Bank capital adequacy and its impact on profitability and market value indicators: An applied study

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Abstract: The study aimed to know the impact of capital adequacy on the profitability of commercial banks, as well as knowing the impact of capital adequacy on shares' prices of commercial banks in the Iraqi stock market. The study is targeted a group of commercial banks operating in Iraq, and therefore the importance of this study comes to determine relationship between capital adequacy and its impact on the profitability growth of commercial banks in Iraq. And knowing the extent to which the share prices of these banks are affected by the capital adequacy rate. The panel data simple was applied to reveal the nature of the relationship between capital adequacy and the profitability and stock prices for a sample of 8 Iraqi commercial banks for the period 2011 to 2018.

The study proved that capital adequacy could negatively affects the profitability of ROE, which means that an increase in capital adequacy by one unit will lead to a reduction in the profitability by (0.005) units, and also that capital adequacy negatively affects stock prices commercial banks. This means that an increase in capital adequacy by one unit will lead to a decrease in the share prices of commercial banks by (0.0029) units. Hence, and through the results that have been reached, the appropriate ratio of capital adequacy must be maintained and not to increase it in random and unstudied ways because that It will negatively affect the volume of profits realized by banks and their market shares value.

كفاية رأس المال المصرفي وأثره في مؤشري الربحية والقيمة السوقية: دراسة تطبيقية

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المستخلص

هدفت الدراسة إلى معرفة اثر كفاية راس المال على ربحية البنوك التجارية، وكذلك معرفة اثر كفاية راس المال على أسعار اسهم البنوك التجارية في سوق العراق للأوراق المالية، وكانت العينة المستهدفة في الدراسة هي مجموعة من البنوك التجارية العاملة في العراق، وتأتي أهمية هذه الدراسة لتحديد العلاقة بين كفاية راس المال ومدى تأثيرها على نمو ربحية البنوك التجارية في العراق، ومعرفة مدى تأثر أسعار اسهم هذه البنوك بمعدل كفاية راس المال، وتم تطبيق أسلوب البيانات اللوحية للكشف عن طبيعية العلاقة بين كفاية راس المال وربحية البنوك التجارية وأسعار الأسهم لعينة من البنوك التجارية العراقية وعددها 8 وللمدة 2011 لغاية 2018، وتم استخدام غير متوازنة (Unbalanced Panel data) لعدم توفر بيانات بعض البنوك خلال مدة الدراسة وقد أثبتت الدراسة ان كفاية راس المال CA تؤثر بشكل سلبي على ربحية البنوك التجارية ROE عينة البحث، وهذا يعني ان زيادة كفاية راس المال بمقدار وحدة واحدة سوف يقود الى تقليص ربحية البنوك التجارية بمقدار (0.005) وحدة، وكذلك ان كفاية راس المال CA تؤثر بشكل سلبي على أسعار اسهم PS البنوك التجارية، وهذا يعني ان زيادة كفاية راس المال بمقدار وحدة واحدة سوف يقود الى انخفاض أسعار اسهم البنوك التجارية بمقدار (0.0029) وحدة، ومن خلال النتائج التي تم التوصل اليها يجب الحفاظ على النسبة الملائمة من كفاية راس المال وعدم زيادة هذه النسبة بصورة عشوائية وغير مدروسة لان ذلك سوف يؤثر بشكل سلبي على حجم الأرباح المتحققة للبنوك التجارية وقيمة أسهمها السوقية.

الكلمات المفتاحية: كفاية راس المال، ربحية البنوك التجارية، قيمة السهم السوقية، البنوك التجارية.

Introduction

The issue of banking capital adequacy and the tendency of banks to strengthen their financial positions is one of the most important modern trends in the management of banks. Which has developed significantly in the last quarter century in light of banking system efforts of the world countries to develop their competitive capabilities in financial transactions field after taking into account the developments of successive events that occurred in global markets. Therefore, any bank became exposed to banking risks due to local or global competition, and from this point, searching for new mechanisms has begun to confront these risks to which banks are exposed, and thereby the first step in this direction was Basel Committee formation on Banking Supervision.

After an implementation of Basel Agreement (1), the world witnessed a tremendous development of financial management field, which helped to reduced several financial crises consequences. Then it became called Basel (2) after fundamental amendments were required to include an integrated system for managing risks in the banking sector (credit risk, market risk, and operational risk, in addition to regulatory supervision and market discipline. The Basel (3) agreement then later showed up to make the banking sector safer and less risky).

1-2. Research problem: The research problem can be clarified through the following questions:

A. How does bank capital efficiency affect banks' profitability?

B. Is there a relationship between banks' capital efficiency and banks' market value indicators?

C. What measures can be taken to enhance the efficiency of banking capital and thus improve the profitability and market value of banks?

