

**BANKING EFFICIENCY IN THE EASTERN CARIBBEAN CURRENCY
UNION: AN EXAMINATION OF THE STRUCTURE-CONDUCT-
PERFORMANCE PARADIGM AND THE EFFICIENCY HYPOTHESIS.**

BY

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Abstract

The paper presents an application of the Structure-Conduct-Performance (SCP) and Efficiency Hypotheses to data from 44 commercial banks in the Eastern Caribbean Currency Union.¹

The relationship between profitability of banks and the structure of the banking market was examined within a pooled fixed effect framework. The paper also looked at the relationship between market structure and operational efficiency in an effort to assess the relevance of the SCP paradigm and the efficiency hypothesis. The results indicate that profitability of commercial banks in the ECCU is highly influenced by the degree of operational efficiency. The market structure variables exerted little influence on bank profitability, while proxy measures for operational efficiency were important determinants of market structure. Thus, the results were biased towards the relevance of the efficiency hypothesis in the context of the ECCU.

Keywords: SCP Paradigm, Efficiency Hypothesis, Banking sector, Profitability, Operational Efficiency, Market Structure, ECCU.

¹ The member countries of this currency union are Anguilla, Antigua and Barbuda, Dominica, Grenada, Montserrat, St. Kitts-Nevis, St. Lucia and St. Vincent and the Grenadines.

INTRODUCTION

The relationship between market structure and performance in banking remains a much-studied and controversial area of the analysis of firms in the industry. The application of theories of industrial organization developed in other industries suffers from several weaknesses as a result of the peculiarities of banking. Not least of these is the identification and measurement of the output of the banking firm.

The analysis of banking efficiency in the small island economies that constitute the Eastern Caribbean Currency Union (ECCU) poses some even more intractable difficulties. The small size of the combined market - 550 thousand persons - serviced by 44 banking entity results in an average population of 12500 per bank. In most jurisdictions such a ratio would be classified over banked. The size of the territories also limits the number of banks that would be viable. This means that the traditional measures of concentration would be inapplicable.

There is less than perfect movement of financial resources within the currency union due to the existence of several restrictions that limit the movement of capital (Augustine, Samuel and Sandiford, 1994; World Bank (1998)). The imperfections of the financial market mean that local concentration is more important than market share at the regional level. This also complicates the definition of the competition as empirical studies of the US market, which suggest that area over which customers shop for different banking services vary with the banking product. Hence while information intensive banking services may be confined within the country some value added financial services like investment services and credit cards may be sought further afield. Identification of the competition is further complicated by non-bank financial institutions like credit unions and insurance companies that provide near banking services².

² The influence of credit unions can be very significant in at least one country where their total deposits represents xx% of the deposits of commercial banks.

The mixture of foreign branch banks (which do not have capital) and indigenous commercial banks also complicates the use of capital-based measures of performance.

The paper seeks to assess the relevance of the Structure-Conduct-Performance (SCP) and relative efficiency hypotheses in explaining the performance of the banking industry in the ECCU. As a first step the standard estimation procedures are used taking into consideration the peculiarities of the small island economies that are being studied. The structure of the paper is as follows: After the introduction the theoretical foundations of the SCP and Relative Efficiency hypotheses are discussed in Section I. Section II discusses the estimation procedures used in the study, while Section III describes the characteristics of data. The results of the estimation procedures are discussed in Section IV and the final section consists of some concluding remarks and identifies some areas for further research.

SECTION I: THEORETICAL FOUNDATIONS

The literature on bank performance is not conclusive on all the factors that contribute to bank profitability. However the literature points to factors such as market concentration, market power, ownership, efficiency and market growth as influencing the performance of banks. The literature is also inconclusive about the nature of the influence of these variables on bank performance. This section presents a discussion of the competing thesis and highlights some issues regarding bank performance from the literature.

STRUCTURE-PERFORMANCE CONDUCT (SCP) HYPOTHESIS

The SCP paradigm is the most used framework for the analysis of the performance of the banking industry. While its theoretical foundations are well established in the industrial organization literature (Stigler, 1964; Scherer, 1989), its applicability to the banking firm has not always been rigorously justified³. The SCP theory predicts that profits and output prices would be higher the greater the level of concentration in a given market. This is due to the greater ease of collusion in a more concentrated market. When applied to the banking industry it predicts that profits, interest rates on each type of loan and services charges would be higher in a more concentrated market. On the other hand deposit rates offered would vary inversely with concentration (Gilbert 1984).

