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Emmanuel Sarpong-Kumankoma, Joshua Abor, Anthony Q.Q. Aboagye, Mohammed Amidu,

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Differences in bank profit persistence in Sub-Saharan Africa

Emmanuel Sarpong-Kumankoma, Joshua Abor and
Anthony Q.Q. Aboagye

Department of Finance, University of Ghana, Accra, Ghana, and

Mohammed Amidu

Department of Accounting, University of Ghana, Accra, Ghana

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Abstract

Purpose – The purpose of this paper is to examine differences in determinants of bank profit persistence among Sub-Saharan African (SSA) countries.

Design/methodology/approach – Using system generalized method of moments and data from four SSA countries during the period 2006–2012, this study considers differences in determinants of bank profit persistence across countries.

Findings – Efficiency in cost management is a major determinant of profit persistence in all the countries. However, concentration is found to be insignificant in all the estimations, suggesting that efficiency may be a more important determinant of profit persistence than concentration. Economic freedom associates negatively with profit persistence in Ghana, but its effect is insignificant in Tanzania, Kenya and South Africa. Lending specialization translates into less profit persistence in South Africa, but greater persistence in Tanzania. Higher levels of financial development result in lower profit persistence in Kenya and Ghana, but does not matter in Tanzania and South Africa.

Practical implications – The level of profit persistence gives an indication of the effectiveness of competition policies, and the differences observed in their determinants in this study suggest the need for tailor-made policy responses in the different countries.

Originality/value – This study improves the understanding of why some banking market competition policies have not achieved the desired outcomes in some countries. It is evident that blanket rules or wholesale importation of policies from other countries may not work in different contexts.

Keywords Sub-Saharan Africa, Competition, Persistence, Bank profit

Paper type Research paper

1. Introduction

One issue that continues to be of concern to researchers is the persistence of bank profits. While economic theory suggests that freedom of entry and exit in competitive markets should whittle away excess profits, this is not observed in the real world of banking. Bank profits continue to persist (Berger *et al.*, 2000; Goddard *et al.*, 2013; Amidu and Harvey, 2016). So what drives the persistence of bank profits? Are there variations in these influencing factors across different countries? Using the case of four banking markets in Sub-Saharan African (SSA) countries, this study considers differences in the determinants of bank profit persistence among countries.

Contestable markets theory and the new industrial organization literature highlight the influence of potential and actual competition on profitability. The Persistence of Profit (POP) theory proposed by Mueller (1977) asserts that entry into and exit from an industry are sufficiently free to abolish any abnormal profit quickly, and that the profit rates of all the firms in an industry tend to converge toward the same long-run average value. However, this theory does not seem to find enough empirical support (Gschwandtner, 2005). Besides, while there is an extensive empirical POP literature based on manufacturing data, only a handful of studies investigate POP in banking (Goddard *et al.*, 2013), and in only a few



countries (Goddard *et al.*, 2011). Indeed, even fewer still consider the determinants of profit persistence where they exist. Also, previous studies have generally ignored differences in determinants of profit persistence across countries. However, given the peculiar characteristics of individual economies, coupled with the regulatory and institutional environments, we anticipate that different factors would account for bank profit persistence in various countries. By gaining greater insight into this issue, policy prescriptions could be more tailored to the situation in each country. Recently, Amidu and Harvey (2016) studied bank profit persistence in Africa, but they did not consider differences in determinants of profit persistence across countries.

Also, from an antitrust, regulatory and supervisory point of view, a dynamic model of bank profitability gives an indication of the effectiveness of competition in forcing the adjustment or convergence of profits (above or below the norm) toward their long-run equilibrium levels. This may be helpful to regulators, in particular, in distinguishing between situations in which a competitive equilibrium is likely to be achieved rapidly without regulatory intervention, and situations in which regulatory intervention may be required in order to achieve a competitive ideal (Goddard *et al.*, 2011).