1-3. The importance of the research: This study seeks to determine the relationship between capital adequacy and the extent of its impact on the profitability growth of commercial banks in Iraq, and also to know the extent to which the share prices of these banks are affected by the capital adequacy rate.

1-4. Research objectives: The objectives of the current research are as follows:

A. Analyzing the impact of the efficiency of banking capital on the profitability of banks, by studying the relationship of capital to the financial returns of financial institutions.

B. Study the impact of bank capital efficiency on banks' market value indicators, to understand how the market evaluates banks' performance and financial strength.

C. Analysis of success factors that increase the efficiency of banking capital, which can contribute to enhancing profitability and market value.

D. Providing practical recommendations and guidance for banks and monetary policies to enhance capital efficiency and improve profitability and market value.

1-5. Research hypothesis: In view of the study problem and its objectives, the research hypotheses can be formulated as follows:

1-5-1. There is a statistically significant relationship between capital adequacy according to the decisions of the Basel Committee and the rate of return on assets.

1-5-2. There is a statistically significant relationship between the capital adequacy ratio according to the decisions of the Basel Committee and the market value of the stock.

1-6. Research methodology: The research methodology relied on primary sources of collecting and analyzing data from the financial statements of commercial banks operating in Iraq and analyzing these data using panel data program. In addition to secondary sources of books, magazines, and published articles.

Theoretical framework for the study

First topic: capital adequacy

First - The concept of capital adequacy: It is the amount of capital owned by the bank so that it can perform all its functions and activities without being exposed to risks and liquidation. Therefore, the higher the financial solvency of the bank, the lower probability of bank insolvency. Another concept, capital adequacy also means the size of bank's capital that is sufficient to absorb losses that may occur because of operations of granting credits, investment, or any other operations the bank may carry out in the framework of its money investment. So, the sufficient capital serves to provide reassurance to depositors and the regulatory authorities (Mohammed, 2021: 40).

Second - The importance of capital adequacy: Capital adequacy provides the bank with an ability to deal with liquidity problems and increases its ability to face losses which leads to satisfy each of depositors and owners. This matter would lead the financial system in general and banking in particular to be more stable if the banks have capital strong and sufficient money. So, it can be say that the purpose of setting standards for the bank capital adequacy is to ensure that the bank maintains a minimum of its own funds to face the potential risks to which it is exposed. In order absorb the effects of these losses while giving the bank's management the motivation and incentive to set sound investment policies (Al-Harith, Hazuri, 2017: 284).

Third: Sure, here's a rephrased version of the sentence: Capital adequacy indicators assess the ability of financial institutions to withstand various shocks affecting assets' price ranges. Their importance lies in considering the most significant financial risks encountered by these institutions, including

exchange rate fluctuations, credit risks, and interest rate risks. Additionally, these indicators go beyond merely calculating risks within financial portfolios. Among these indicators we mention the following:

A. Aggregate risk-adjusted capital ratios: This indicator is measured by way of capital ratio to a collection of threat-weighted assets. A lower on this ratio approach an growth in the publicity of price range objects to risks and the opportunity of a capital adequacy lack to satisfy those dangers.In addition to, its components differ in their ability to absorb external shocks within the expanded capital classifications known as tier one, tranche second and tranche third capital.

B. Frequent distribution of capital ratios: These measures are used to avoid problems arising from the aggregation process. They are useful in looking at the capital rates of a single financial institution. For example, calculating capital adequacy rates for a group of institutions such as the three largest banks or calculating capital adequacy rates for banks publicly owned, or even looking at the capital adequacy rates of some banks that do not meet international or local standards.

Fourth - Capital Adequacy Calculation Developments: The methods of calculating capital adequacy for banks went through several stages that reflected the development in the banks' management in general and in risk management in particular. According to financial indicators and ratios, they can be summarized as follows:

1. The rate of the bank's ability to return deposits: it means the owned capital percentage to the total deposits and the banks' ability to return deposits from its capital. It is considered one of the most popular measures which assumed that the equity ratio of equity to deposits should not be less than 10%.

2. Capital (equity)/total assets: it links the owned capital to the assets because the loss that the capital bears is caused by the use of funds and there is no optimal ratio for it. The higher the ratio, the more this indicates the energy of the bank's financial position.

3. Capital/risk assets: It is considered a continuation of the previous measure, and risky assets are considered a structure of assets, except for cash in the fund and with the central bank, government bonds, loans granted to the government and countries.

