

# AN EMPIRICAL INVESTIGATION OF THE CONCENTRATION - PROFITABILITY RELATIONSHIP IN THE JORDANIAN BANKING SYSTEM

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## 1. Introduction

In his landmark study, Bain (1950) hypothesized that high degrees of market share concentration are inextricably associated with decreased competition between firms and, consequently, with high levels of profits. Bain (1951), by empirically testing this hypothesis with data generated by the U.S. industrial firms, presented evidence in favor of the positive and significant association between concentration and profit rates.<sup>1</sup> These pivotal studies by Bain have initiated a heated debate on both theoretical and empirical grounds concerning the notion conventionally referred to as the structure-performance (S-P) hypothesis in the industrial organization literature.

On the other hand, beginning with Schweiger and McGee (1961), this hypothesis has been introduced into the realm of the market within which commercial banks operate. Since then a considerable research effort has been devoted to test extensively whether concentration plays prominently significant role in determining bank profitability.

From the view point of the commercial banking industry, empirical evidence on the (S-P) hypothesis is a matter of considerable importance for several reasons.

i) It provides a strong rationale for banking regulatory and supervisory authorities to introduce, modify and monitor public policy measures designed to enhance social welfare.

ii) In the advent of dramatic changes recently taking place in the international financial system, it alternatively contributes deregulation of the banking system, by providing an empirical justification for the argument that the unrestrained financial system automatically solves all its economic problems.<sup>2</sup>

iii) It can be utilized as a criterion in evaluating the role of commercial banks in economic growth. Since commercial banks are the primary suppliers of funds to business firms (existing and newly established ones), the availability of bank credit at affordable rates is of crucial importance for the level of investments of the firms and, consequently, for the healthy growth of the national economy.<sup>3</sup> According to the (S-P) hypothesis, costs of bank credit crucially depend upon the structural characteristics of the bank market. That is, increased bank concentration, by increasing costs of credit, has a detrimental effect of reducing the demand of the firms for bank credits and the level of business investments.

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1 Concentration is conventionally defined as the number and size distribution of firms in the market.

2 For more discussion of this point, see Goodfriend and King (1988).

3 For the simple exposition of the link between bank credit and economic growth, see Dennis (1981, pp. 21-22).

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Such points cited above, as a whole, have become a motivating force for the present study to undertake an exploratory empirical testing of the (S-P) hypothesis within the context of the market in which the Jordanian commercial banks function. More specifically, this empirical study, by formulating a bank profitability model and testing it with the data generated by the Jordanian commercial banks, aims to investigate the role of the market concentration in determining bank profitability. The study proceeds as follows: The next section reviews the most recent empirical literature in order to gain an insight into the nature of the (S-P) relationship. Section 3 is devoted to the model specification and hypothesis. Sections 4 and 5 present data, empirical results, and conclusions, respectively.

## 2. Review of the Empirical Literature

The keen interest of researches in empirical testing of the (S-P) hypothesis within the context of the banking industry has produced a plethora of empirical studies, so far almost exclusively conducted for the U.S. Excellent surveys of these structure-performance studies in banking published prior to 1984 have been provided by Heggestad (1979) and Gilbert (1984).

It should be immediately pointed out that, in this section, these two surveys, together with Rhoades and Rutz (1982), Smirlock (1985) and Clark (1986), will be used as benchmark studies to expose the existing views on the concentration-bank profitability relationship for the purpose of achieving the following: (i) To outline conceptual framework to base our bank profitability model, and (ii) to facilitate the interpretation of the empirical results to be obtained by this investigation. The common methodological approach used by the existing empirical studies aiming to shed light on the concentration-bank profitability relationship has been to regress a measure of bank profitability on a measure of market concentration plus other control variables. On the basis of such approach these studies, over the past several decades, have been keeping on producing empirical results on such relationship.

