Global Journal of Management and Business Research: C Finance
Volume 18 Issue 6 Version 1.0 Year 2018
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

Bank Recapitalization in Ghana, Who Benefits the more?

By Stephen Yalley, Hanania Djibom, Eric Boachie-Yiadom & Mark Edem Kunawotor
University of Ghana

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GJMBR-C Classification: *JEL Code: G20*

Strictly as per the compliance and regulations of:

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I. Background of Study

Banks play an important role in the life of every country (Akinlo & Egbetunde, 2010; Lebe, 2016) because they help to channel funds from deficit spending units to surplus spending units (Ziramba, 2008). Banks can only do this function well, if they have adequate capital backing supported by deposit mobilization. Indeed, the global financial crisis that rocked the world in 2006/2007 was partly due to insufficient quality bank capital. The Bank of Ghana (BOG) ensures banks in Ghana have sufficient capital banking to prevent a similar occurrence by revising the minimum capital requirement from time to time[1]. This is paramount as capital might have impaired because of bad loans (Odonkor, Osei, Abor, & Adjasi, 2011), poor returns on other assets or both.

Author α σ: Department of Finance, University of Ghana.
e-mails: syalley@st.ug.edu.gh, djhanania@gmail.com
Author ρ: Department of Finance, University of Professional Studies.
e-mail: boachie.eric@upsamail.edu.gh
Author ω: Department of Finance, Zenith University College.
e-mail: markedernk@yahoo.com

[1] The BOG has implemented in recapitalization directives in 2003, 2009, and 2012. The BOG has set a new minimum capital requirement of GH¢400 million for banks. All banks in the country must meet this minimum capital requirement by the close of 31st December 2018.

The Bank of Ghana (2017a) reports that the capital adequacy ratio (CAR) of the banking industry declined by 2.1 percentage points between October 2016 and 2017 due to loan impairment. The recent wave of mergers and acquisitions[2] (Ablordeppey, 2015; Barnor & Adu-Twumwaah, 2015) and the take-over of two previously vibrant domestic banks, UT Bank and Capital Bank, by the GCB Bank (Bank of Ghana, 2017b) are vivid reminders of how under-capitalization could undermine the stability of the financial sector and the economy.

However, some scholars have criticized the practice of setting a minimum capital requirement for banks for exposing banks to undue liquidity crisis through increased funding costs and low profits (Ibrahim, Mohammed, & Gani, 2012; Okpara, 2011). Other scholars disagree (Adegbaju & Olokoyo, 2008; Dauda, Ibrahim, & Ganiyu, 2016). The debate about the impact of recapitalization on bank performance requires the BOG to find out the real effect of such a decision on banks in Ghana. Additionally, studies on bank capitalization and performance in Ghana have tended to focus on the relationship between capital and performance (Agyei, 2010; Awunyo-Vitor & Badu, 2012; Kumi, Amoamah, & Winful, 2013) and competition (Akomea & Adusei, 2013). Furthermore, none of these studies has investigated the impact of recapitalization on bank performance as in the fashion of Adegbaju and Olokoyo (2008), Ibrahim et al. (2012), Dauda et al. (2016), and Okpara (2011). We argue that the impact of new regulatory capital requirement on foreign banks is different from domestic banks.

The primary aim of this study is to compare the impact of the recapitalization directive by BOG on bank performance of foreign and domestic banks in Ghana. Section 2 reviews the relevant literature. Section 3 explains the statistical method used. Section 4 discusses the findings. Section 5 presents conclusions and recommendations.

II. Literature Review

a) Theoretical Review

Expected Bankruptcy Cost Hypothesis: This hypothesis derives from the Modigliani and Miller

[2] Between TTB Bank and Eco-bank Ghana Limited; Intercontinental Bank and Access Bank Ghana Limited; International Commercial Bank and FBN Bank; HFC Bank and Republic Bank of Trinidad and Tobago.

Proposition II or MM II (Modigliani & Miller, 1963). The MM II avers that firms can increase their value by borrowing and enjoying high tax benefits. However, leverage beyond a certain point erodes the tax benefits and exposes firms to financial distress and bankruptcy. Therefore, firms seek to find a balance between the appropriate levels of leverage which minimizes this risk. Hence, in times of high likelihood of bankruptcy, banks hold more equity to cushion them against possible financial distress and bankruptcy (Berger, 1995). This enables the bank to finance its assets at lower interest rates and thus increase profits while using the excess capital to as insurance against future adverse developments (Athanasoglou, Brissimis, & Delis, 2008). Therefore, an increase in bank capital may be an attempt to pre-empt a possible crisis associated with high leverage. So, an increase in banks' minimum capital requirement is anticipated to lead to an improvement in performance.