Following Ruthenberg (1994), the link between concentration and profits can be derived from the Cournot model of oligopolistic behaviour. Assuming an industry with N firms producing a homogenous product Q . The profit maximization function facing the individual firm is $[QP(Q) - C(Q)]$. The firms are assumed to have identical cost functions and assume that the other firms output decisions are unaffected by their own output decisions. Market equilibrium is attained when:

³ Hannan (1991) is one significant exception.

$$\frac{P(Q) - C\left(\frac{Q}{N}\right)}{P(Q)} = \frac{1}{N} \frac{1}{\eta}$$

Where η is the price elasticity of demand.

If the assumption of identical cost functions is dropped in favour of a an element λ which measures the expectations of any firm in the industry concerning the response of rivals (including potential entrants) to its own output decisions, then market equilibrium can be rewritten as:

$$L = \frac{P(Q) - MC}{P(Q)} = H(1 + \lambda) \frac{1}{N}$$

Where L is the market Lerner index and H is the Herfindahl index of concentration, measured as the sum or squared market shares of firms in the industry.

Empirical studies of the SCP have estimated the relationship between market structure and performance by regressing measures of performance against a variety of variables. Ruthenberg (1994) suggests the following general specification of the relationship:

$$\mathbf{p}_i = f(H_i, PC_i, NNI_i, R_i, V_i)$$

Where

π_{ij} is a measure of performance of commercial banks in country i during year j;

H_{ij} is a measure of the concentration of the banking industry in the county i in year j ;

PC_{ij} is a proxy for potential competition or the level of barriers to entry in county i in year j . Potential competition should compete profits away and hence profits are a decreasing function of the level of potential entry;

NNI_{ij} is a measure of non-interest interest income calculated as fees and commissions less overhead expenses as a percentage of total assets incurred by commercial banks in country i during the year j . A positive relationship between performance on NNI is predicted by SCP;

R_{ij} is a measure of overall risk than banks in country I are exposed to in year j . The coefficient of this variable is expected to be positive give the positive relationship between risk and return;

V_{ij} is a vector of control variables representing market and country specific characteristics.

Gilbert (1984) reviewed approximately 45 studies on the relationship between performance and market structure in the Banking industry. He concluded that about one half of the studies uncovered a statistically significant relationship between performance of the market structure. Of the studies that with statistically significant coefficients on market concentration, estimates of the effect of changes in the concentration ratio on the performance measures were economically very small.

A number of reasons have been advanced for the mixed empirical support for the SCP paradigm. These include the following:

Measurement errors

There are several sources of errors in the measurement of the performance variable. The most important is that the numerator usually interest income or operating income is an annual or quarterly flow but the denominator usually an asset measured at a point during the year is a stock. The latter may be substantially different from the average over the year (Heggstad, 1979; Vittas, 1991).

The R-squared for the equations in most of the studies of market structure are quite low ranging from 0.20 to 0.50 (Gilbert). This suggests that there may be several variables that are omitted from the equation. The estimated coefficients may be biased if the measure of market concentration is correlated the omitted variables.

Simultaneous equation bias

The measures of performance may not totally independent of the exogenous variable as in the case where non-interest income is included in the regressors of some measure of profit. The coefficient of the concentration ratio would then be biased towards zero. In such instances a reduced-form equation should be derived from the demand and supply relationships. In most cases the relationship used neither supply equations, demand equations or reduced forms.

Differences in Regulatory Regimes

The studies do not take account of the effect of regulation on bank performance. Banking is a highly regulated industry and differences in regulatory regime can have a non-trivial effect on performance (Gilbert, 1984). In particular ceilings and floors on interest rates that arise from financial repression in developing countries may affect the rate of return. In the case of the ECCU the regulatory framework is identical, with the only restriction being a floor of 4 per cent on the rate of interest on savings deposits. The required reserve ratio is 6%, which is low by developing countries standard (Fry 1998).

Identification of the Competition

Most studies identify the local market, defined in terms of distance as the area for potential competition. However as noted earlier, the spatial delineation of the market may be inappropriate if customers' perception of the market for banking services varies with the particular banking product. For example in the ECCU customers have a choice of credit cards issued by local banks and those issued by banks abroad. The same holds for investment services and complex financial engineering products that are supplied by banks based in Trinidad and Tobago.