It should particularly be underlined that the overall results of this impressive body of the existing research has been far from being indisputably conclusive. In other words, no unique conclusion can be drawn from the results of the existing studies since favorable empirical evidence produced by some studies has strongly been challenged by the opposite type of evidence of others. It is quite interesting to add that the existence

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of such polarized or mixed empirical evidence has become a significant factor for the development of distinctively conflicting interpretations of the existing empirical results on the concentration - profitability relations. Such interpretations, by using the conventional terminology, are systematically presented below.

i) The traditionalists. According to Heggstad and Mingo (1976), Heggstad (1977), the overall results of the existing empirical literature support the notion that the (S-P) hypothesis holds in reality.<sup>4</sup>

ii) The Neo-traditionalists. Adherents of this view, by fundamentally excepting the (S-P) hypothesis, have advanced several reasons to explain the failure of the existing research to produce consistently positive and statistically significant relationship between concentration and bank profitability.

Clark (1986), for example, has pointed out that the use of the single-equation estimation methodology may depress the effect of the market concentration variable on the bank profitability variable. Another explanation proposed by Rhoades and Rutz (1982) has taken into consideration the impact of market concentration upon bank management's risk-return preferences. According to this explanation, bank management in concentrated market is highly sensitive about showing high profits and therefore, has high tendency for a quite life.<sup>5</sup> The failure of explicit recognition of such behavior may produce weak, or statistically insignificant relationship between the concentration and bank profitability variables.

iii) Proponents of the Efficient Structure (E.S.) Hypothesis. Following Demsetz (1973), Peltzman (1977) and Brozen (1982), Smirlock (1985) has formalized the (E.S.) hypothesis by stating that market concentration is not a random event but rather the result of firms with superior efficiency obtaining a large market share. Adherents of this hypothesis, by rejecting the (S-P) hypothesis, have attempted to demonstrate that there is no relationship between concentration and profitability, but rather between bank market share and bank profitability.

iv) Proponents of the Contestable Market Theory. Supporters of this theory, raising serious questions about the viability of the (S-P) hypothesis, have offered alternative view. On the basis Baumol, Panzar and Willing (1982), their view can be stated as follows: When barriers to market entry and exit are not precluded, or a market is contestable,

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<sup>4</sup> Banking supervisory and regulatory authorities, in general, should be included into this group.

<sup>5</sup> The quite-life hypothesis is first introduced by J.R. Hicks. For its brief explanation see Rhoades and Rutz (1986, p. 73).

then there is no basis for assessing a significant value to the market concentration variable in determining bank profitability.<sup>6</sup> According to them it is quite possible to have outcomes approximating those of perfect competition even though the number of actual competitors is quite small or concentration is quite high provided that the market is contestable.

A critical examination of the existing research and views on the S-P relationship enables us to state the following:

- a) The majority of the existing studies employs a simple-equation model of bank profitability where a measure of profit rate is regressed on a measure of market concentration, along with some control variables.
- b) The substantial disagreement still remains among researchers concerning the role of market concentration on bank profitability. Since the issue is essentially empirical it can only be settled on empirical grounds.
- c) The existing studies provide valuable procedural and methodological guidelines for future studies on the concentration- profitability issue.<sup>7</sup>

### 3. Model Specification and Hypothesis

Given the fact that there exists no strong theory or empirical consensus that makes the particular specification significantly superior to all others, in this study our approach to the specification of a model of bank profitability is a pragmatic one. However, it should be noted that in model specification, we intended to remain within the conventionally established limits. To this end, Rhoades and Rutz (1982), Gilbert (1985) and Smirlock (1985) provided the required guidance.

The general form of the bank profitability model to be utilized by this study is as follows:

$$PRO_i: F(IMC_i, MS_i, MG_i, BS_i, BR_i) \quad (1)$$

where

$PRO_i$ : a measure of the profitability of bank (i)

<sup>6</sup> In a recent paper, Baumol and Willig (1986) trace the new developments in the contestable market theory.

<sup>7</sup> Since no prior study on the S-P relationship exists in the Jordanian banking literature, this point is particularly important for the present investigation.