Signaling Theory: Ross (1977) popularized the signaling theory by arguing that firms would increase the amount of equity in their capital mix if they are optimistic about the future. Firms, therefore increase their equity holding to signal their optimistic expectations for the future to the public (Berger, 1995). When the central bank raises the minimum capital requirement, it gives an indication that banks that meet this requirement can now undertake more profitable investments ventures in the future. This assurance reduces the demand for bank deposit and lowers interest rates. The resultant low cost of borrowing leads to increased bank profitability.

Risk-Return Hypothesis: This hypothesis is grounded in the economic theory of the relation between risks and returns. Rational investors expect yields to be commensurate with the amount of risk taken. Thus increasing a firm's leverage (i.e., increased risk)should lead to higher earnings and vice versa (Dietrich & Wanzenried, 2011; Hoffmann, 2011). Hence, if banks expect increased returns, then they must take up more risk by increasing their leverage (i.e., reducing equity to asset ratio). This hypothesis predicts an inverse relationship between bank capital and performance. Thus, bank recapitalization hurts bank performance as it reduces the risk of investment.

b) Empirical Review

i. *Bank Capital and Performance*

Berger (1995) studied the impact of capital on bank profitability in the United States from 1983 to 1989 and found a favorable effect of bank capital on profitability. This effect was profound for risky banks because increasing the capital of such banks reduces expected bankruptcy costs, lowers interest rates, and improves profitability. Kosmidou, Tanna, and Pasiouras (2005)later confirmed this finding in the UK, but both studies failed to account for simultaneity bias. Subsequently, Berger and Di Patti (2006) sought to correct the possible simultaneity bias in the earlier study by Berger (1995). They found that increased bank capital improves performance, thus confirming the risk-return hypothesis. This finding, therefore, refutes the initial claim by Berger (1995).

Eriotis, Frangouli, and Ventoura-Neokosmides (2011) explored the effect of bank capitalization on profitability between 1995 and 1996 and found a negative association between the debt-to-equity ratio and bank profitability; thus reaffirming the claim that bank profitability increases with the injection of new equity capital into its operations whereas high leverage undermines bank performance.

Hutchison and Cox (2007) studied the causal relationship between bank capital and performance using the ROE as the measure of bank performance. Using two banking regulation regimes (i.e., less regulated from 1983 to 1989 and highly regulated from 1996 to 2002) in the United States, they found that increase in bank capital is detrimental to performance contrary to Berger (1995). They argued that the difference between their findings and Berger's is due to the presence of negative outliers in return on equity in the sample used by Berger (1995).

Al-Kayed, Zain, and Duasa (2014) attempted to explore the relationship between bank capital and performance among Islamic banks using the two-stage least squares estimation technique. The authors found that banks with high capital ratio perform better than those with lower capital ratio affirming the signaling theory. The study further showed that there is a U-shaped relationship between capital ratio and bank profitability. The U-shaped relationship suggests that a low level of the capital ratio undermines bank profitability and vice versa.

Olalekan and Adeyinka (2013) investigated the impact of capital adequacy on the profitability of Nigerian banks. The study employed two sets of data: primary (collected by administering questionnaires to 518 bank staff) and secondary (obtained from published annual reports of banks between 2006 and 2010). The evidence from the secondary data revealed that there is a positive link between bank capital and profitability whereas the primary data could not produce any statistically significant outcomes. The authors averred that bank capitalization and profitability are indicators of risk management efficiency and serve as a buffer against losses not covered by current earnings.

Sufian and Chong (2008) studied the causal effect of capitalization on bank profitability measured as the return on equity (ROE). The study covered banks operating in the Philippines from 1990 to 2005. The study found that bank capitalization has a favorable impact on profitability. According to the authors, this is particularly true for banks in developing countries because a strong capital structure enables them to be able to withstand financial crises and also provide better

assurance to depositors especially during bankruptcy and distress macroeconomic conditions.

Similarly, Boahene, Dasah, and Agyei (2012) examined the impact capitalization on bank profitability in Ghana using a sample of six commercial banks from 2005 to 2009 and concluded that capitalization has a strong statistical association with bank profitability.

