williams (2003) considers the determinants of the performance of foreign banks in Australia for the period 1989-93. With ROA as the dependent variable, William (2003) finds that foreign banks with a full Australian license have a significantly lower market share. The results in William (2003) reiterate foreign banks less profitable than domestic banks by Seth (1992), Nolle (1995) and Sathye (2001). There is an indication in these results that the differences in bank performance due to a bank being local or foreign differs in between developed country markets and markets such as Ghana's is inconclusive.

3. Method

We estimated the following regression model for the local banks and foreign banks because the bank specific factors may be correlated with a foreign banks dummy variable.

$$\Pi_{it} = \varphi + \beta' SPEC'_{it} + \beta' INDUS'_{it} + \beta' MACRO'_{it} + \varepsilon_{it} \quad (1)$$

In equation (1) Π is a measure of profitability. Unlike other studies, the researcher used a composite measure of profitability. The composite includes ROEA, and ROAA, for bank *i* at time *t*. All β are coefficient vectors. *SPEC'* is a row vector of bank specific factors that impacts on profitability, which includes size, liquidity, expenses, credit risk, and capital adequacy. *INDUS'* is a row vector of industry related factors that includes concentration. *MACRO* is a row vector of macroeconomic factors, which includes GDP (or Real GDP growth), inflation (CPI), and growth in money supply.

Table 1. Definition of variables

Variable	Definition	Measurement
DEPENDENT		
ROEA	Return on equity	Net profit over total equity
ROAA	Return on average assets	Net profit over the beginning and ending assets
BANK SPECIFIC		
CRISK	Credit risk	Loan loss to total loans
SIZE	Bank size	The natural log of total assets
LIQD	Liquidity	Total assets to total loans
LISTED	Listed Banks	Banks listed on the stock market
EXPS	Expenses	Total non-interest expense to total assets
FOREIGN	Ownership	Bank that is foreign owned
PROD	Productivity	Profit per employee
INDUSTRY		
CARSQ	Capital Adequacy	Market Structure
HHIAST	Herfindahl-Hirschman Index	To measure the level of competition
MKT DEPTH	Market Depth	Banking industry development
MACRO		
INFL	Inflation	Year-to-year change in the CPI
M2	Money supply growth	Year-to-year change in money supply (M2)
GDP	Gross Domestic Product	The real gdp to measure the size of the economy
MKT DEV	Market Development	Financial market development

4. Empirical Results

4.1 Descriptive Statistics

Table 2 below shows descriptive statistics of variables in the empirical analysis. The HHIAST value is particularly important. It shows that over the period 1999 to 2009 competitions has increased in the Ghanaian banking sector. The result is different from the lack of competitiveness noted by Mathisen and Buchs (2005) using data over the period 1998 -2003.

The HHIAST mean value of 0.9748 is a sign of a competitive industry. Lower HHIAST values suggest little concentration in the banking industry in Ghana. Perhaps the changes to the capital requirements and the new foreign entrants have increased competition in the Ghanaian industry.

The LIQD statistics are also important for it reflects the proportion of deposits lent out and the extent of money creation done by Ghanaian banks. The LIQD maximum of 0.8253 indicates money creation by banks' lending more than the deposits available. The mean LIQD indicates that 43% of customer deposits are being lent out as loans. With respect to CRISK there is a minimum of almost zero percent of loans written off but the maximum of 11.88% is worrying. But the mean suggests that on average during the sample period, 1.7% of loans are written off as nonperforming. The average operating expenses to assets ratio are about 5.6% and a maximum of 25%, which indicates the skewness in the expense variables. The average CAR of 12.5% and the maximum of 55% suggests strong capitalization of banks and also the presence of new entrants in the industry. Bank size over the sample period saw an average of 18.83, with a minimum size of 15.25 and a maximum size of 21.47%. The productivity results show an average 11.09% profit per employee, there was also a maximum value of 13% and a minimum performance of 8.81%, the variability of the performance measured by the standard deviation was 0.83 on the average. The market structure as measured by the CARSQ has been very unstable with a standard deviation of 0.32, with a mean of 0.02and a maximum value of 0.30, the minimum was almost zero.