4. Basel agreements and their amendments related to capital adequacy (BaseI, Basel II, Basel III) (Najat, 2017: 19-20).

Fifth - Capital adequacy and Basel 3 requirements, as shown below:

The first requirement: Which focuses on improving the nice, shape and transparency of the banks' capital base, wherein the concept of center capital became limited to subscribed capital and undistributed income in addition to capital devices that aren't conditional on returns and are not limited to an adulthood date. As for the subsidized capital, the agreement stipulates that capital's function being limited to capital units which restricted for as a minimum 5 years and are able to bearing losses earlier than deposits are made or before other liabilities of third events.

Fourth requirement: This axis aims to prevent banks from adopting lending policies that deepen the economic stagnation, as they reduce financing and lending in recession days and increase financing in growth stages.

Fifth axis: It is related in deal with liquidity issue, which became more important during the recent global crisis. The axis turned into proposed to adopt two ratios, the primary one is the liquidity coverage ratio, which requires banks to preserve assets with a excessive degree of liquidity to cowl the coins go with the flow. While the second ratio is related to the measurement of medium and long-term liquidity, which aims for banks to have stable sources of financing for their activities, which is also called the stable net fund ratio. The capital adequacy ratio according to the Basel III agreement is as follows. (Debeck, 2015:17).

$$Capital\ adequacy = \frac{Capital\ adequacy\ that\ represents\ the\ regulatory\ capital}{operating\ risk + market\ risk + credit\ risk} \geq 10.5\%$$

The second topic: Bank profitability and stock market value

First: Profitability definition: Profitability is defined as "the ratios that mirror the extent of the financial institution's ability to generate income from the assets available to it." Profitability ratios are one of the most difficult developments for the bank as a idea and as a measurement; This is because of the absence of an incorporated approach that determines while the financial institution could be in a profitable function. As many investment possibilities include sacrificing the present-day profit in order to reap a greater profit within the destiny (Al-Dulaimi, 2018: 36).

Second: the concept of bank profitability: profitability is usually considered a form of retained earnings and it is one of the main sources of money generation. So, it is known as "the revealing indicator of the bank's

competitive position in banking markets and the quality of its management",
and some define it from an accounting and economic point of view as "the
increase in wealth that it ensures that the revenue generated exceeds the total
costs in addition to the opportunity costs during a certain period. (Naziha,
Ahlam, 2019: 18).

Third: The quality of profitability of commercial banks: Certainly, here's a
rephrased version of the text:

"The profitability quality indicator holds paramount importance for all
banks, as it is critical for their sustainability and ongoing operations. Both
investors and lenders rely on this indicator when engaging with a bank, and
it serves as a vital tool to assess the management's efficiency in utilizing the
available resources.

Fourthly, Profitability Metrics: Commercial banks, in particular, strive to
achieve the highest possible profitability. Therefore, a set of financial ratios
has been formulated for this purpose." which is to measure the efficiency and
effectiveness of the bank in generating profits. The bank therefore that does
not obtain sufficient profits, its staying for a long time in the competitive
market will be fraught with risks. This reason the profitability ratios are the
most indicative tools of the commercial bank performance during a certain
period. (Saleh & Others, 2021:24).

Indicators for measuring profitability include:

1. Rate of return on equity (ROE): It method the go back amount that owners
   get due to investing their cash with the power and bearing risks. It is based
   on the concept of complete earnings, as it's far measured thru the subsequent
   equation:

$$ROE = \frac{Net\ profits}{total\ equity} \times 100$$

   *The rate of return on equity Is the maximum comprehensive measure of
   control effectiveness because it measures property profitability and the
   capital shape profitability. It is a measure of the profitability of each funding
   and financing selections.*

2. Return on assets (ROA): The rate of return on assets expresses the
   relationship between profits and the amount of funds available to
   management, as it measures the ability to make profits from the funds
   available to management regardless their financing method. It reflects the
   operating and investment activities of the enterprise and does not reflect the

financing activities in organization's profitability and its calculation's method as bellow:

$$ROA = \frac{Net\ profits}{total\ assets}$$

3. Asset Utility (AU): It is called the use of assets, as this indicator indicates the optimal utilization of assets in the sense of asset productivity, and it is measured by the following equation:

$$AU = \frac{total\ revenues}{total\ assets}$$

4. Profit Margin (PM): which reflects the efficiency in managing and controlling costs and is measured by the following formula:

$$PM = \frac{Net\ income}{total\ assets}$$

Fifth- Market value: which means the value of traded shares in the stock market. It equals to the shares number multiplied by the selling price per share during a certain period.

Sixth - Factors affecting the market value of the shares: The market value of shares is affected by several factors, which are Investors' expectations to predict future earnings per share, the amount of dividends expected to be distributed, as well as the expected economic and political conditions.

Seventh- Earnings per share: It must include disclosure in a way available to all investors because it is supposed to have an important role in making investment decisions. In light of this, the International Accounting Standards Board issued the International Accounting Standard No. (33) for earnings per share.