Berger and Bouwman (2013) tested the hypotheses on the impact of capital on bank survival, profitability and market share in the USA. The found that capital improves the performance of small banks in all three dimensions during market crises and normal times as well, but the effects are less obvious.

Trujillo-Ponce (2013) examined the determinants of banks profitability for Spain and concluded that a higher level of capitalization had a positive impact on the ROA, but negative on the return on equity (ROE). Using the generalized method of moment (GMM) estimation technique, Hoffmann (2011) also found that capital ratio is negatively correlated with bank profitability in the USA.

In Switzerland, Dietrich and Wanzenried (2011) found a positive link between bank capital and performance confirming the expected bankruptcy cost hypothesis. Meanwhile, given the negative relationship between risk and return, banks with excessively high capital ratio may lose out on high returns. They surmised that in any situation, the impact of bank capital on performance depends on the interplay between the risk-return hypothesis and the expected bankruptcy cost hypothesis.

ii. *Bank Regulatory Capital and Performance*

In Nigeria, Adegbaju and Olokoyo (2008) considered the impact of increase bank regulatory capital in 2001 on performance in Nigeria with data spanning 1998 to 2004. Using the student t-test, they reported that indeed the upward revision of the minimum capital requirement was injurious to the performance of banks in the country. This assertion was later confirmed by other researchers (Ibrahim et al., 2012; Okpara, 2011). Ibrahim et al. (2012), using data from 2000 to 2009 and the independent t-test found that the increase in the minimum capital requirement resulted in significant increases in the funding cost of banks. The authors thus determined that the recapitalization policy by the Central Bank of Nigeria rather exposed banks in the country, particularly small banks, to a needless liquidity crisis. Likewise, Okpara (2011) determined the impact of bank reforms in Nigeria from 1970 to 2008 on bank performance using the one sample t-test and showed that banks were negatively affected by recapitalization policies-decline in bank liquidity, cash reserve ratio, and ROA.

Dauda et al. (2016) claim that bank recapitalization improved input efficiency but not output efficiency. This claim is not surprising because as noted by Ibrahim et al. (2012) when funding cost increases, banks tend to reduce operating expenses by adopting austere strategies to minimize cost.

iii. *Bank Ownership and Performance*

Some scholars argue that domestic banks outperform foreign banks in developed countries (Chang, Hasan, & Hunter, 1998; Kosmidou, Pasiouras, Doumpos, & Zopounidis, 2004); Whereas in emerging economies, foreign-owned banks record superior financial performance to domestic banks (Bonin, Hasan, & Wachtel, 2005; Fries & Taci, 2002). This assertion is contested by Ntow-Gyamfi and Laryea (2012) who claim that domestic banks are more profitable and efficient than foreign ones in Ghana. Conversely other studies (Barnor & Odonkor, 2013; Bokpin, 2013). Bokpin (2013) avers that foreign banks are more profitable whereas Barnor and Odonkor (2013) did not find any differences in the profitability of domestic and foreign banks. Clearly, the debate on whether domestic banks are more profitable than foreign banks lingers on.

III. Stylised Facts of Banking Industry in Ghana

This section provides some overview of the banking industry in Ghana between October 2016 and 2017. This discussion gives some perspective on the overall structure and performance of the banks in Ghana. As at July 2017, there were thirty-six (36) banks operating in Ghana. These banks comprised nineteen (19) banks with majority Ghanaian ownership whereas the remaining seventeen (17) are foreign-owned banks.

Due to the revocation of the licenses of UT and Capital Bank Ltd in August 2017, the total number of banks reduced to thirty-four (34); this was made up of seventeen (17) foreign and domestic banks apiece. Hence, by the close of the year 2017, the competition in the banking industry was evenly divided between domestically-owned and foreign-owned banks as can be seen from Table 1.

Table 1: Distribution of Bank Ownership

Ownership	Jul-17	Oct-17
Domestic-owned	19	17
Foreign-owned	17	17
Total	36	34

Source: BOG (2017a)

From Table 2, the total asset size of the entire banking industry stood at GHS73.79 billion by October 2016 and GHS88.91 billion by October 2017 (an increase of GHS15.12 billion). Total credit declined from 16.90 percent to 12.00 percent. Total deposits collected by banks grew to GHS55.83 billion suggesting an improvement in deposit mobilization of banks in 2017.