On the external variables, the average inflation over the sample period is 17.28% and a maximum of 32.9%. The minimum of 10.7% reflects the figures of the latter part of the sample period. Money supply growth also shows an average of 35.6% over the sample period with a minimum of 14% and a maximum of 56.5% over the sample period. The economy of Ghana as captured by the rgdp was 5.8% on the average, this same period saw minimum economic growth of 1.3% and a maximum growth of 8.4%. The banking industry development can be said to be very unstable and not easily predictable as shown in a standard deviation value of 2.54 for mktdepth, with maximum value of 9.41, an average of 5.15 and a minimum of 1.96. The financial market development indicator of mktdev revealed an average of 5.07, there was a minimum of 3.73 and a maximum value of 7.57 for the period of study.

Table 2. Descriptive statistics of the variables. Data covers the period 1999-2010 and sourced from the Ghana Bankers Association.

Variable	Mean	Std Dev	Min	Max
liqd	0.4356	0.1755	0.0036	0.8253
size	18.8383	1.3515	15.2481	21.4682
car	0.1247	0.7438	(0.1256)	0.5494
hhiast	0.0975	0.0290	0.0600	0.1475
foreign	0.3500	0.4781	-	1.0000
listed	0.1500	0.3579	-	1.0000
inf	0.1728	0.0649	0.1070	0.3290
m2grow	0.3567	0.1169	0.1410	0.5650
rgdp	0.0581	0.0136	0.0370	0.0840
mktdepth	5.1504	2.5472	1.9682	9.4318
mktdev	5.0747	1.3448	3.7341	7.5771
crisk	0.0170	0.0186	-	0.1188
exps	0.0569	0.5286	(0.1407)	0.2456
prod	11.0993	0.8303	8.8119	13.3278
carsq	0.2106	0.0316	0.0008	0.3018
lagroaa	0.0134	0.1904	(0.1070)	0.0883
lagroea	0.3440	0.0531	(0.3018)	0.2275

The correlation between the independent and the dependent variable shows a low level correlation existing between the variables and also having majority of the explanatory

variables in the estimated regression being significant implies no collinearity or no multicollinearity in the data. The details of this can be seen in Table 3 presented below.

Table 3. Correlation Matrix for variables over the sample period 1999-2010

Values with * are significant at 5% confidence level.

	lagroaa	lagroea	liqd	size	car	exps	foreign	listed	carsq	prod	inf	m2grow	rgdp	mktdepth	mktdev	crisk	hhiast
lagroaa	1.0000																
lagroea	0.9718*	1.0000															
liqd	-0.0360	-0.0702	1.0000														
size	0.1845	0.1494*	0.5857*	1.0000													
car	0.2272*	0.2185*	-0.1208	-0.0612	1.0000												
exps	0.0792	0.1040	-0.2100*	-0.3973*	0.1742*	1.0000											
foreign	0.0221	0.0240	-0.1104	0.2082*	0.0701	-0.1366*	1.0000										
listed	0.1527*	0.1474*	0.0289	0.2733*	-0.0376	0.0065	-0.0147	1.0000									
carsq	0.0731	0.0421	-0.1672*	-0.1505*	0.8950*	-0.1464*	0.0474	-0.0852	1.0000								
prod	0.1240	0.0937	0.4851*	0.7136*	0.1080	-0.4861*	0.3375*	0.0562	0.0697	1.0000							
inf	0.1916*	0.1716*	-0.2126*	-0.3215*	-0.0009	0.1882*	-0.0324	0.0459	0.0194	-0.4207*	1.0000						
m2grow	0.1896*	0.1982*	-0.2092*	-0.3253*	-0.0845	0.1610*	-0.0164	0.0483	-0.0604	-0.4447*	0.4931*	1.0000					
rgdp	-0.2168*	-0.2237*	0.4465*	0.4347*	-0.0272	-0.3234*	0.0822	-0.0531	-0.0373	0.4978*	-0.5911*	-0.3345*	1.0000				
mktdepth	-0.1776*	-0.2191*	0.5545*	0.5236*	0.2016*	-0.5344*	0.1377*	-0.0705	0.2163*	0.5937*	0.2785*	-0.2579*	0.3879	1.0000			
mktdev	-0.2150*	-0.2577*	0.5627*	0.5328*	0.1978*	-0.6077*	0.1403*	-0.0677	0.2064*	0.5888*	-0.2937*	-0.2447*	0.5059*	0.9530*	1.0000		
crisk	-0.1610*	-0.2127*	0.0637	-0.0441	0.1160	-0.0695	-0.2518*	-0.0521	0.0333	-0.1425*	0.1424*	0.0753	-0.1387*	-0.0086	-0.0103	1.0000	
hhiast	0.2764*	0.3098*	-0.5848*	-0.5955*	-0.1299	0.3970*	-0.1144	0.0801	-0.1223	0.7024*	0.6021*	0.6536*	-0.7133*	-0.8043*	-0.8075*	0.1064	1.0000