IMC<sub>i</sub>: Bank (i)'s index of market concentration

MS<sub>i</sub>: The market size of bank (i)

MG<sub>i</sub>: The market growth rate of bank (i)

BS<sub>i</sub>: The bank (i)'s size

BR<sub>i</sub>: A measure of the overall risk of bank (i)

In light of methodological procedures of the existing studies, the following statistical relationships are hypothesized to hold between the dependent and each of the independent variables in Equation (1).

$$a. \quad \frac{\delta PRO_i}{PRO_i} / \frac{\delta IMC_i}{IMC_i} > 0$$

Within the conceptual framework of the S-P hypothesis, the relationship between the PRO<sub>i</sub> and IMC<sub>i</sub> variables is expected to be positive.

$$b. \quad \frac{\delta PRO_i}{PRO_i} / \frac{\delta MS_i}{MS_i} > 0$$

The PRO<sub>i</sub> and MS<sub>i</sub> variables are hypothesized to have a positive relationship on the basis of the following justification: Larger market size enables the bank to differentiate its products and, consequently, to generate higher profits (Smirlock, 1985, p. 71).

$$c. \quad \frac{\delta PRO_i}{PRO_i} / \frac{\delta MG_i}{MG_i} > 0$$

The market growth variable is included in the model to serve as a proxy for the strength of demand for banking services. Since increases in this variable suggest the expansion of profitable opportunities for the bank, the relationship between PRO<sub>i</sub> and MG<sub>i</sub> is hypothesized to be positive.<sup>8</sup>

$$d. \quad \frac{\delta PRO_i}{PRO_i} / \frac{\delta BS_i}{BS_i} > 0$$

It is quite rational to argue that larger banks, relative to smaller banks, are in better

<sup>8</sup> These relationships are conveniently expressed as elasticities of PRO<sub>i</sub> with respect to each of the exogenous variables.



position in realizing scale economies and/or in having greater diversification opportunities. On the basis of this argument, a positive relationship is hypothesized to hold between the  $PRO_i$  and  $BS_i$  variables.

$$e. \frac{\delta PRO_i}{PRO_i} / \frac{\delta BR_i}{BR_i} > 0$$

On the basis of the well-known trade-off between risk and return, the relationship between  $PRO_i$  and  $BR_i$  variables is expected to be positive.<sup>9</sup>

#### 4. Data and Empirical Results

The above model, by using cross-section data generated by the full sample of the commercial banks in Jordan, was tested for the five consecutive years from 1984 to 1988.<sup>10</sup> In these tests, the OLS method was used. The main source of the data of the study was annual Report of individual banks. The actual variables utilized in these tests were calculated on the basis of the information published in these reports. The definitions of these variables are presented below.

##### *Bank(i)'s profitability measures*

$ROE_i$ : Rate of return on equity (bank(i)'s net income before taxes divided by its share holders equity).<sup>11</sup>

$ROA_i$ : Rate of return on total assets (bank(i) net income before taxes divided by its total asset's).

##### *Index of market concentration*

$IMC_i$ : Bank(i)'s Herfindahl-Hirschman Index of market concentration.<sup>12</sup>

##### *Market size measures*

$MS_i$ : Bank(i)'s total deposits divided by total commercial bank deposits in the market.

9 MSI by Rhoades and Rutz (1982, p. 79) was alternatively used as a proxy for the entry conditions.

10 The names and some important characteristics of the commercial banks operating in the Jordanian economy are provided in Appendix A.

11 Net income before taxes is assumed to be a relatively better indicator of bank (i)'s performance.

12 This index for an individual is calculated as follows:

$$(TD_i/TD)^2$$

where  $TD_i$  is bank(i)'s total deposits;  $TD$  is total commercial bank deposits in the market. For more discussion, see Adelman (1965).