Contestability of Markets and Multi-products

The literature on the contestable markets suggest that performance is not so much determined by performance but by the nature of barriers to entry. Shaffer (1982) applies the insights from Baumol et al (1982) that combine the effects of barriers to entry and joint cost within a multi-product framework the banking industry.

The major threat to the theoretical foundations of the SCP paradigm though is the Efficiency Hypothesis, which is developed in the next sub-section.

THE EFFICIENCY HYPOTHESIS

The efficiency hypothesis challenges the basic predictions of the SCP paradigm. The efficiency hypothesis posits that the relationship between market structure and performance of any firm is defined by the efficiency of that firm. In cases where a firm is highly efficient relative to the competitors, the firm can maximize profit by maintaining its current size and pricing strategy or by reducing prices and expanding its operations. If the firm chooses to expand its operations, it will eventually gain market share and thus, concentration will be a consequence of efficiency. The efficiency hypothesis is defined

by a number of sub branches such as the relative market power hypothesis and the efficient structure hypothesis.

The relative market power hypothesis argues that firm with large market shares and well-differentiated products will be able to exercise market power when pricing they products and earn super normal profits.

The efficient structure hypothesis states that only the efficiency of firms can explain the positive relationship between profits and concentration or profits and market share. The X-efficiency argument within this branch of literature states that those firms with superior management or production technologies have lower costs and therefore higher profits. By extension, those more efficient firms will gain greater market shares, which may result in a more concentrated market. In this context, efficiency influences the level of profit and market structure. The scale efficiency argument contends that firms may have comparable quality of management and technology, but some firms produce at a more efficient scale than other firms, thus they have lower unit costs and higher unit profits. Such firms are assumed to acquire larger market shares, which may result in higher levels of concentration. In this scenario, efficiency through an indirect process drives both profit and market structure.

Berger (1991) applied the relative efficiency hypothesis to US banking sector data. The results indicated that once efficiency issues related to individual firms are accounted for, levels of bank cost inefficiency exert greater influence on bank performance than market concentration. In another application of the relative efficiency hypothesis, Berger (1993) found that mergers and the degree of market overlap were generally statistically insignificant in explaining bank performance.

Other researchers such as Brozen (1982) and Gale and Branch (1982) have argued that the structure of an industry may be due to superior production efficiency of firms.⁴ This is

⁴ The following references were cited in; "The efficiency of financial institutions: areview and preview of research past, present and future." Allen Berger, et.al. *Journal of Banking and finance* 17 (1993) : 221-249.

because production efficiency allows firms to increase their market share, thus leading to higher market concentration. This suggests that it not collusion or mergers that lead to higher than normal profits, but rather economies of scale and scope.

Demsetz (1973) argues that a positive relationship between profit rates and concentration may reflect different levels of production efficiency among firms, rather than more effective collusion, or higher concentration in the market.

An examination of studies that have been completed on banking sector data provides evidence to support both the SCP paradigm and the relative efficiency hypothesis. It is therefore not clear which factors have greater weight in terms of determining bank performance.

SECTION II: DATA AND METHODOLOGY

Data

A sample of forty-four banks was used to investigate the determinants of bank profitability in the Eastern Caribbean Currency Union. Statistics on bank profitability and the other variables were obtained directly from the Eastern Caribbean Central Bank. The model was estimated using semi-annual data for the period 1991 to 1999.

The ownership variable was defined as follows. International branch banks were assigned a value of 3, regional branch banks were assigned a value of 2, locally owned banks were assigned a value of 1, and government owned banks were assigned a value of 0. The concentration ratio was constructed using assets of the largest banks summing to approximately 70% of total commercial banking assets in the various countries. Due to the nature of the commercial banking market in the ECCU, this flexible approach had to be taken. In some instances, the largest three banks accounted for over 90 per cent of total assets. In other cases the largest three banks accounted for fewer than 60% of total assets. Thus, a flexible approach was utilized. The flexible approach may be limited in that it may not accurately reflect the level of concentration in each country, however, it is felt that it is the best approach given the underlying nature of the commercial banking market.

The size variable was constructed using total assets of the ECCB area banking system. Individual banks account for between 6 per cent and 1.2 per cent of the total assets of the commercial banking system. Commercial banks that account for between 6 per cent and 3.5% of total ECCB area banking assets were considered large and assigned a value of 2. Commercial banks with total assets that account for between 3.5% and 2 % were considered medium sized and assigned a value of 1. Banks with assets representing less

than 2 % of total ECCB area assets were considered to be small and assigned a value of 0.