	(1) ROAA	(2) ROEA
VARIABLES	roaa	roea
lagroaa	0.1866***	
	(2.691)	
liqd	0.0037	-0.0065
	(0.652)	(-0.520)
size	0.0026***	0.0078***
	(3.118)	(4.115)
crisk	-0.2891***	-0.8172***
	(-3.254)	(-3.865)
exps	-0.0106	-0.0234
	(-0.430)	(-0.354)
foreign	-0.0041**	-0.0121**
	(-1.967)	(-2.489)
listed	-0.0026**	-0.0089**
	(-2.014)	(-2.377)
Car	0.1458***	0.5458***
	(10.810)	(5.590)
carsq	-0.3440***	-1.3188***
	(-9.010)	(-5.078)
prod	0.0077***	0.0203***
	(3.843)	(4.137)
Inf	0.0059	0.0343
	(0.665)	(1.268)
m2grow	0.0056	0.0190
	(0.406)	(0.504)
rgdp	-0.2355*	-0.6484**
	(-1.812)	(-2.122)
mktdepth	-0.0035***	-0.0105***
	(-3.228)	(-3.490)
mktdev	0.0047**	0.0159***
	(2.314)	(3.049)
hhiast	0.1707	0.5842
	(1.139)	(1.530)
lagroea		0.1296
		(1.596)
Constant	-0.1410***	-0.4192***
	(-3.672)	(-4.348)
Observations	186	186
Number of index	26	26

R-squared	0.770	0.815

Robust z-statistics in parentheses, *** p<0.01, ** p<0.05, * p<0.1

This section of the study presents an analysis of the results generated for this study as specified in the method adopted for the study.

4.2 Internal Determinants

Liquidity (LIQD) focuses on the banks holding near cash items to meet withdrawal needs of customers, in the study this is not significant under both measures of profitability although it reported a positive relation with ROAA and a negative relation with ROEA. Bank size in literature has been found to have a strong impact on bank performance, from the results presented in this study the size of banks in Ghana plays a highly positive significant role in determining banks performance, bigger assets size tend to report higher performance as captured in the relationship presented on ROAA and ROEA, this can be attributed to the economies of scale that such banks enjoy. CRISK measures the exposure that banks can take on high exposure, the higher the CRISK the lower the expected profit as non bad loans would have to be written off against banks income, for banks in Ghana between the period 1999 to 2010, evidence from this work supports this assertion as there is a high significant negative effect of CRISK on banks profit. Expense management is a core issue in reporting good performance, literature presents direct and indirect views on the effect of expense on profitability, and the case of Ghana supports the latter view of expense on bank performance even though it is not significant.

The ownership structure of the banks measured by FOREIGN has an inverse relations with performance, this is counter intuitive when compared to literature on developing markets, perhaps the recent influx of foreign banks are yet to turn out the needed returns to compensate for their investment, these foreign banks can be said to be penetrating the market and would in due course compete effectively with the local banks and would not be at a disadvantage on the learning curve on the Ghanaian banking landscape.

We tested for listing as a variable on profitability, the conclusion on this that listed banks posit a fall in profit compared to the unlisted ones. The reason that can be ascribed to the regulatory nature of listed banks because of strict regulation and strict standard in estimating some expense provision and revenue items, the profitability of listed banks shows a lower profit results reported as listed banks tend to be more prudential in estimating profits than unlisted banks.

