

COMPETITIVE ADVANTAGE IN THE PORTUGUESE BANKING INDUSTRY

Landeiro de Vaz, J.J.
Universidade Técnica de Lisboa

ABSTRACT

In literature, we can distinguish two approaches concerning the sources of competitive advantage in the banking sector: one that focuses size or attractive position that is in relation to market power and is founded on the industrial organization theory; and another that emphasizes efficiency and is inspired by the theories of transaction costs, information economics, firm resources and capacities. Size or efficiency is an important dichotomic question regarding the banking firm theory or the banking business. This paper demonstrates that efficiency represents a source of superior financial performance, that is of competitive advantage in the Portuguese banking industry. Besides, size itself provides a direct explanatory power on efficiency, and indirectly on performance.

KEYWORDS: Competitive Advantage; Banking Strategy; Size; Efficiency.

INTRODUCTION

The size of the banking firm is normally structural in the analysis of strategic behaviour, related to market power and supernormal results, in the tradition of the industrial organization school.

In the literature about strategic behaviour of the banking firm, size represents a source of competitive advantage, founded on a perspective of economies of scale and scope.

If banking firms exist through imperfections in the functioning of financial markets, the most appropriate strategy should consist in delving more deeply into them in order to find dominant competitive positions which would enable them to obtain extraordinary results. The absolute size of the institutions would be the most important competitive advantage in this sector and the scale and scope economies associated with the process of converting funds would assure the results of the financial institutions and defense of their positions in this sector.

The extensive literature dealing with the relationship between size and performance, empirical studies performed do not seem to agree with each other, nor do they do so with the afore mentioned theoretical perspective. The positive relationship between size and profitability have encountered difficulties in terms of empirical support (1), (2), (3) and (4). Moreover, results of studies on the influence of the market's structure, on the measurement of banking performance are extremely variable. They neither uphold nor reject en bloc the hypotheses that market concentration influences banking performance (5), (6), (7) and (8).

A different behaviour may be associated with the search for a minimum efficient size with the achievement of information and transaction costs synergies, more in accordance with the theories of resources, capacities and idiosyncracies and the theories of transaction costs and information economies, which rather sustain efficiency as a source of competitive advantage(9).

Gual and Vives(10), speak of alternative hypotheses that determine profitability: on the one hand efficiency and on the other, market power and collusion.

Efficiency is based on the principle of profits maximization, insofar as the more efficient the firm is in developing its activities, the less the per unit output costs will be, which will therefore lead to greater profits(11).

One may rightly consider that the search for profitability is, in theory, a goal that is peculiar to different banks but may be addressed differently, either through size, focusing on major clients, international banking and participating in banking syndicates, or through management quality and efficiency.

If intermediation is justified through the purpose of converting funds linked to the existence of financial market imperfections, through information economies and the reduction of the risk of opportunist behaviour on the part of the agents involved, financial mediation would determine a strategic behaviour inclined to avail itself of the resources and capacities of the institutions and the shaping of procedures and routine that synthesize knowledge of institutions and strengthen their capacity to handle information.

The success should not therefore be founded on of absolute size - peculiar to transformation activities - but rather in terms of minimum efficient size and the results of the financial institutions would be associated with the acquisition of information synergies and risks related to organizational knowledge and experience. Scrutiny of resources and an analysis of organizational capacities would prove to be like a conceptual frame and the reference argument to enhance strategic behaviour and development of depositary institutions.

From these theoretical currents, of an apparently dichotomic nature, we formulated the following hypotheses:

Hypothesis 1. - The performance of the banking firm - all things being equal - seems to be directly and positively influenced by internal efficiency, not by size.

Hypothesis 2. - Efficiency of costs and assets - all things being equal - mediates the indirect and negative effects of size on performance.

METHODOLOGY

Competition among firms is complex and situational. Each firm, each industry, each period of time is unique. Our methodological framework is characterized as follows:

- 1.- Type- causal
- 2.- Objective- Hypothesis tests
- 3.- Unit of analysis- Banking firm
- 4.- Time horizon- Cross-section

Our data sources are all banks operating in the Portuguese market available in publishing accounting documents of the respective banks.

To this purpose we set up four samples referring to 1991, 1992, 1993 and 1994.

A. THE DEPENDENT VARIABLE

The dependent variable is RONA(return on net assets) which is a function of:

- a.bank size
- b.asset efficiency
- c.cost efficiency

RONA is objective in nature and consistent with the concept of the banking firm as employed in this study in that it is balance sheet oriented.