Table 2: Summary of Key Indicator in Banking Industry

	Oct-17	Oct-16
Total Assets (GHS billion)	88.91	73.79
Growth in Credit (%)	12.00	16.90
Total Deposits (GHS billion)	55.83	47.22
Borrowing (GHS billion)	15.08	12.14
Paid-up Capital (GHS billion)	4.45	3.42
Shareholders' Fund (GHS billion)	11.60	13.55
Non-performing Loans (NPL) (GHS billion)	8.30	6.52
ROE (%)	14.40	20.20
ROA (%)	3.00	4.30

Source: BOG (2017a)

Non-performing loans (NPL) was 6.52 percent in 2016 and 8.30 percent in 2017 indicating a rise in loan default. This may be attributed to ineffective credit management strategies by some banks leading to an adverse effect on bank profitability. Shareholders' fund declined from 13.55 billion to 11.60 billion. This is not surprising because ROA and ROE both declined between 2016 and 2017 with ROA dropping from 4.30 percent to 3.00 percent while ROE plummeted from 20.20 percent to 14.40 percent. The decline in shareholders' fund may have forced some banks to increase paid-up capital and also increase external borrowing from GHS12.14 billion to GHS15.08 billion.

In summary, whereas bank total deposits, non-performing loans, borrowing, and paid-up capital increased between 2016 and 2017, profitability, the growth of credit, and shareholders' fund deteriorated during the same period.

IV. Data and Methodology

We collected data from the annual reports of twenty-two (22) commercial banks in Ghana over the period 2009-2015. For this study, the years before recapitalization are referred to as pre-recapitalization (i.e., 2009, 2010, and 2011) and those after that, post-recapitalization (i.e., 2013, 2014, and 2015). The year 2012 is excluded because it is the year in which recapitalization was enforced and hence we do not expect the actual impact of the policy to have taken full effect on banks. It thus fair to expect that by allowing for a one year lag, the effect of the recapitalization would have begun to kick in and evidence shown in the performance of banks.

After grouping the study period into pre- and post-recapitalization, we compared measures of bank performance during the pre-recapitalization years with those in the post-recapitalization years in line with a similar study conducted by Adegbaju and Olokoyo (2008) in Nigeria. The study also adopts the bank performance measures used by Adegbaju and Olokoyo (2008) which include: ROA, ROE, and profit before tax (PBT) margin. Table 3 displays the definition of each of these measures of bank performance:

Table 3: Measures of Bank Performance and Definitions

Variable	Description	Computation
Return on Assets	This ratio gives an indication of managerial efficiency. It shows how capable the management of the bank has been converting the bank's assets into net earnings.	Computed as the ratio of net income after tax to total assets.
Return on Equity	This refers to return on investment for shareholders or owners of the bank.	Calculated as the ratio of net income after tax to total equity provided by shareholders.
Profit Before Tax Margin	This measures the proportion of total income that translates into actual profit or returns for the bank.	Estimated as the profit before tax divided by total revenue.

Next, the average bank performance prior to recapitalization is compared with performance after recapitalization using the paired sample t-test to ascertain whether there is a statistical difference in performance of banks after the recapitalization policy took full effect.

The paired sample *t*-test is a statistical procedure used to test the effectiveness of a treatment by comparing performance before and after a treatment. In this particular case, our treatment is the imposition of a new minimum capital requirement on banks by the Bank of Ghana in the year 2012. Assuming the performance of a particular bank before the directive was x and its performance after the directive was y. Then the effect of the directive on the performance of the bank i would be $d_i = y_i - x_i$. We then go ahead and find the effect of the recapitalization directive on the performance of each bank in our sample (assuming we have n banks in our sample). Next, we find the average/mean effect or mean difference of the recapitalization directive on the performance of all banks in our sample as:

$$\bar{d} = \frac{\sum_{i=1}^{n}(y_i - x_i)}{n-1} = \frac{\sum_{i=1}^{n} d}{n-1} \quad (1)$$