Bank capital as measured by capital CAR serves as a cushion to depositors, our results show a significant positive relationship with bank performance, meaning banks with high level of owner capital tend to make more profit, this can be explained that, owners of these banks tend to demand more from managers because of their stake in the banks, and also business tends to go to banks that have owners contributing much of the capital needed to assure clients of owners commitment thereby making much profit. Further we employed the square of the capital adequacy ratio and its influence on profitability, this is a quadratic term to measure the nonlinear relationship between market structure and profitability, our study reveal a negative and significant relationship between the CARSQ and profitability of banks in Ghana. The conclusion on this effect is that the relationship between market structure and bank

profitability is U-shaped and cannot be considered as linear.

Employees are paid to work for the organization, productivity was measured by PROD, the profit per employee for each bank for the period of the study, and we reveal the fact that productivity has a strong direct relationship with bank profitability in Ghana, implying that having a good work force and strong supervision leads to more profit for banks.

4.3 External Determinants

4.3.1 Industry

Our results also show that in Ghana MKTDEPTH does not support bank performance as an inverse relationship exist between the market depth and bank performance pointing to the fact that as the Ghanaian banking industry develops banks performance would be decreasing implying that competition is taking away the monopolistic profit initially enjoyed by the big banks. It must be pointed out that MKTDEV is positive and highly significant for ROEA than for ROAA implying that as the financial market of Ghana develops banks are benefiting by introducing new products that is bring higher marginal revenue that the marginal cost of these new products. We state from our study that market concentration does not have a strong impact on bank profitability in Ghana. The results for HHIAST shows a positive effect of bank competition on profitability although it is not significant in the case of our study.

4.3.2 Macro

These are variables that management must adapt to and closely monitor for the bank to keep its going concern status, from our study INFLA plays an insignificant role in banks profitability as all two measures of profitability had a positive but a weak relation with inflation likewise M2GROW. RGDP on the other had has a negative effect on bank performance in Ghana although it is more significant in the case of ROEA, one explanation can be the quality of loans that the bank make, if the loans are of bad quality, then as the Ghanaian economy grows bad loans have to be written off which tend to affect the banks assets and owners equity thereby reducing profits.

4.4 Discussion

In relation to similar studies, our results shows a strong and significant relationship between banks size and profit in contradiction to the works of Berger, Hanweck and Humphrey (1987) who concluded that a weak relations exists. We provide evidence to support the claim of Abreu and Mendes (2001) that expense has a negative effect on profitability. On the issue of bank capital our study falls in line with that of Staikouras and Wood (2003), Goddard et al. (2004), and Havrylchyk et al. (2006) that there is a positive link between bank capital and bank profitability. For liquidity although there is a weak relation in our study on bank performance for ROEA we support the work of Molynexu and Thorton (1992) that negative relation exits. On CRISK we present a strong support to the works of Miller and Noulas (1997) that there is a negative relations between bank profit and credit risk. This study does not offer support for Bhattachary et al.,1997, Sathye, 2001,Hassan and Marton, 2003, Isik and Hassan, 2003, Ataullah et al. (2004) that foreign banks tend to perform better than local banks but rather tows the line of Seth (1992), Nolle (1995), and William (2003), that foreign banks are less profitable than domestic banks for the recent period that our work covered. Although there is a positive effect of inflation on bank performance as in the work of Molynexu and

Thorton (1992) the relationship is weak. In contradiction to Demirguc-Kunt and Huizinga (1999) we find a negative association between bank profit and RGDP. For the effect of financial development, our MKTDEPTH revealed a positive relation confirming the work of Wum et al. (2007) that a developed financial sector improves bank performance.