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AMS<sub>i</sub>: An alternative measure which is the ratio of bank(i)'s deposits to total commercial bank deposits plus deposits in other financial institutions.<sup>13</sup>

*Market growth measures*

MG<sub>i</sub>:  $(MS_{it}/MS_{it-1}-1)$

AMG<sub>i</sub>:  $(AMS_{it}/AMS_{it-1} - 1)$

*Bank size measures*

BS<sub>i</sub>: Bank (i)'s total deposits.

ABS<sub>i</sub>: An alternative measure based on bank (i)'s total assets.

*Bank Risk measure*

BR<sub>i</sub>: A proxy for risk of bank measured by the ratio of bank(i)'s total loans to its total deposits.<sup>14</sup>

Tables 1 and 2 contain the alternative versions of the ROE equation estimated using OLS. It should be noted that the regression results of the ROA equation, due to their relatively inferior statistical merits, have not been reported in this section.<sup>15</sup>

A quick glance at the results in these tables suffices to point out that given the size and cross sectional nature of data, the summary statistics of the estimated equations are quite plausible. On the other hand, on the basis of a critical examination of the sign and statistical significance of the coefficients of the independent variables in the estimated equations, the following can systematically be noted:

a) The IMC<sub>i</sub> variable, with only one exception (in 1984), appears to be a statistically significant variable in the bank profitability equation. However, it is quite interesting to observe that its estimated coefficients do not consistently have the anticipated positive sign, particularly in both 1987 and 1988.

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13 Other financial institutions include financial companies, specialized credit institutions and contractual and savings institutions.

14 This direct measure of bank risk was calculated on the basis of points in Gibson (1985, p. 633).

15 These results confirm the contention that ROE best reflects the efforts of managers interested in shareholders wealth maximization.

Table 1

## REGRESSION ANALYSIS RESULTS

Independent Variables	Dependent variable: ROE				
	(1984)	(1985)	(1986)	(1987)	(1988)
Constant	0.163	0.107	0.177	0.338	0.262
IMC <sub>i</sub>	1.551 (0.245)	12.009 (2.803)	3.591 (1.826)	-3.053 (1.385)	-1.903 (2.516)
BS <sub>i</sub>	$4.45 \times 10^{-5}$ (0.700)	$-8.87 \times 10^{-5}$ (1.866)	$-2.94 \times 10^{-5}$ (0.999)	$-1.12 \times 10^{-6}$ (0.620)	$-2.22 \times 10^{-5}$ (0.441)
MS <sub>i</sub>	-7.039 (0.624)	15.051 (1.645)	5.591 (0.947)	3.498 (0.799)	6.441 (0.513)
MG <sub>i</sub>	0.303 (2.245)	0.116 (0.926)	0.051 (1.814)	-0.052 (1.339)	-0.384 (1.527)
BR <sub>i</sub>	-0.137 (0.404)	-0.061 (0.426)	-0.138 (0.748)	-0.442 (3.054)	-0.235 (1.859)
Summary Statistics					
R <sup>2</sup>	0.423	0.9284	0.7238	0.500	0.367
SSE	0.122	0.0656	0.0305	0.016	0.075
F	11.47	25.933	15.241	12.001	11.158

\* Statistically significant at the 5% level.

\*\* Statistically significant at the 10% level.

b) Contrary to *a priori* expectations, the bank size variables (BS<sub>i</sub> and ABS<sub>i</sub>) and the market size variables (MS<sub>i</sub> and AMS<sub>i</sub>) have not been found statistically related to the bank profitability. Similarly, the estimated results of the bank risk (BR<sub>i</sub>) variable are also found contradictory to the expectations.

c) The market growth variable specified as MG<sub>i</sub> or AMG<sub>i</sub> has produced plausible results and appeared to be a relatively significant determinant in the bank profitability equation.

d) In equations for the years 1987 and 1988, BR<sub>i</sub>, by keeping its negative sign, becomes a statistically significant variable. This change, in turn, produces the following visible impact on the IMC and the market growth variables: (i) IMC<sub>i</sub> takes on negative sign in both 1987 and 1988, and it becomes statistically insignificant in 1987; (ii) both MG<sub>i</sub> and AMG<sub>i</sub> change their signs and lose their statistical significance.