We then calculate the standard deviation of the effect of the recapitalization directive on bank performance as follows:

$$sd_d = \sqrt{\frac{\sum_{i=1}^{n}(d_i - \bar{d})}{n-1}} \quad (2)$$

This standard deviation is used to compute the standard error (SE_d) of the effect of the directive on bank performance as:

$$SE_{\bar{d}} = \frac{sd_d}{\sqrt{n}} \quad (3)$$

With the mean difference and standard errors of the mean difference computed, the next stage is to calculate the t-statistic as follows:

$$t - statistic = \frac{\bar{d}}{SE_{\bar{d}}} \quad (4)$$

The *t*-statistic follows a *t*-distribution with $n-1$ degrees of freedom. Therefore, the value of the *t*-statistic is compared with the t_{n-1} distribution which gives the *p*-value of the paired sample *t*-test. The null hypothesis of the paired sample *t*-test is that the true mean difference is zero; against an alternative hypothesis that the true mean difference is not equal to zero. The null hypothesis is rejected when the *t*-statistic is greater than the t_{n-1} distribution or when the *p*-value is less than 0.05.

This procedure is employed in assessing the impact of bank recapitalization directive on the performance of banks in Ghana. The approach provides a simple and straightforward way of assessing the impact of recapitalization directive on bank performance. It is, however, important to emphasize that this approach attributes all differences in bank performance to the implementation of the recapitalization directive. This assumption may not be entirely true as other factors might also have contributed to the changes in bank performance. As a result, the outcome of this study must be interpreted with caution.

V. Discussion of Findings

In this section, we discuss three measures of bank performance before and after recapitalization under three samples: (1) overall sample of banks used in the studies referred to as 'Industry'; (2) only foreign banks; and (3) only domestic banks. The results from this analysis are shown in Table 5.1 whereby the average performance before recapitalization is captured under the column 'Pre-recap' and average performance after recapitalization is reported under the column 'Post-recap'.

Under the second column, we find the pre- and post-recapitalization performance for the entire banking industry. We observe from Table 4 that the average industry ROA stood at 1.54 percent before recapitalization but rose to 3.67 percent after recapitalization. Similarly, the ROA of foreign - owned banks increased from 1.60 percent during the period before recapitalization to 4.08 percent after recapitalization. Likewise, domestically-owned banks reported improvement in ROA of 1.43 percent and 2.90 percent before and after recapitalization respectively. This suggests that when it comes to managerial efficiency regarding the use of bank assets to generate income for the firm, performance post-recapitalization was superior to what prevailed during the period before recapitalization.

Table 4: Comparison of Average Performance Pre-and Post-recapitalization

Performance Indicators	Industry		Foreign		Domestic	
	Post-recap	Pre-recap	Post-recap	Pre-recap	Post-recap	Pre-recap
ROA (%)	3.67	1.54	4.08	1.60	2.90	1.43
ROE (%)	23.23	2.86	24.57	-2.78	20.73	13.32
PBT (%)	39.05	20.03	43.65	19.74	30.51	20.56

Source: Authors Computations (2018)

NB: Pre-recap=pre-recapitalization period; Post-recap=Post-recapitalization period

Next performance indicator is the return on equity (ROE) which measures how much shareholders earn per cedi of every capital they have invested in a bank. Overall, ROE for the banking industry improved from 2.86 percent to 23.23 percent before and after recapitalization respectively. Investors in foreign-owned banks, on the other, witnessed tremendous improvement in returns as ROE moved from -2.78 percent after recapitalization to 24.57 percent. Domestically-owned banks also recorded an ROE of 20.73 percent after recapitalization from 13.32 percent before recapitalization.

Profit before tax margin (PBT) recorded improvement from an average pre-recapitalization value of 20.03 percent to post-recapitalization rate of 39.05 percent for the entire banking industry. Likewise, banks with foreign ownership saw a rise in the PBT from 19.74 percent before recapitalization to 43.65 percent after recapitalization. Among domestic banks, average PBT increased from 20.56 percent pre-recapitalization to 30.51 percent post-recapitalization.

In summary, the recapitalization policy introduced in the year 2012 by the Bank of Ghana

seems to have improved bank performance on the three indicators of performance used for this study. In the next sections, we test the statistical significance of the improvements in bank performance post-recapitalization.

a) Test of Means of Bank Performance after recapitalization

The first research question is whether there is enough statistical evidence to conclude that bank performance has improved after the execution of the recapitalization policy by the Bank of Ghana. The results are displayed in Table 5 (See Appendix A.1 for the analogous nonparametric test):

As can be observed from Table 5, the mean ROA post-recapitalization was 2.12 percentage points higher than the pre-recapitalization rate. With a p-value of 0.00, we reject the null hypothesis that the true mean difference is equal to zero. It can, therefore, be concluded that the Bank of Ghana directive for banks to increase their minimum capital to GHS120 million has improved managerial efficiency as far as the use of bank assets is concerned.