2. Literature review

The POP hypothesis developed by Mueller (1977) suggests that entry into and exit from an industry are sufficiently free to abolish any abnormal profit quickly, and that the rates of profit earned by all firms tend to converge toward the same long-run average value. The alternative hypothesis is that some incumbent firms may have the ability to prevent imitation, or regulatory protection may hinder entry. In that case, surplus profits would tend to persist from year to year, creating differences in firm-level long-run average profit rates (Goddard *et al.*, 2011). The degree of first-order autocorrelation in firm- or industry-level time-series profit data provides an indication of the speed at which competition eliminates any above- or below-average profits that are earned in the short run (Goddard *et al.*, 2013). If the coefficient of the lagged dependent variable is between 0 and 1, it implies that profits persist, but they will eventually return to their normal (average) level. However, if the value is close to 0, it suggests that the industry is fairly competitive (high speed of adjustment). A value close to 1 implies a less competitive market structure (very slow adjustment) (Athanasoglou *et al.*, 2008). In markets where competitive forces exist and are effective, the values of the coefficients are expected to be at lower levels (Bektas, 2007). For instance, Goddard *et al.* (2013) found persistence coefficients ranging from 0.141 for Denmark to 0.514 for the Netherlands, suggesting that competition in banking in Denmark was more effective and intense than in the Netherlands.

Although the competitive process should eliminate differences in profits between different firms/industries in the long run, this does not seem to be what is observed in the real world. The theory states that if a firm has excess profits, competitors will enter the market to offer similar products at lower prices until the profitability in the market equals the competitive rate. On the other hand, if firms have profits below average, some investors will move to other markets with higher profits until at least normal profits are obtained. However, this theory does not seem to find enough empirical support, because profits seem to persist from year to year (Gschwandtner, 2005). According to Berger *et al.* (2000), upward shifts in industry profit persistence imply one or more of the following possibilities: product markets have become less competitive; the banking industry has become more opaque; and/or the banking industry has become more sensitive to regional/macroeconomic shocks. As explained by Jiang and Kattuman (2010), the fundamental notion is that intense competition will quickly evaporate any short run excess profit enjoyed by any company, and force each to revert to its own “normal” level of profitability, as determined by its command over various strategic resources.

Berger *et al.* (2000) investigated how banking market competition, informational opacity and sensitivity to shocks have changed over the last three decades by examining the persistence of firm-level rents. The analysis suggests that different processes underlie persistence at the high and low ends of the performance distribution. They found that impediments to competition and informational opacity continue to be strong determinants of persistence; that the reduction in geographic regulatory restrictions had little effect on competitiveness; and that persistence remains sensitive to regional/macro-economic shocks.

Using dynamic panel regressions based on vector autoregressive model, Goddard *et al.* (2004) estimated growth and profit equations for a sample of commercial, savings and co-operative banks from five major European Union countries during the mid-1990s. The POP appears higher for savings and co-operative banks than for commercial banks. Stephan and Tsapin (2008) also studied the POP and its determinants in emerging markets. They applied Markov chain analysis, dynamic panel generalized method of moments (GMM) estimation and quantile regression techniques to a panel of approximately 3,000 Ukrainian companies. The empirical results show a moderate level of profit persistence, as well as a relatively low speed of adjustment to the steady-state profit level, thus providing no support for the hypothesis that there is a lower POPs in emerging markets due to more intense competition.

Further, to account for profit persistence, Athanasoglou *et al.* (2008) applied a GMM technique to a panel of Greek banks over the period 1985–2001. The estimation results show that profitability persists to a moderate extent, indicating that departures from perfectly competitive market structures may not be that large. Flamini *et al.* (2009) also found moderate persistence in profitability in SSA banks, but they do not directly test for determinants of profit persistence. Very recently, Amidu and Harvey used Markov chain and quantile regression to examine the determinants of profit persistence of banks in Africa. Their results show that regulation and earnings management affect the level and persistence of bank profitability.

Goddard *et al.* (2011) examined the intensity of competition in 65 national banking industries. The persistence of bank profit appears to be weaker for banks in developing countries than for those in developed countries. The empirical evidence suggests that the persistence of bank profit is negatively related to the rate of growth in GDP per capita, suggesting that the business opportunities afforded by higher economic growth tend to enhance competition and weaken the ability of incumbent banks to sustain abnormal profits. On the other hand, the persistence of bank profit is positively related to the size of legal entry barriers, in accordance with the view that actual or potential entry is a key determinant of the intensity of competition. There is an association between several institutional and external governance covariates and the persistence of bank profit: persistence tends to be weaker, and competition stronger, in countries where businesses and individuals are afforded more freedom from government interference, where the level of institutional development is advanced, and where the protection of property rights is relatively strong. Their study, however, included only a few African countries.