Econometric Methodology

Ratio analysis was also in order to determine whether higher profitability of banks is associated with the size and ownership structure of banks. A fixed effect model using the pooled least squares approach will also be utilized to examine the influence of efficiency and structure variables on bank performance. The formulation of the model assumes that differences across individual banks can be captured in the constant term. In the fixed effect formulation can be defined as follows;

$$Y_t = \beta_0 + \beta_1 X_{it} + \mu_{it}$$

For $i = 1, 2, \dots, N$ cross sectional units and $t = 1, 2, \dots, t$.

This can be written in the following matrix format;

$$Y_1 = (\mathbf{1} \ 0 \dots \dots \ 0) \beta_0 + X_1 \beta$$

$$Y_2 = (\mathbf{1} \ 0 \dots \dots \ 0) \beta_0 + X_2 \beta$$

$$Y_N = (\mathbf{1} \ 0 \dots \dots \ 0) \beta_0 + X_N \beta$$

Or;

$$Y = [d_1, d_2, \dots, d_n \ X] \begin{bmatrix} \beta_0 \\ \beta \end{bmatrix} + \mu$$

Where d_i is a dummy variable indicating the i^{th} unit. If we allow the $nT \times n$ matrix $D = [d_1, d_2, \dots, d_n]$. Then putting together all nT rows gives;

$$Y = D\alpha + X\beta + \epsilon.$$

This is a classical regression model and in cases where n is small enough, the model can be estimated by ordinary least squares with K regressors in X and n columns in D .

The fixed effect model allows for the estimation of different intercept (α_i) coefficients for each for each bank within the pool. EVIEWS, the software package used for estimation, computes the fixed effects by subtracting the “within” mean for each variable and estimating ordinary least squares using the transformed data.

Model Formulation

The models were formulated in order to explore the tenets of the structure-conduct-performance hypothesis and the relative efficiency hypothesis. It has been hypothesized, that generally foreign branch banks perform better state owned banks and other indigenous banks. Performance, in this context includes factors such as efficiency, the level of unsatisfactory assets and profitability. This lends credence to the SCP hypothesis that the structure of the banking system does impact on the performance of banks within the system. The efficient structure hypothesis suggests that efficiency influences the level of profit and market structure. The following three models were estimated;

$$ROA = f (CON, OE, NI, SE, IN, SI, MD) \dots\dots\dots (1)$$

$$OE = f (CON, SI, MD, ROA) \dots\dots\dots (2)$$

$$CON = f (OE, NI, SE, MD, TA ROA) \dots\dots\dots (3)$$

Where;

ROA is the return on assets ratio, CON is the level of market concentration in terms of assets, OE is the ratio of operating expenses to average assets, NI is the ratio of net interest income to average assets. The ratio of interest earned on loans to average total

loans is defined as IN, SE is the ratio of staff expenses to total expenses. MD represents the market share of banks in terms of deposits, TA is the loans to deposit ratio and ML is market share in terms of loans.

In equation I, profitability is explained as a function of the level of market concentration (CON) and the level of operating efficiency of individual banks. The ratio of operating expenses to average assets is a measure of the efficiency with which expenses generate increased assets in the individual banks. This ratio is expected to be negatively related to bank profitability. The ratio of staff expenses to total expenses is a measure of operating efficiency. The coefficient on the ratio of net interest income to average assets is expected to be positive. The coefficient of the ratio of interest earned on loans to average total loans (IN) is expected to carry a positive sign.

Concentration (CON) and market share in terms of deposits (MD) and size of a bank relative to other banks in the ECCB area (SI) were included in equation I in an attempt to test the validity of the SCP hypothesis in the context of the OECS. The market share in terms of deposits was included as banks in the ECCB area are predominantly involved in traditional banking business. The SCP paradigm predicts that banks that operate in a more concentrated market, or have greater market shares are most likely to be able to use market power in order to increase their profitability. Thus, the SCP hypothesis will be validated if the coefficients associated with these variables are significant and positively related to profitability.

In equation 2, the efficiency of banks is represented as a function of market concentration in terms of assets (CON), size of the bank (SI), market share in terms of deposits and profitability in the last year. This equation was specified in order to determine whether the structure of the market has any influence on the efficiency of individual banks. It was also important to ascertain the influence of size on the efficiency of banks. The coefficient on the size variable is expected to be positive as economic theory predicts that larger banks become more efficient as they benefit from economies of scale and scope.