The last point just cited above is highly interesting and deserves a brief explanation.



Table 2

## REGRESSION ANALYSIS RESULTS FOR THE ALTERNATIVE SPECIFICATION

Independent Variables	Dependent variable: ROE				
	(1984)	(1985)	(1986)	(1987)	(1988)
Constant	0.129	0.074	0.212	0.324	0.314
IMC <sub>i</sub>	1.141 (0.215)	14.682 (4.677)	2.524 (1.868)	-2.405 (1.288)	-7.544 (1.918)
AMG <sub>i</sub>	0.465 (1.960)	0.158 (1.117)	0.043 (1.949)	-0.048 (1.532)	-0.284 (1.625)
AMS <sub>i</sub>	-2.158 (1.072)	1.035 (0.917)	-0.298 (0.289)	-0.048 (0.012)	10.973 (2.119)
ABS <sub>i</sub>	$1.31 \times 10^{-5}$ (1.0152)	$-9.28 \times 10^{-7}$ (1.097)	$5.59 \times 10^{-7}$ (0.105)	$2.33 \times 10^{-6}$ (0.175)	$-2.50 \times 10^{-5}$ (1.931)
BR <sub>i</sub>	-0.126 (0.363)	0.029 (0.215)	-0.204 (1.116)	-0.407 (2.566)	-0.393 (2.720)
Summary Statistics					
R <sup>2</sup>	0.460	0.9320	0.6982	0.4252	0.540
SSE	0.118	0.0623	0.0333	0.0192	0.0640
F	7.705	27.420	14.627	11.479	12.351

\* Statistically significant at the 5% level

\*\* Statistically significant at the 10% level.

As is noticed, the BR<sub>i</sub> variable (i.e., the ratio of total loan<sub>i</sub>/total assets<sub>i</sub>) enters into the model as a proxy for the bank risk, and consistently exhibits negative sign. This observed consistency may arise from the possibility that BR<sub>i</sub>, being a poor proxy for actual bank risk, is in fact reflecting the combined effect of general market conditions and banks' preference toward risk reduction. If this argument is correct, the statistically significant BR<sub>i</sub> variable may alter the nature of the influence of the IMC<sub>i</sub> and market growth variables upon ROE.

## 5. Summary and Conclusions

In this exploratory investigation, an attempt was made to test empirically the structure-

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performance (S-P) hypothesis within the institutional context of the Jordanian commercial banking system. The study utilized cross-sectional data collected from the whole sample of 16 commercial banks in Jordan over the 5 consecutive years from 1984 to 1988. The bank profitability model of the study was formulated under the methodological guidelines provided by the existing studies in the empirical literature.

The empirical results presented by the study for 1984, 1985 and 1986, to some extent, reflect the impact of both market concentration power and growth in market demand for banking services upon ROE. However, such impact cannot be detected in the results obtained for 1987 and 1988. It should be immediately noted that the results of these latter years may be interpreted to argue that there has been a change in the behavior of the banks regarding the composition of their loan portfolios. That is, banks with large market concentration power may have inclined to rely on the loans of less profitable (and at the same time, possibly less risky) loans. It seems intuitively reasonable to assume that these changes in the composition of the banks loan portfolio might be generated by the drastic changes that then have started to take place in the overall conditions of the Jordanian economy.

Even though some empirical evidence in support of the (S-P) hypothesis within the Jordanian commercial banking system has been provided, the overall findings of the present study compels us to understate the role of the market concentration variable in the determination of bank profitability. The main reasons for this are the appearance of the market growth variable as a potentially influential factor in the bank profitability relation and the empirical ambiguity introduced into the equation by the  $BR_i$  variable.

Consequently, it should be underlined that the empirical findings of the present study cannot be extended to make strong policy suggestions in the direction of more restrictive (or lenient) banking regulation. For this purpose, much additional empirical work is surely needed.