Gschwandtner (2012) analyzed and compared profit persistence during the periods 1950–1966, 1967–1983 and 1984–1999 in the USA. The results point toward a constant increase of competition after the opening of the US economy to international competition in the 1960s–1980s. Key determinants of profit persistence seem to be the firm's and industry size, industry growth and more recently risk, advertising and exports.

Similarly, Chronopoulos *et al.* (2013) examined the determinants of profitability for a large sample of US banks over the period 1984–2010. They specifically assessed the extent to which short-run profits persist, and whether such persistence is affected by

changes in regulation and the recent financial crisis. Using system GMM estimation, the findings suggest that the competitive process reduces positions of abnormal profitability, albeit this is not immediate. There is also evidence that changes in regulation enacted during the 1990s affected both the level and persistence of bank profitability. The financial crisis of 2007–2010 appears to have resulted in an increase in the persistence of bank profitability.

Goddard *et al.* (2013) examined the determinants and convergence of bank profitability in eight European Union member countries, between 1992 and 2007, using a dynamic panel model. They also found evidence of persistence of excess profit from one year to the next. The POP was lower in 1999–2007 than it was in 1992–1998 in all eight countries. This finding is consistent with the hypothesis of an increase in the intensity of bank competition as a result of an increase in the integration of EU financial markets following the introduction of the euro in 1999, and the implementation of the Financial Services Action Plan.

In general, the reviewed literature suggests that bank profits persist to different degrees in various countries. Key determinants of persistence include regulation (Goddard *et al.*, 2011; Chronopoulos *et al.*, 2013; Amidu and Harvey, 2016), institutional quality and freedom (Goddard *et al.*, 2011; Amidu and Harvey, 2016), and concentration and industry growth (Gschwandtner, 2005, 2012). Even so, previous studies have generally ignored the possibility that different factors may determine bank profit persistence across countries. However, given the peculiar characteristics of individual economies, coupled with the regulatory and institutional environments, we anticipate that different factors would account for bank profit persistence in various countries. By gaining greater insight into this issue, policy prescriptions could be more tailored to the situation in each country. This paper seeks to fill this gap in the literature.

3. Methodology and data

The source of most of the banking data is the Bankscope database, which reports published financial statements from banks across the globe. The data have been standardized into a common format to facilitate comparison across countries and therefore suitable for a cross-country study. Unconsolidated financial accounts (income statement and balance sheet) available for the seven-year period from 2006 to 2012 for four SSA countries were used. The economic freedom variables were obtained from the Heritage Foundation's indices produced in collaboration with *The Wall Street Journal* annually since 1995. These data are available on the Heritage Foundation Website (www.heritage.org). The macroeconomic data are from the World Development Indicators produced by the World Bank, and available on the website of the World Bank.

In line with Goddard *et al.* (2004, 2013), the following empirical model is used to estimate the determinants of bank profit persistence:

$$\pi_{it} = \kappa_i + \lambda_1 \pi_{it-1} + \mathbf{I}_1 \mathbf{x}_{it} + \mathbf{I}_2 \mathbf{m}_t + \hat{v}_{it}, \quad (1)$$

where π_{it} denotes the normalized profit rate of bank i , in year t . Return on average equity (ROAE) is the profit rate measure, and is measured by the ratio of net income after tax to total equity. The profit rate is normalized by expressing π_{it} as a deviation from the cross-sectional industry mean profit rate in year t . \mathbf{x}_{it} denotes a vector of bank-specific variables; \mathbf{m}_t denotes a vector of country-specific variables; κ_i is an individual effect for bank i ; λ_1 is the coefficient reflecting bank profit persistence; \mathbf{I}_1 and \mathbf{I}_2 are vectors of coefficients; and \hat{v}_{it} is the error term.

The model is estimated separately for each country. The coefficient of the lagged dependent variable, λ_1 , measures the speed of adjustment of short-run profits to the competitive norm. If it is high, then short-run profits are persistent and competition is

thought to be weak (slow speed of adjustment). On the other hand, if it is small, or close to 0, then short-run profits are quickly eroded and competition is considered to be strong or fierce (high speed of adjustment). The motivation for the specification of a dynamic profit equation containing a partial adjustment mechanism (lagged dependent variable) is drawn from the POP literature (Athanasoglou *et al.*, 2008; Bektas, 2007; Goddard *et al.*, 2011, 2013; Gschwandtner, 2012; Chronopoulos *et al.*, 2013). Banks usually earn excess profits either through the exploitation of market power of incumbency, or because incumbent banks are more efficient or innovative in the production or distribution of financial services. Over time, entry encourages competition, and eventually erodes any excess profit. But since potential entry and imitation are not directly observable, some approximation for their effects is required in order to model the competitive process (Goddard *et al.*, 2013).