Equation 3 was specified in order to test the relevance of the efficiency hypothesis. The efficient hypothesis predicts that, efficiency influences the level of profit and market structure. Thus, concentration is specified as a function of the ratio of operating expenses to average assets, the ratio of staff expenses to total expenses, the ratio of net interest income to average assets, the ratio of interest earned on loans to average total loans, and the loans to deposit ratio.

SECTION III: Discussion and Results

Ratio Analysis

The profitability of banks classified as small, medium and large were examined and the results are presented in table I below.

Table I: Profitability of Commercial Banks by Size

	<i>Mean Profit</i>	<i>Var. Profit</i>	<i>No. of Banks</i>
<i>Small Banks</i>	0.54	1.94	19
<i>Medium Banks</i>	1.30	0.14	9
<i>Large Banks</i>	1.47	0.67	11

The analysis reveals a positive relationship between profitability and size of commercial banks within the ECCU. The average return on assets for small banks over the period 1991 to 1999 stood at about 54% compared to a return of 130% and 147% for medium and large banks respectively. This positive linear relationship confirms the view that the performance of banks is partly determined by factors relating to the structure of the market within which banks operate. It should also be noted that small banks experience relatively high variability of profit when compared to medium and large banks. This may be due to the fact that smaller banks are not able to benefit from economies of scale, thus producing services at higher cost and reducing profit. Of the nineteen small banks within the sample, fifteen of these banks recorded less than 100% return on assets and five banks

recorded losses over the relevant period. In contrast, medium and large banks did not record losses over the period.

Table II: Profitability of Banks by Ownership

	<i>Mean Profit</i>	<i>Var. Profit</i>	<i>No. of Banks</i>
<i>Int'l branch</i>	1.44	2.41	23
<i>Reg. branch</i>	0.66	1.20	8
<i>Local banks</i>	0.44	0.59	10
<i>Gov't banks</i>	0.93	0.10	3

The profitability of banks was also examined in relation to the ownership structure of the banks. Commercial banks were divided in four groups: international branch banks, regional branch banks, locally owned banks and government owned banks. International branch banks recorded the largest profits during the period 1999 to 1999. However, they also recorded very high variability in profits. This result is consistent with expectations as international branch banks can draw on the expertise and resources of their parent companies. Government owned banks are second in terms of profitability and experience the lowest variability of profits. This result is surprising as it is expected that government intervention in the banking sector may reduce the profitability of banks. However, this depends on the extent of government involvement in the activities of commercial banks. It must be noted that only three banks were examined and none of these banks are wholly government owned.

Low average profit and low variability of profits characterize locally owned banks. This may be due to the fact that these banks have used interest rate competition in an order to compete with the international branch banks. In addition, some local banks have not succeeded in increasing the range of services available to the customers, while other local banks have increased their costs by setting up a number of branches. Regional branch banks rank third in terms of profitability and they experience high profit variability over the period. Most of regional branch banks were incorporated after 1992 and therefore they may be still at the gestation stage where interest costs are high in order to achieve a wider customer base.

there is heterogeneity in services provided across banks, it becomes difficult to define economies of scale or scope. This result does not confirm the linear relationship that was observed between bank size and profitability using ratio analysis. However, the variable size and concentration carried the correct sign. The market share in terms of deposits is negatively related to profitability. This may not be an unusual result, as the relationship will depend on how efficiently deposits are converted into loans, and the cost of holding deposits. The results suggest that the SCP hypothesis does not hold in the context of commercial banks in the ECCB area.

In equation 1 the efficiency related variables were all found to be significant. The operating expense to average assets (OE) was negatively related to profitability. This indicates that as the proportion of costs to productive assets becomes smaller banks can become more profitable. The ratio of personnel expenses to total expenses was positively related to profitability. This result is consistent if we assume that productivity increases as personnel expenses increase. The ratio net interest income to average assets is positively related to profitability. As banks become more efficient in terms of generating income from their assets, profits should increase. The sign on the coefficient of the ratio of interest earned on loans to average total loans is positive and this confirms the view that profitability should increase as the interest earned on loans increases. Thus, these results lend support the view that efficiency drives profitability.