Table 5: Test of Means on Bank Performance-Overall Industry

Performance Indicator	Mean Difference	t-statistic	p-value	95% Confidence Interval	
				Lower	Upper
ROA	2.12**	5.58	0.00	1.36	2.88
ROE	20.38**	2.48	0.02	3.93	36.82
PBT	19.02**	4.14	0.00	9.84	28.21
Number of Observations = 120 (i.e., 60 observation apiece before and after recapitalization) Null: The true mean difference is zero; Alternative: The true mean is not equal to zero					

Source: Author's Computation (2018)

*NB: ** signifies statistical significance at 5 percent*

This result is contradicts some studies (Adegbaju & Olokoyo, 2008; Hoffmann, 2011; Ibrahim et al., 2012; Okpara, 2011) but confirms with other empirical evidences (Al-Kayed et al., 2014; Berger & Bouwman, 2013; Berger & Di Patti, 2006; Dietrich & Wanzenried, 2011; Trujillo-Ponce, 2013). Providing empirical evidence from Spain, Trujillo-Ponce (2013) claimed that banks with a higher capitalization recorded higher ROA than their counterparts with lower capitalization; another evidence is provided by Dietrich and Wanzenried (2011) from Switzerland where the authors assert that ROA increases with an increase in bank capital; Al-Kayed et al. (2014) also confirm a positive linkage between bank capital and ROA among Islamic banks. However, Adegbaju and Olokoyo (2008) reported that ROA of banks in Nigeria deteriorated post-recapitalization suggesting that recapitalization is harmful to banks.

Similarly, the post-recapitalization ROE was 20.38 percentage points higher above the pre-recapitalization ROE. This also suggests that shareholders in banks saw their returns improve by over 20 percentage points after recapitalization. There capitalization of banks resulted in shareholders enjoying an extra GHS0.20 on every GHS1.00 invested. The findings reported here agrees with Sufian and Chong (2008), Berger (1995), and Al-Kayed et al. (2014) whom all found a positive association between bank capitalization and ROE. Sufian and Chong (2008) reported their findings from a study of Philippines banks. They established that banks that are well-capitalized reward equity holders better than those that are less-capitalized. Similarly, Berger (1995), in his pioneering study in the US, concluded that capitalization has a positive impact on ROE. Al-Kayed et al. (2014) also claim that bank capitalization has boosted returns on equity for shareholders even among Islamic banks who are less profit-oriented. Other studies that contradict this assertion include Berger and Di Patti (2006) and Hutchison and Cox (2007). Berger and Di Patti (2006) concluded that there is an inverse relationship between bank capitalization and ROE after controlling for endogeneity. Hutchison and Cox (2007), on their part refuted the assertion that capitalization is beneficial to equity holders arguing that the claim by Berger (1995) was due to the presence of outliers in the dataset; hence after removing the outliers, the evidence was in favor of the risk-return hypothesis which advocates for banks to reduce capitalization in order to improve ROE.

We contend that the positive relationship between recapitalization and bank performance, particularly profitability, emanates from the fact that the funding cost of banks in Ghana is relatively lower than what prevails elsewhere. For instance, most banks in Ghana pay little or no interest on savings whereas customers with current account high cost of transactions (COT). The relatively large pool of deposits available to banks in Ghana perhaps offsets the cost associated with raising fresh capital and thereby inures to the benefits of these banks. As noted by Ibrahim et al. (2012), the rise in funding cost after recapitalization is one of the key factors that erode potential gains from recapitalization. This stems from the fact that high funding cost exposes banks to liquidity challenges (Okpara, 2011).

After looking at the global impact of recapitalization on bank performance in the banking industry in Ghana, we examined who benefited the more from the recapitalization policy-foreign-owned banks or domestically-owned banks. We show the results in Table 6 below (See Appendix A.1 for the analogous non-parametric test):

Table 6: Comparison between Foreign and Domestic Banks

Performance Indicator	Foreign	Domestic
ROA	2.47** [4.86]	1.46** [2.82]
ROE	27.36** [2.20]	7.41** [2.05]
PBT	23.91** [3.63]	9.95** [2.30]
Number of Observations	78	42
Null: The true mean difference is zero; Alternative: The true mean is not equal to zero		

Source: Author's Computation (2018)