We estimate the regressions based on the system GMM estimator (Arellano and Bover, 1995). The model includes the first lag of the dependent variable as part of the covariates, and unobserved individual bank effects. Hence, the standard fixed effects or random effects estimators would be inconsistent, since by construction, the individual bank effects are correlated with the lagged dependent variable. To address these issues, Arellano and Bond (1991) used a difference GMM estimator for such models. In the difference GMM model, lagged exogenous variables in levels are used as instruments for the first differenced, lagged dependent variable. However, Arellano and Bover (1995) and Blundell and Bond (1998) have shown that these lagged variables may provide little information about the first-differences. Consequently, Blundell and Bond (1998) expanded the work of Arellano and Bover (1995) to develop a system estimator that exploits additional moment conditions on both first-differences and levels, with lagged first-differences of the series employed as instruments in the levels equation. The system GMM estimator reduces potential bias in finite samples as well as asymptotic imprecision associated with the difference estimator (Blundell and Bond, 1998).

We estimate the regressions based on the two-step system GMM estimator (Arellano and Bover, 1995), including both lagged differences and levels of the explanatory variables as instruments. The consistency of the system GMM estimator depends on two key assumptions: that the error term is not autocorrelated, and that the instruments used are valid. Two specification tests are reported. The first is the Hansen test of over-identifying restrictions, which examines the validity of the instruments by analyzing the sample analogue of the moment conditions used in the estimation procedure. The second test examines the hypothesis of no autocorrelation in the disturbance term. The presence of first-order autocorrelation in the differenced residuals does not imply that the estimates are inconsistent, but the presence of second-order autocorrelation implies that the estimates are inconsistent. We thus report only the second-order autocorrelation test results.

The explanatory variables that are expected to influence bank profit persistence and comprise the vectors x_{it} and m_t are defined as follows:

- Credit risk: ratio of gross loans to total assets.
- Cost to income: ratio of total non-interest operating expenses to total income.
- Diversification: ratio of non-interest income to total income.
- Concentration: sum of square of market share of bank assets.
- Financial development: ratio of credit to the private sector to GDP.
- Economic freedom: Heritage Foundation's index of economic freedom, scaled from 0 to 100 with higher values indicating greater freedom to engage in business and other economic transactions.

The relationship between banking market concentration on the one hand, and profitability and competition on the other hand, has been rather ambiguous in the literature. The Structure–Conduct–Performance hypothesis suggests that higher concentration in banking markets has a positive impact on bank profitability, because collusion among banks may result in higher rates on loans and lower interest rates on deposits. However, if concentration is the result of tougher competition in the banking industry, this would suggest a negative relationship between performance and market concentration (Boone and Weigand, 2000). Consequently, the overall effect of market concentration on bank performance is uncertain.

The links between economic freedom and bank performance are quite scarce in the banking literature, but Sufian and Habibullah (2010) provided evidence on the positive impact of economic freedom on banks' performance in Malaysia. They found that overall economic freedom and business freedom exerts positive impacts, implying that higher (lower) freedom on the activities that banks can undertake and entrepreneurs to start businesses increases (reduces) banks' profitability.

The ratio of total loans to total assets is used as a proxy for Credit risk. An increased exposure to credit risk may be associated with decreased bank profitability. We thus generally expect a negative effect of this variable on bank returns (Dietrich and Wanzenried, 2014). As suggested by Dietrich and Wanzenried (2011), the negative relationship between credit risk and bank profits might be a reflection of exposure to high-risk loans, resulting in loan losses that lower the returns of the affected banks. On the other hand, banks that make risky loans may also be obliged to hold a higher amount of provisions. And in order to compensate for the higher risk of default, they may charge higher margins, leading to a positive relationship (Maudos and de Guevara, 2004).