## References

- Adelman, M.A. Comment on the "H" Concentration Measure as a Number-Equivalent, *Review of Economics and Statistics*, 1969, 51(1), 99-101.
- Ahmed, N.N. *Studies in the Banking Culture*, first edition, Amman, 1984 (in Arabic).
- Bain, J.S. Workable Competition in Oligopoly, *American Economic Review*, 1950, 40(2), 35-37.
- \_\_\_\_\_. Relation of Profit Rate to Industry Concentration: American Manufacturing, 1936 to 1940, *Quarterly Journal of Economics*, 1951, 65(3), 293-324.
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- Baumol, W.J., Panzar, J.C. and Willig, R. *Contestable Markets and the Theory of Industry Structure*, New York: Harcourt, Brace and Javanovich, 1982.
- \_\_\_\_\_ and Willig, R.D., Contestability: Since the Book, *Oxford Economic Papers*, 1986, 38(Supplement), 9-36.
- Brozen, Y. *Concentration, Mergers, and Public Policy*, New York: Macmillan Publishing Company, Inc., 1982.
- Clark, J.A. Single-Equation, Multiple Regression Methodology: Is It an Appropriate Methodology for the Structure-Performance Relationship in Banking? *Journal of Monetary Economics*, 1986, 18(3), 259-312.
- Demsetz, H. Industry Structure, Market Rivalry and Public Policy, *Journal of Law and Economics*, 1973, 16(1), 1-9.
- Dennis, G.E. *Monetary Economics*, London: Longman Group Limited, 1981.
- Edwards, F. Managerial Objectives in Regulated Industries: Expense-Preference Behavior in Banking, *Journal of Political Economy*, 1977, 85(2), 147-162.
- Fanik, F. Jordan Banks Profitability, *A Financial Analytical Study for the Profitability of the Licensed Banks*, Amman, 1981 (in Arabic).
- Gilbert, R.A. Bank Market Structure and Competition: A Survey, *Journal of Money, Credit, and Banking*, 1984, 16(4), 617-645.
- Glassman, C.A. and Rhoades S.A.; Owner Vs. Manager; Control Effects on Bank Performance, *Review of Economics and Statistics*, 1980, 62(2), 263-270.
- Goodfriend, M. and King, R.G. Financial Deregulation, Monetary Policy, and Central Banking, *Economic Review*, Federal Reserve Bank of Richmond, 1988, 2, 3-20.
- Heggested, A.J. Market Structure, Risk and Profitability in Commercial Banking, *Journal of Finance*, 1977, 32(4), 1207-1216.
- \_\_\_\_\_ Market Structure, Competition, and Performance in Financial Industries: A Survey of Banking Studies, in *Issues in Financial Regulation*, Edited by Franklen R.E., New York: McGraw-Hill, 1979, 449-490.
- \_\_\_\_\_ and Mingo, J. J. Prices, Nonprices, and Competition in Commercial Banking, *Journal of Money, Credit and Banking*, 1976, 8 (2), 107-117.
- Peltzman, S. The Gains and Losses from Industrial Concentration, *Journal of Law and Economics*, 1977, 20(3), 229-263.
- Rhoades, S.A. and Rutz, R.D. Market Power and Firm Risk: A Test for "Quiet Life" Hypothesis, *Journal of Monetary Economics*, 1982, 9(1), 73-85.
- Rose, S. and Fraser, D.R. The Relationships between Stability and Change Market Structure: An Analysis of Bank Prices, *Journal of Industrial Economics*, 1976, 24(2), 251-266.
- Scherer, F.M. *Industrial Market Structure and Economic Performance*, Chicago: Rand McNally College Publishing Company 1970.
- Schweiger, I. and McGee, J.S. Chicago Banking: The Structure and Performance of Banks and Related Financial Institutions in Chicago and Other Areas, *Journal of Business*, 1961, 34(2), 203-366.
- Smirlock, M. Evidence on the (Non)Relationship Between Concentration and Profitability in Banking, *Journal of Money Credit and Banking*, 1985, 17(1), 69-83.
- Ziad, R. *Banking Management, A Practical Study in Jordan*, Third edition, Amman, 1982 (in Arabic).
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## Appendix A