In this ratio we adopt the APB(Portuguese Banking Association)concept. RONA is made up of the following balance sheet and income statement accounts:

$(\#69 \text{ Profits} + \#68 \text{ Taxes on the financial year's profits} + \#78 \text{ Depreciation for the financial year} + \#79 \text{ Provisions of the financial year}) / \text{Average liquid assets.}$

RONA closely approximates cash flow as a measure of gross operating results.

B. SIZE VARIABLE

Bank size is represented by its average liquid assets.

C. EFFICIENCY VARIABLES

Given that efficiency is based on input/output relationship, we think it is important to have two indicators, one to capture a banking concerning overall efficiency and the other to permit an assessment of the level of operating cost efficiency as follows:

EFFICIENCY OF ASSETS

We employ the Durst and Conner indicator(12) as follows: $(\text{income} / \text{average assets})$

EFFICIENCY OF COSTS

A good and widely used indicator of cost efficiency is $(\text{financial margin} / \text{operating charges})$.

D. STATISTICAL METHODS EMPLOYED

Econometric and statistical calculations were performed using the SPSS PACKAGE. To attain our research goals, and to test the hypothesis, the following methods are employed:

1.- MULTIPLE LINEAR REGRESSION

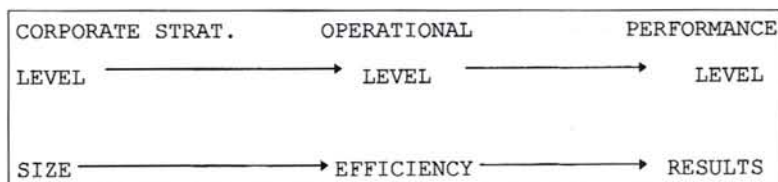
In regression analysis we are concerned with statistical dependence among variables used in parallel, with theoretically established causality relations.

2.-PATH ANALYSIS

The building of theoretical models by establishing direct and indirect causality calls for the use of path-analytic type recursive techniques. Path analysis involves using multiple regression in relation to explicitly formulated causal procedures. The purpose of path-analysis is to provide quantitative estimates on the causal relations among groups of variables. The relations are guided and regarded as distinct paths.

Path analysis permits one to estimate the relative impact of the variables within a causal framework, and tells us what the relative impact of the variables is on one another. When we draw a path diagram, we must be guided by theoretical concepts in establishing cause and effect relations. To have estimations of each of the model's links, the corresponding coefficients are calculated. One path coefficient is the standardized regression coefficient. This coefficient is calculated by defining the structure equations. These equations specify the structure of hypothetical relations in a model. The explanatory variables on the analysis model are divided into two levels- strategic and operational - and a causality relation between the two groups is established in the directions defined in the model.

Figure 1. Metamodel of causal relations.



Prahalad e Bettis (13) have introduced the concept of dominant logic, which argues that the corporate level relationship is a more important determining factor than the operational relationship. In other words, the product market options defined at enterprise level subordinate options to operational level.

EMPIRICAL ANALYSIS

A. HYPOTHESIS ONE

Empirical evidence regarding hypothesis one was analysed through the following models:

Model 1 .- Performance= f(Size)

Model 2 .- Performance = f(Size+Efficiency)

In the first model we used the simple linear regression method in order to analyse the relationship between size and performance.

In the second model was followed the multiple linear regression method in order to analyse the influence of size and efficiency on performance.

MODEL 1 - Performance = f (Size)

The variable of size is represented by the average liquid assets of each bank or by its logarithm(lgsize).

Analysis of the dispersion diagram of regression of the variable size with the dependent variable reveals the absence of linear correlation and statistical significance, in the four samples.

Logarithmic calculation of the independent variable in sample four does, however, allows us to obtain a linearisation -dependent variable relationship with statistical significance.

This relationship is negative in sign, which seems to oppose the idea that size may be a source of competitive advantage or of higher performance in the banking business, at least in that sample.

MODEL 2 - Performance = f (Size + Efficiency)

The results through the application of stepwise method of multiple linear regression, were the following:

-Sample 1 (1991)-

$RONA = 2,08^* + 0,55 \text{ COST EFFI}^{**}$

* Signif.< 0,0005

** Signif.< 0,005

Adjusted R2= 0,41

F= 22,38

Signif.F=0,0001

-Sample 2(1992)-

$RONA = 1,38^* + 0,77 \text{ COST EFFI}^{**}$

*Signif. < 0,1

**Signif. < 0,05

Adjusted R2=0,22

F= 10,07

Signif.F = 0,0034

-Sample 3 (1993)-

$RONA = -1,88^* + 29,33 \text{ ASSET EFFI}^{**}$

*Signif. < 0,1083

**Signif. < 0,005

Adjusted R2 = 0,3

F= 15,29

Signif.F = 0,0005

-Sample 4 (1994)-

RONA= -2,1* + 32,23ASSET EFFI**

*Signif.< 0,1

**Signif.< 0,0005

Adjusted R2 =0,39

F=26,91

Signif. F=0,0000

ANALYSIS OF RESULTS

The results obtained and the statistical strength of the regression models provide evidence of the explanatory power of the efficiency in the performance of the banking firm.