The operating efficiency of banks is known to be an important determinant of bank profitability. In this study, we use the Cost to income ratio as a proxy for efficiency. Banks with high operating efficiency are usually able to maintain a lower cost to income ratio, which enhances profits. Hence, we expect a negative relationship between Cost to income and bank profitability. Of course, if the benefits of improvements in efficiency are shared with customers in the form of lower loan rates and/or higher deposit rates, then the expected increase in profitability may not materialize (Goddard *et al.*, 2013).

A positive relationship between GDP growth and profit persistence, on the back of increased business opportunities for banks, might help banks to sustain positions of excess profitability. On the other hand, the availability of abundant business opportunities might tend to strengthen competition between banks, in which case a negative relationship would be expected between GDP growth and profit persistence (Goddard *et al.*, 2011). We expect similar results for the relationship between financial development and bank profit persistence.

We measure diversification as the ratio of non-interest income to total income. Chiorazzo *et al.* (2008) and Elsas *et al.* (2010) asserted that revenue diversification enhances bank profitability via higher margins from non-interest businesses. However, other previous studies (e.g. Stiroh and Rumble, 2006) show that greater diversification of the banking business does not necessarily translate into an improvement of the bank's profitability. In fact, such diversification may be detrimental to profitability.

4. Empirical results

4.1 Descriptive statistics

A summary of descriptive statistics for the key variables are presented in Table I. The values represent mean country values. Some banking markets are still highly concentrated, notably Tanzania and South Africa, but concentration is much moderate in Kenya and Ghana. The economic freedom index (Economic freedom) measures the ability of

individuals to exercise their fundamental right to control their own labor and property. In an economically free society, individuals have the freedom to work, produce, consume and invest in any way they please. Also, in such societies, governments allow labor, capital and goods to move freely, and desist from coercion or restriction of liberty beyond the extent needed to protect and maintain liberty itself (Heritage Foundation, 2015). The average level of economic freedom (59.4) signifies a reasonable level of liberty to own and employ capital in these countries. South Africa (63.2) and Tanzania (57.5) have the highest and lowest levels of economic freedom, respectively.

Close to two-thirds of bank income is expended on cost averagely (Cost to income ratio of 63 percent). This gives an indication of the level of operating efficiency. Differences in operating efficiency are not very large, but Kenya and South Africa appear to perform better than Ghana and Tanzania. On average, about 53 percent of banking assets in these SSA countries are devoted to lending activities (Credit risk), with the highest level of specialization in lending occurring in South Africa (66 percent). On the other hand, banks in Tanzania (46.1 percent) and Ghana (46.6 percent) devote much less to lending. Similarly, domestic credit to the private sector as a percentage of GDP (Financial development) is significantly higher in the more developed market in the region, South Africa (154.1 percent), compared with Ghana (14.7 percent) and Tanzania (15.9 percent). A significant portion of bank income is earned from non-interest activities (Diversification) in all the countries in the sample, with an average of about 28 percent. The differences among the countries in this respect are minimal.

4.2 Evaluating the determinants of bank profit persistence

The estimation results for bank profit persistence by country are reported in Table II. The dependent variable (eROAE) is the normalized profit rate or excess profit. This is measured as the yearly ROAE per bank minus the mean ROAE in the country of operation in each year. All the regressions were estimated with the two-step system GMM model, with small-sample adjustments and orthogonal deviations (Windmeijer, 2005). This dynamic panel data model takes into consideration the fact that the level of excess bank profits in one period depends to some extent on its previous level. The significantly positive coefficient of the lagged dependent variable in all the estimations shows the validity of this assumption. The results of the robustness tests indicate that the model seems to fit the panel data reasonably well. The *F*-test shows overall goodness of fit, the Hansen test for the validity of the over-identifying restrictions in the GMM estimation is accepted for all the specifications, and the presence of second-order autocorrelation in the errors is also rejected by the test for AR (2).

| Country | Concentration | Economic freedom | Credit risk | Cost/Income | Financial development | Diversification |
|--------------|---------------|------------------|-------------|-------------|-----------------------|-----------------|
| Ghana | 942.6 | 58.4 | 0.466 | 0.650 | 0.147 | 0.270 |
| Kenya | 919.9 | 58.5 | 0.537 | 0.596 | 0.307 | 0.256 |
| South Africa | 2,439.7 | 63.2 | 0.660 | 0.616 | 1.541 | 0.268 |
| Tanzania | 1,578.2 | 57.5 | 0.461 | 0.657 | 0.159 | 0.313 |
| Average | 1,470.1 | 59.4 | 0.531 | 0.630 | 0.539 | 0.277 |