*NB: ** signifies statistical significance at 5 percent. The corresponding t-statistics are in square brackets [ ]*

As can be seen from Table 6, foreign-owned banks benefited the more form the 2012 recapitalization directive given by the Bank of Ghana. In fact, foreign-owned banks recorded the higher profitability gains on all the measures of performance. For instance, while domestically-owned banks realized 1.46 percentage points increment in ROA, foreign-owned banks enjoyed 2.47 percentage points. Likewise, shareholders of foreign-owned banks saw a 27.36 percentage point increase in their returns against a relatively moderate 7.41 percentage points for shareholders of domestically-owned banks. Again, with regards to PBT, foreign-owned banks recorded 23.91 percentage points increase whereas domestically-owned banks improved by only 9.95 percentage points.

It is easy to understand why foreign-owned banks benefited more from the recapitalization exercise. Indeed, most of the foreign-owned banks operating in Ghana are subsidiaries of large multinational banks that have numerous branches around the globe. Usually, these parent banks are highly capitalized and stand ready to support other subsidiaries who may be in need of additional capital whether as result of regulation or in the course of doing business. This makes it easy for foreign banks operating in Ghana to obtain funds at a comparatively cheaper cost compared with domestic banks that will have to raise additional capital through either private placement or the capital market. With a relatively cheaper cost of funding for foreign-owned banks it no surprise they tended to benefit more from the recent recapitalization.

VI. Conclusion and Recommendations

We conclude that the recapitalization of banks in the year 2012 resulted in improvement in bank performance. This is because the protection against potential financial distress and bankruptcy far out-weighed the risk of high funding costs usually associated with recapitalization (Dietrich & Wanzenried, 2011), particularly for domestic banks. Banks in Ghana pay literally nothing on customers' deposits (except for fixed-term deposits). This reduces their overall funding costs. Raising additional capital through equity, therefore, does not unduly exacerbate total funding costs to the point of causing liquidity crises for the banks (Ibrahim et al., 2012; Okpara, 2011). Second, most of the foreign banks operating in Ghana are subsidiaries of large multinational banks that have numerous branches around the globe. Usually, these parent banks are highly capitalized and stand ready to support their subsidiaries which may be in need of additional capital whether as result of regulation or in the normal course of doing business. This dispensation makes it easier for foreign to obtain funds at a relatively cheaper cost compared to domestic banks who will have to access additional capital through either private placement or the capital market. With a relatively cheaper cost of funding for foreign-owned banks it no surprise they tended to benefit more from the recent recapitalization.

Based on the outcome of the study, the researcher proposes some recommendations for policy, practice, and academic research. First, the study has shown that the recapitalization policy of the BOG enhanced the performance of banks foreign and domestic banks alike. However, foreign banks appear to have benefited more from the policy than domestic banks perhaps because of the support the former receive from their parent companies in the form of new capital injections during these times. The study, therefore, recommends that the BOG should come out with its long-term plan regarding bank recapitalization to enable domestic banks to plan on alternative sources of funding that will ensure that they optimize the benefits that accrue from recapitalization. Furthermore, this will help them compete favorably with their foreign colleagues.

Second, managers of banks (e.g., the board of directors and management) must make conscious efforts at voluntarily increasing their capital base from time to time and this must be incorporated into the banks' strategic plan. This will minimize the efforts required to meet the BOG's deadline for meeting new minimum capital requirements. Also, banks should continually improve their credit risk management practices to avoid capital depletion which usually arises from high non-performing loans and their provisions thereof. Finally, future studies could examine the effect of recapitalization on other indicators of performance including funding cost, net interest margin, bank efficiency (e.g., cost or profit efficiency), and stability or increase the sample size to improve the predictive power of the analysis.

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Appendix A

Results of Wilcoxon signed rank test

Performance Indicator	Industry	Foreign	Domestic
PBT	1,523.5** (0.00)	664.0** (0.00)	182.5** (0.02)
ROE	1,586.0** (0.00)	714.0** (0.00)	178.0** (0.03)
ROA	1,617.0** (0.00)	713.5** (0.00)	188.0** (0.01)

Source: Author's Computation (2018)

*NB: (1) The Wilcoxon signed rank test is the nonparametric equivalent of the paired sample t-test and is used when the sample is assumed to be taken from a population which is not normally distributed; (2) p-values are in parentheses; (3) ** signifies statistical significance at 5 percent.*