In the four samples the variable of size was always excluded from the regression equation.

The models employed are close to the assumption of normal distribution, specially in the samples one and two. The outliers whose module value is above 1,96, amount to 5% of the cases in each of the samples.

B. HYPOTHESIS TWO

Empirical evidence regarding hypothesis two was analysed through the following model:

Performance=f(Size+Efficiency)

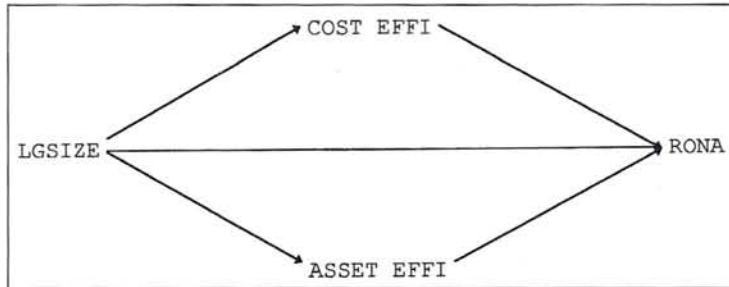
Efficiency=f(Size)

In this model we used a recursive regression method of simultaneous equations (path analysis) which enables one to highlight direct and indirect relationships between these strategic dimensions.

Here we also followed the criterion of applying logarithmic procedure to the variable corresponding to the size, which allows one to improve the linear relationship and the statistical significance with the dependent variable and the other variables corresponding to efficiency.

To analyse the multiple relationships defined in this model we shall follow the diagram of causality effects to be found in the following figure:

Figure 2. Path diagram.



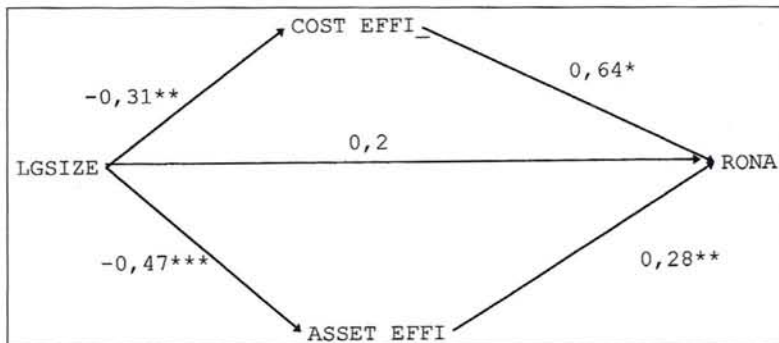
The structure equations corresponding to this model are as follows:

$$(1) \text{RONA} = a + x_1(\text{lgsized}) + x_2(\text{asset effi}) + x_3(\text{cost effi}) + e$$

$$(2) \text{ASSET EFFI} = a + x_1(\text{lgsized}) + e$$

$$(3) \text{COST EFFI} = a + x_1(\text{lgsized}) + e$$

Figure 3. Diagram of results. Sample 1.

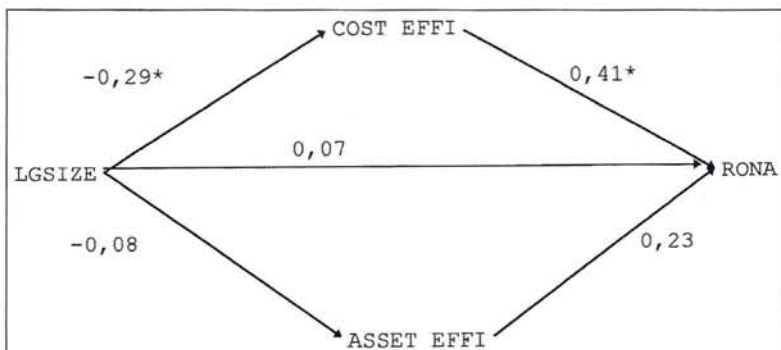


*Signif. < 0,0005; **Signif. < 0,1; ***Signif. < 0,05.

Table 1. Table of causal effects-Sample 1 (1991).