Notes: Concentration is measured by the natural logarithm of HHI, measured as the sum of the squares of the market share of assets of each bank. Economic freedom is from the Economic Freedom Indicators of Heritage Foundation. It is scaled from 0 to 100 with higher values indicating greater freedom. Credit risk is measured as total loans to total assets. Cost to income ratio is measured by the ratio of non-interest operating expenses to operating income. Financial development is measured as domestic credit to private sector as a percentage of GDP. Diversification is measured as the ratio of non-interest income to total income

Table I.
Summary
descriptive statistics

Although there are large differences among the countries in terms of the magnitudes, the persistence coefficients ($eROAE_{t-1}$) are significantly different from 0 in all of the estimations. The range of persistence coefficients is from a low of 0.214 in Kenya to 0.445 in South Africa. This suggests that the intensity of competition in the banking sector is much stronger in Kenya and Ghana (0.257) than in South Africa. Although the South African banking market is well developed, it is dominated by a few large banks, which may possibly explain the observed high level of profit persistence (or less intense competition). On the other hand, banking markets in Ghana and Kenya are less concentrated, with several banks in operation in each of these countries. The relatively large number of banks in Ghana and Kenya may be associated with higher competition, and thus explain the lower level of profit persistence observed. However, the level of intensity in competition appears to be quite moderate in Tanzania (0.320). Overall, these results are not very different from what Goddard *et al.* (2013) found for eight European countries. The coefficients on concentration reveal that banking market concentration does not contribute to bank profit persistence in any of the countries in the sample. This is not consistent with what Goddard *et al.* (2011) found for some advanced and developing countries. Also, while economic freedom associates negatively and significantly with profit persistence in Ghana, its effect is not significant in Tanzania, South Africa and Kenya. This suggests that as banks and other businesses are allowed greater freedom to obtain and use resources in Ghana, greater competition may result, leading to lower levels of profit persistence. This is consistent with Amidu and Harvey (2016) who showed that countries with stronger institutions promote competition which reduces the POP.

It appears that having a higher proportion of bank assets in loans (lending specialization) has the tendency to significantly translate into less profit persistence in South Africa. The negative relationship between credit risk and bank profit persistence in South Africa might be a reflection of exposure to high-risk loans (and greater loan losses) given the high level of

| Dependent variable: excess profit (eROAE) | Tanzania | South Africa | Kenya | Ghana |
|--|---------------------|---------------------|---------------------|---------------------|
| eROAE _{t-1} | 0.3202*** (0.0456) | 0.4445*** (0.1153) | 0.2139** (0.0810) | 0.2571** (0.0955) |
| Concentration | -0.2392 (0.2153) | -0.2200 (0.3343) | 0.0516 (0.0460) | -0.0257 (0.1334) |
| Economic freedom | 0.0017 (0.0138) | -0.0034 (0.0103) | -0.0123 (0.0093) | -0.0292*** (0.0087) |
| Credit risk | 0.1098* (0.0618) | -0.0808** (0.0351) | 0.0101 (0.0833) | -0.1102 (0.1078) |
| Cost to income | -0.3824*** (0.0341) | -0.1988*** (0.0595) | -0.4026*** (0.0166) | -0.7000*** (0.1220) |
| Financial development | -0.0808 (0.1296) | 0.0212 (0.0533) | -0.5643*** (0.1240) | -7.4470*** (2.5915) |
| Diversification | 0.0555 (0.0910) | 0.0354 (0.0255) | 0.1112 (0.0772) | 0.2600 (0.1929) |
| Constant | 1.8382 (2.3123) | 2.0513 (2.4233) | 0.7703** (0.2852) | 3.5096*** (0.7151) |
| Observations | 69 | 79 | 106 | 86 |
| Number of banks | 14 | 16 | 27 | 21 |
| Number of instruments | 13 | 13 | 13 | 13 |
| AR (2) <i>p</i> -value | 0.95 (0.345) | 0.82 (0.414) | -1.51 (0.131) | -1.03 (0.304) |
| Hansen test <i>p</i> -value | 5.23 (0.388) | 7.96 (0.158) | 7.49 (0.187) | 8.13 (0.149) |
| <i>F</i> -test | 109.24*** | 448.68*** | 460.15*** | 76.37*** |