## INFORMATION ON COMMERCIAL BANKS IN JORDAN

Rank <sup>(a)</sup>	Names <sup>(b)</sup>	NBR <sup>(c)</sup>	1984	1988
(1)	Arab Bank Ltd.	(1)	20	25
(2)	Housing Bank	(2)	71	85
(3)	Petra Bank	(3)	18	26
(4)	Jordan Islamic Bank	(4)	10	13
(5)	Cairo-Amman Bank	(6)	13	18
(6)	Jordan-Kuwait Bank	(5)	12	14
(7)	Jordan National Bank	(7)	28	30
(8)	Jordan and Gulf Bank	(9)	18	22
(9)	Bank of Jordan Ltd	(8)	22	23
(10)	Arab-Jordan Invest- ment Bank	(10)	2	1
(11)	(*) The British Bank of the Middle East	(11)	4	4
(12)	(*) Bank of Credit and Commerce Interna- tional	(12)	3	2
(13)	(*) Grindlays Bank ANZ	(13)	13	12
(14)	(*) Citibank	(14)	1	1
(15)	(*) Arab Land Bank	(15)	8	8
(16)	(*) Rafidain Bank	(16)	4	2

(a) On the basis of the value of  $(TD_i/\Sigma TD_i)$ , where  $TD_i$  is bank(i)'s total deposit averaged over the 1986-1988 period and  $\Sigma TD_i$  is the Jordanian Commercial banks' total deposits averaged over the 1986-1988 period.

(b) The number in the parenthesis show the rank of each bank based on its total assets.

(c) Number of bank branches.

(\*) Denotes foreign banks.

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**Abstract**

*The aim of this study is to test empirically the structure-performance (S-P) hypothesis within the institutional context of the Jordanian commercial banking system. The study utilizes cross-sectional data collected from the whole sample of 16 commercial banks in Jordan over the five consecutive years from 1984-1988. To fulfil its aim, a bank profitability model is formulated under the methodological guidelines of the existing studies in the empirical literature.*

*Even though the study presents some empirical evidence in support of the S-P hypothesis within the Jordanian commercial banking system, the role of the market concentration variable in the determination of bank profitability cannot be emphasized. The main reasons for this are the appearance of the market growth variable as a potentially influential factor in the bank profitability relation and the empirical ambiguity introduced into the equation by the risk variable. Consequently, it should be underlined that the empirical findings of the present study cannot be extended to make strong policy suggestions in the direction of more restrictive (or lenient) banking regulation.*



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## ETUDE D'INVESTIGATION EMPIRIQUE SUR LES RELATIONS ENTRE CONCENTRATION ET RENTABILITE DANS LE SYSTEME BANCAIRE JORDANIE

### RESUME

*Le but de cette étude est d'examiner empiriquement la performance structurelle (P-S) des hypothèses du contenu institutionnel du système bancaire commercial Jordanien. L'étude a utilisé des données (cross - sectionnelles) prises des (16) banques commerciales existantes en Jordanie et pour une période de cinq ans successives (1984-1988). Afin de compléter cet objectif, un modèle de la rentabilité bancaire a été formé d'après des indicateurs méthodologiques des études existantes dans la littérature empirique.*

*En fait, cette étude présente quelques evidences empiriques qui appuient les hypothèses du (P-S), du système bancaire commercial Jordanien, mais le rôle variable de la concentration du marché dans la détermination de la rentabilité bancaire ne peut être généralisé.*

*Et dont les raisons principales, reviennent à l'apparence du développement variable du marché comme un facteur potentiel d'influence sur la relation entre la rentabilité bancaire et l'ambiguïté empirique introduite dans l'équation par le changement du risque.*

*En conséquence, il faut souligner que les résultats empiriques de cette étude ne peuvent s'étendre pour présenter des propositions d'une forte politique qui s'étend vers la modification des règlements bancaires actuels.*