In equation 2, market concentration is significant and positively related to operational efficiency, as proxied by the ratio of operating costs to average assets (OE). This suggests that cost inefficiencies are more likely in concentrated markets, as banks are better positioned to pass on these costs to customers. Size is significant and negatively related to operational efficiency, indicating that smaller banks are more cost efficient. This finding is inconsistent with the theory the larger banks tend to be more efficient as they benefit from economies of scale and scope. Market share in terms of deposits is significant and negatively related to operational efficiency. This suggests that as market share in terms of deposits increases operational efficiency falls. This result is consistent with the fact that operating costs increase as deposits grow. Thus, if deposits are not

being converted into productive assets efficiently, this negative relationship will hold. Profitability in the last year was found to be insignificant in terms of determining market concentration. Thus, the market structure variables were found to be important in terms of explaining efficiency.

In equation 3 the ratio of operating costs to average assets is positively related to the concentration ratio. It is expected that customers will bear a higher proportion of operational costs as market concentration increases. The personnel expense to total expenses (SE) is significant and negatively related to market concentration. The loans to deposits ratio is significant and positively related to concentration. Thus as banks become more efficient in providing their traditional banking services, market concentration increases. The ratio of net interest income to average assets is significant and negatively related to market concentration. As banks become more efficient in terms of generating revenue from their assets, they may be able to expand their market share. However, if higher net interest income is due to non-competitive pricing policies, banks may not be able to increase market shares and concentration. The results from equation 3 lend support to the predictions of the efficiency hypothesis. The results suggest that the efficiency of commercial banks impacts significantly on the market structure that is likely to emerge.

Estimation of the following pooled common effect models yielded the results presented in table II;

$$ROA = f (CON, OE, NI, SE, IN, SI, MD, OW) \dots\dots\dots (4)$$

$$OE = f (CON, TA, SI, ML, NP, OW) \dots\dots\dots (5)$$

$$CON = f (OE, NI, SE, TA, MD) \dots\dots\dots (6)$$

The common effect formulation allows for the estimation of identical intercept coefficients for all pool members. The ownership variable was included in these models as it could not be included in the fixed effect models due to difficulty in calculating the

covariance matrices.

Table II: Pooled Common Effects Models

<i>Explanatory Variables</i>	DEPENDENT VARIABLE		
	ROA	CON	OE
CON	-0.01*		-0.01**
SI	-0.03		-0.13**
SE	0.06**	-0.10**	
NI	0.60*	0.25	
OE	-1.45*	-0.81**	
IN	0.32*		
MD	0.09***	2.48*	-0.06**
ML			-0.01**
OW	0.01		0.14*
TA		-11.9*	
<i>R</i>²	<i>0.44</i>	<i>72.9</i>	<i>0.24</i>
<i>F Statistic</i>	<i>69.3*</i>	<i>397.8*</i>	<i>38.32*</i>

Notes:

1. *: Denotes significance at 1%

***: denotes significance at 10%

** : Denotes significance at 5%

2. Intercept coefficients are not reported.

Of particular interest, is that the ownership variable was significant and positively related to the proxy measure for operating efficiency. This suggests that foreign branch banks are more efficient than state owned and locally incorporated banks. However, the ownership variable was not significant in terms of explaining changes in profitability of banks. The efficiency variables were important determinants of the level of market concentration, thus lending support to the efficiency hypothesis.

SECTION IV: CONCLUSION

The paper sought to assess the relevance of the structure-conduct-performance (SCP) and relative efficiency hypotheses in explaining the performance of the banking industry in the ECCU. Equations were specified in an effort to determine whether variables relating to the structure of the banking system exert greater influence on profitability, or whether it is the efficiency of the banking firm that drives profits and ultimately market structure.

The results from the exercise are strongly biased towards the efficiency hypothesis. In examining the factors that determine profitability the proxy measures for market structure; size, market concentration, market share of deposits and ownership were insignificant. In contrast the efficiency variables such as the proxy for operational management, and efficiency in terms of generating revenue from assets were significant determinants of profitability. Thus, when one examines profitability as a measure of performance, the results lends little support to the SCP paradigm. When operational efficiency was used as a proxy for performance the market structure variables, such as ownership and market concentration were significant in determining performance. In that regard, the SCP hypothesis receives some measure of support.

In examining the impact of the efficiency variables on the level of market concentration, the results confirm the predictions of the relative efficiency hypothesis. The evidence therefore suggests that efficiency of commercial banks is more important in terms of determining profitability. One can therefore conclude from the results, that the relative efficiency hypothesis is more relevant in the context of the ECCU.

Further research should involve the dis-aggregation of the data set into smaller groups according to structural factors such as size and ownership, in an effort to determine whether the results vary across groups. The use of cost functions in other to calculate measures of economies of scale and scope and cost efficiency among banks, may also be useful approach.

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