5. Conclusion

Our results show that default risk exposures lead to lower bank profits. Also, bank size and liquidity contribute to bank profitability for the flexibility and risk bearing capacity these variables entail for a bank. Contrary to intuition our measures of concentration is positively related to bank profitability. But in line with expectations we find that banking development leads to lower profits for banks. Such an effect can be regarded a competitive effect. Our results also suggest complementarity between the Ghana stock market and the banking sector. The implication is that banks still remain significant sources for external funding for businesses in Ghana. The economic environment for banks in Ghana plays a crucial role in profitability as revealed in literature and the empirical results generated make it imperative that managers of the economy keep a close eye on the impact of their policies on the banking industry in their attempt to grow the economy.

References

Abreu, M., & Mendes, V. (2001). Commercial bank interest margins and profitability: evidence from some EU countries. Paper presented at the Proceedings of the Pan European Conference jointly organized by the IEFS-UK & University of Macedonia Economic & Social Sciences. Thessaloniki, Greece, May 17–20, 2001.

Ataullah, A., Cockerill, T. & Le, H. (2004), "Financial liberalization and bank efficiency: a comparative analysis of India and Pakistan", Applied Economics, Vol. 36, No. 17, pp. 1915-24.

Athanasoglou, P.P., Brissimis, S.N., Delis M.D. (2006). Bank-specific, industry specific and macroeconomic determinants of bank profitability. *International Financial Markets, Institutions and Money*, Vol. 18, pp. 121-136.

Ben Naceur, S. (2003). The determinants of the Tunisian banking industry profitability: Panel evidence. Paper Presented at the Proceedings of the Economic Research Forum (ERF) 10th Annual Conference, Marrakesh–Morocco. December 16–18, 2003.

Berger, A.N. (1995). The relationship between capital and earnings in banking. Journal of Money Credit and Banking, Vol. 27, pp. 432–456.

Berger, A.N., Hanweck, G.A., & Humphrey, D.B. (1987). Competitive viability in banking: scale, scope and product mix economies. *Journal of Monetary Economics*, Vol. 20, pp. 501–520.

Bhattacharya, A., Lovell, C.A.K. and Sahay, P. (1997), "The impact of liberalization on the productive efficiency of Indian commercial banks", *European Journal of Operational Research*, Vol. 98 No. 2, pp. 332-45.

Bonin, J., Hasan, I.,& Wachtel, P. (2005). Bank performance, efficiency and ownership in transition countries. *Journal of Banking and Finance*, Vol. 29, pp. 31–53.

Bourke, P. (1989). Concentration and other determinants of bank profitability in Europe, North America and Australia. *Journal of Banking and Finance*, Vol. 3, pp. 65-79.

Bourke, Philip (1989), "Concentration and Other Determinants of Bank Profitability in Europe, North America and Australia", *Journal of Banking and Finance*, No. 13, pp. 65-67.

Davydenko, Antonina (2010) "Determinants of Bank Profitability in Ukraine," *Undergraduate Economic Review*: Vol. 7: Iss. 1, Article 2.

Demirguc-Kunt, Asli, and Harry Huizinga, (2000) *Determinants of Commercial Bank Interest Margins and Profitability: Some international evidence*, The World Bank Economic Review, Washington DC. Vol. 13, No. 2, p.379 - 408.

Demirgüç-Kunt, A. and Huizinga, H. (1999) "Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence". *World Bank Economic Review*, Vol. 13, No. 2, pp. 379-408.

Eichengreen, B., & Gibson, H.D., (2001). *Greek banking at the dawn of the new millennium*. CERP Discussion Paper 2791, London.

Emery, John T. (1971), "Risk, Returns, and the Morphology of Commercial Banking",*Journal of Financial and Quantitative Analysis,* Vol. 6, No. 2, March, pp. 763-776.

English, William, B. (2002) *Interest Rate Risk and Bank Net Interest Margins*, BIS Quarterly Review, December.

Fraser, Donald R. and Peter S. Rose (1972), "Bank Entry and Bank Performance", *Journal of Finance*, Vol. 21, No. 1, pp. 65-78.

Goddard J., P. Molyneux, and J. Wilson (2004), "The profitability of European banks: A cross-sectional and dynamic panel analysis", *The Manchester School*, Vol. 72, No. 3, 363-381.

Guru, B.K., Staunton, J., & Balashanmugam, B. (1999). *Determinants of commercial bank profitability in Malaysia*. Paper presented at the Proceedings of the 12th Annual Australian Finance and Banking Conference, Sydney, Australia. December 16–17, 1999.