Notes: The dependent variable eROAE is measured as the yearly return on average equity per bank minus the mean return on average equity. Concentration is measured by the natural logarithm of HHI, measured as the sum of the squares of the market share of assets of each bank. Economic freedom is from the Economic Freedom Indicators of Heritage Foundation. It is scaled from 0 to 100 with higher values indicating greater freedom. Credit risk is measured as total loans to total assets. Cost to income ratio is measured by the ratio of non-interest operating expenses to operating income. Financial development is measured as domestic credit to private sector as a percentage of GDP. Diversification is measured as the ratio of non-interest income to total income. All the regressions were estimated with the two-step system GMM model, with small-sample adjustments and orthogonal deviations. Standard errors are in parentheses. *, **, ***Significant at the 10, 5 and 1 percent levels, respectively

Table II.
Determinants of bank
profit persistence

lending in South Africa (Dietrich and Wanzenried, 2011). However, credit risk has a positive and significant effect in Tanzania, but not significant in Kenya and Ghana. Banks that make risky loans may be obliged to hold a higher amount of provisions. And in order to compensate for the higher risk of default, they may charge higher margins, leading to a positive relationship (Maudos and de Guevara, 2004).

Cost to income shows up as a major determinant of the profit persistence in all the countries. The negative and significant coefficients in all the estimations suggest that efficient cost management improves profit persistence in the banking sector in this region. This is in harmony with Dietrich and Wanzenried (2014), and previous studies that suggest that efficiency may be a more important determinant of profitability than concentration. Financial development is found to be an important determinant of excess profit in Kenya and Ghana, but not so in Tanzania and South Africa. The significantly negative coefficients observed for Kenya and Ghana implies that improvements in the development of the banking sector may be associated with greater competition and less excess profitability. Thus, differences in the level of development may account for the observed outcomes in these countries.

Finally, the coefficient on diversification shows up positive but insignificant in all the estimations, suggesting that while increased involvement of banks in other activities may result in higher profitability, it has not reached the point where it can explain the levels of profit persistence in these countries.

5. Conclusions

This paper assessed the determinants of bank profit persistence and variations across countries in four SSA countries, namely, Ghana, Kenya, Tanzania and South Africa, for the period 2006–2012. The persistence of bank profits is estimated separately for each country using the system GMM estimator. The results show that there is significant POP from year to year. The level of profit persistence observed suggests that the intensity of competition in the banking sector is much stronger in Kenya and Ghana than in Tanzania and South Africa. Even though competition may eventually eliminate excess profits, the speed at which excess profit converges appears gradual, and varies across countries. A key determinant of profit persistence in all the countries is the level of efficiency of cost management. On the other hand, concentration is found to be insignificant in all the estimations. Clearly, efficiency appears to be a more important determinant of profit persistence than banking market concentration. Also, we found that economic freedom associates negatively with profit persistence in Ghana, but its effect is insignificant in Tanzania, Kenya and South Africa. It appears that having a higher proportion of bank assets in loans has the tendency to significantly translate into less profit persistence in South Africa, but greater persistence in Tanzania. Differences in the level of financial development may also account for the levels of profit persistence observed in these countries, especially for Kenya and Ghana which show a reduction in persistence with higher levels of development.

We can conclude from the results that there are significant variations in the factors influencing bank profit persistence in different SSA countries. The level of profit persistence gives an indication of the effectiveness of competition policies, and the differences observed in their determinants suggest the need for tailor-made policy responses in the different countries. Thus, policy makers would want to keep in mind the specific factors that contribute significantly to the situation in each country, and provide appropriate measures to enhance competition. It is evident that blanket rules or wholesale importation of policies from other countries may not work in different contexts. For instance, the lower levels of profit persistence observed for Ghana and Kenya indicate that policies that opened up the banking markets may have strengthened the competitive environment and enhanced efficiency in

resource allocation, and that departures from perfectly competitive market structures may not be that large. However, for South Africa where the banking market is well developed, it appears policy measures other than promotion of financial development may be required to improve resource allocation and reduce profit persistence. It also suggests that regulatory intervention may be required in order to achieve a competitive ideal.

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Corresponding author

Emmanuel Sarpong-Kumankoma can be contacted at: esarpong-kumankoma@ug.edu.gh