		DIRECT	INDIRECT	TOTAL
LGSIZE	RONA	0,2	-0,32	-0,12
COST EFI	RONA	0,64	-	0,64
ASSET EFI	RONA	0,28	-	0,28
LGSIZE	COST EFI	-0,31	-	-0,31
LGSIZE	ASSET EFI	-0,47	-	-0,47

Figure 4. Diagram of results. Sample 2.

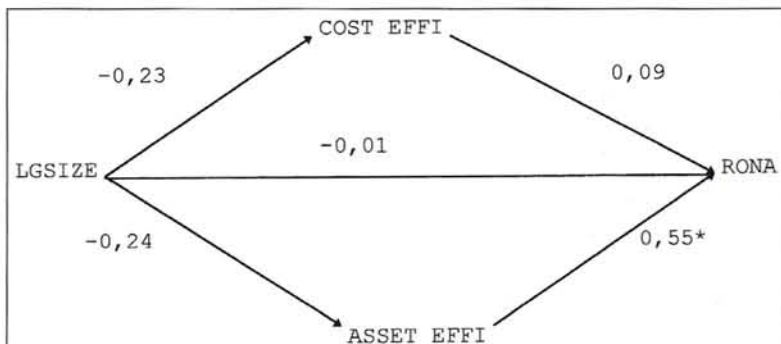


*Signif. < 0,1.

Table 2. Table of causal effects-Sample 2 (1992).

		DIRECT	INDIRECT	TOTAL
LGSIZE	RONA	0,07	-0,12	-0,05
COST EFI	RONA	0,41	-	0,41
ASSET EFI	RONA	0,23	-	0,23
LGSIZE	COST EFI	-0,29	-	-0,29
LGSIZE	ASSET EFI	-0,08	-	-0,08

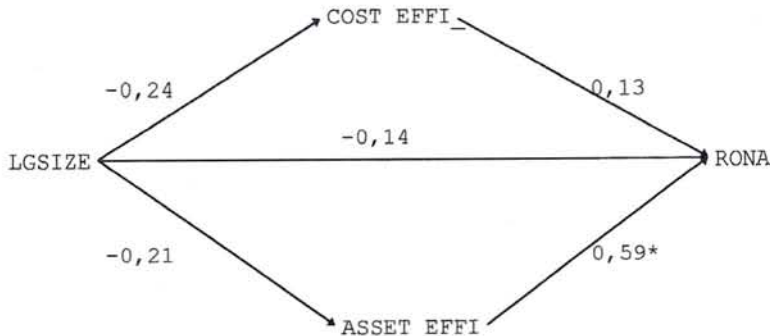
Figure 5. Diagram of results. Sample 3.



*Signif. < 0,005.

Table 3. Table of causal effects-Sample 3 (1993).

		DIRECT	INDIRECT	TOTAL
LGSIZE	RONA	-0,01	-0,15	-0,16
COST EFI	RONA	0,09	-	0,09
ASSET EFI	RONA	0,55	-	0,55
LGSIZE	COST EFI	-0,23	-	-0,23
LGSIZE	ASSET EFI	-0,24	-	-0,24

Figure 6. Diagram of results. Sample 4.

*Signif. < 0,0005.

Table 4. Table of causal effects-Sample 4 (1994).

		DIRECT	INDIRECT	TOTAL
LGSIZE	RONA	-0,14	-0,15	-0,29
COST EFI	RONA	0,13	-	0,13
ASSET EFI	RONA	0,59	-	0,59
LGSIZE	COST EFI	-0,24	-	-0,24
LGSIZE	ASSET EFI	-0,21	-	-0,21

ANALYSIS OF RESULTS

SIZE-PERFORMANCE RELATIONSHIP

The sign of the overall effects of size both direct and indirect (through efficiency) was always negative; however the direct contributions have no statistical significance in any the four samples.

SIZE-EFFICIENCY RELATIONSHIP

The sign of the size-efficiency relationship is always negative, whatever the sample. Parameters have been obtained with a statistical significance of < 0,1 in sample one and for cost efficiency in sample two.

EFFICIENCY-PERFORMANCE RELATIONSHIP

The internal efficiency dependent variable relationship is always positive in any of the samples and for the two variables that stand for that dimension. The causal effect of efficiency of the assets on performance is very strong in samples three and four and has a statistical significance of < 0,5; the causal effect of cost efficiency on performance is also very strong in samples one and two and has a statistical significance of < 0,1.

CONCLUSIONS

The methodology we employed confirms that:

- 1.- Efficiency represents a source of superior financial performance, that is of competitive advantage in the Portuguese banking industry.
- 2.- Size doesn't present direct explanatory power on performance.
- 3.- Size presents, anyhow, direct and negative explanatory power on efficiency and indirectly on performance.

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