Hassan, M.K. and Bashir, A.H.M. (2003). *Determinants of Islamic banking profitability*. Paper presented at the 10th ERF Annual Conference, Morocco, 16-18 December.

Havrylchyk, O. & Jurzyk, E (2006). Profitability of foreign banks in Central and Eastern Europe: Does the entry mode matter?", *Bank of Finland, BOFIT Discussion Papers 5*.

Heggested, Arnold A. (1979), "Market structure, competition, and performance in financial industries: A survey of banking studies", in *Issues in Financial Regulation,* Franklin R. Edwards (ed.), New York: McGraw-Hill, pp. 449-490.

Kosmidou, K., Pasiouras, F., Doumpos, M., & Zopounidis, C. (2006). A Multivariate analysis of the financial characteristics of foreign and domestic banks in the UK. OMEGA: *The International Journal of Management Science*, Vol.34, No. 2, pp. 189–195.

Kosmidou, K. (2008). "The determinants of banks' profits in Greece during the period of EU financial integration", *Managerial Finance*, Vol. 34, No. 3, p. 146-159.

Kwast, M. L. & John, T. R. (1982). Pricing, operating efficiency and profitability among large commercial banks. *Journal of Banking and Finance*, Vol. 6, No. 2, June, pp. 233-254.

Miller, S.M. & Noulas, A.G. (1997). Portfolio Mix and Large-bank Profitability in the USA. *Applied Economics*, Vol. 29, No. 4, pp. 505-512.

Molyneux, P. & Seth, R. (1998). Foreign banks, profits, and commercial credit extensions in the United States. *Applied Financial Economics*, Vol. 8, pp. 533-539.

Molyneux, P. & Thornton, J. (1992). Determinants of European bank profitability: A note. *Journal of Banking and Finance*, No. 16, pp. 1173-1178.

Neely, M.C., Wheelock, D.C., 1997. Why does bank performance vary across states? Review, Federal Reserve Bank of St. Louis 0, pp. 27-38.

Nolle, D. E. (1995). Foreign bank operations in the United States: cause for concern? In: Gray, H.P., Richard, R.C. (Eds.), International finance in the new world order. Pergamon, London, pp. 269 – 291.

Peng, W., Lai, K., Leung, F., & Chang S. (2003) *The impact of interest rate shocks on the performance of the banking sector*, Hong Kong Monetary Authority. Research Memorandum 07/May 2003.

Sathye, M. (2001), "X-efficiency in Australian banking: An empirical investigation. *Journal of Banking & Finance*, Vol. 25, No. 3, pp. 613-630.

Seth, R. (1992). *Profitability of foreign banks in the US*. Federal Reserve Bank of New York Research Paper No. 9225, December 1992.

Short, B.K. (1979). The relation between commercial bank profit rates and banking concentration in Canada, Western Europe and Japan. *Journal of Banking and Finance*, Vol. 3, pp. 209–219.

Short, B. K. (1979). The relation between commercial bank profit rates and banking concentration in Canada, Western Europe and Japan. *Journal of Banking and Finance*, No. 3, pp. 209 219.

Staikouras, C., & Wood, G. (2003). The determinants of bank profitability in Europe. Paper presented at the Proceedings of the European Applied Business Research Conference. Venice, Italy, June 9 – 13, 2003.

Vernon, J.R. (1971). Separation of Ownership and Control and Profit Rates, the Evidence from Banking: Comment. *Journal of Financial and Quantitative Analysis*, Vol. 6, No. 1, January, pp. 615-625.

Williams, B. (2003). Domestic and international determinants of bank profits: Foreign banks in Australia. *Journal of Banking and Finance*, Vol. 27, 6, pp. 1185–1210.

Wum, Hsiu-Ling, Chen, Chien-Hsun, Shiu, & Fang-Ying (2007). The impact of financial development and bank characteristics on the operational performance of commercial banks in the Chinese transitional economy. *Journal of Economic Studies*, Vol. 34, No. 5, pp. 401-414.