This standard, thus, aims to describe the required principles and how to determine earnings per share. In order to improve performance comparisons between different facilities for same financial period as well as different financial reporting periods for the same facility (Nasr, 2015: 28).

The third topic

Practical framework Standard approach to research

According to (Al-Jammal, 2012, 270), the general form of the panel data form is:

$y_{it} = \beta_{o(i)} + \sum_{j=1}^{k} \beta_j\ X_{j(it)} + \varepsilon_{it}$ ……………..

whereas:

Yit: dependent variable

$\beta o(i)$: the point of intersection of the view i

βj: the value of the regression line slope

X j(it): the value of the explanatory variable j in observation i at time t

ε it: random error

Where the panel data is balanced (Wooldridge, 2016) If all observations are identical for the have a look at sample, while it would be unbalanced if some observations of study sample were missing. Therefore, panel data models Certainly, here's a rephrased version of the sentence:

"Receive growing interest, especially in the field of economics, because it considers the impact of variations across different sections and the effects of changes over time." (Baltagi, 2005).

Worked search form: The research assumes that capital adequacy in the banks of the study sample affects the profitability and stock prices of commercial banks, as in the following model.

Yi= a + bXi+ ui

Where;

Yi: represents one of the dependent variables (bank profitability or stock price)

Xi: represents capital adequacy

Ui: random error

The panel facts method may be applied to show the nature courting among capital adequacy and profitability of business banks and stock prices for a pattern of eight Iraqi commercial banks for the duration 2011 to 2018, and an unbalanced panel statistics become used for the dearth of facts for a few banks in the course of the observe length.

First: The effect of capital adequacy at the profitability of commercial banks:

The following table shows the effect of capital adequacy on the profitability of the commercial banks in the research sample, as follows:

Certainly, here's a rephrased version of the information:

"Table 1

Dependent Variable: Return on Equity (ROE)

Method: Panel Least Squares

Date: October 9, 2020, Time: 14:00

Sample Period: 2011-2018

Number of Periods Included: 8

Number of Cross-Sections Included: 10

Total Observations in the Unbalanced Panel: 77

Standard Errors and Covariance calculated with Period-Corrected Standard Errors (PCSE) and Degrees of Freedom (d.f. corrected)."

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.152280	0.706831	8.704027	0.0000
CA	-0.005685	0.002446	-2.324065	0.0231

Effects Specification

Period fixed (dummy variables)			
R-squared	0.431334	Mean dependent var	5.167442
Adjusted R- squared	0.364432	S.D. dependent var	6.226834
S.E.of regression	4.964187	Akaike info criterion	6.151845
Sum squared resid	1675.734	Schwarz criterion	6.425796
Log likelihood	-227.8460	Hannan-Quinn criter	6.261423
F- statistic	6.447270	Durbin-Watson stst	0.710196
Prob (F-statistic)	0.000003		

Source: Eviews 10 program output.

The results of Table (1) Showed that the best version for estimating the connection between capital adequacy and the profitability of commercial banks is that Fixed Effects Model is desired, because when conducting a comparison test between the Pooled Regression Model and the Fixed Effects Model or Random Effects Model. The alternative hypothesis was accepted at a level less than (0.05). Which suggests the use of the fixed effects model in estimating the relationship.

Based on the results of Table (1) above, it was found that Capital Adequacy negatively affects the profitability of banks profitability. This method that a boom in capital adequacy by using one unit will lead to a reduction in the profitability of industrial banks by (0.005) units. Also, the capital adequacy parameter is concerned according to the t-test at a level less than (0.01), and the equation as a whole is significant according to the F-test and at a level less than (0.01).

This result is consistent with the economic logic, because increasing the capital adequacy means increasing a larger part of the bank's financial resources to face potential credit risks and thus reducing the bank's investments and thus reducing the bank's profitability.

Second: The effect of capital adequacy on stock prices;

Table (2): shows the effect of capital adequacy on the share prices of commercial banks, as follows:

Dependent Variable: PS

Method: Panel Least Squares

Date: October 9, 2020, Time: 14:00

Sample: 2011-2018

Periods included: 8

Cross-sections included: 9

Total panel(unbalanced) observations: 66

Period weights (PCSE) standard errors and covariance (d.f. correct).

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.418069	0.233262	6.79293	0.0000
CA	-0.002909	0.001335	-2.179090	0.0335

Effects Specification

Cross-section fixed (dummy variables)			
R-squared	0.218479	Mean dependent var	0.943030
Adjusted R- squared	0.092877	S.D. dependent var	0.795470
S.E.of regression	0.757629	Akaike info criterion	2.421482
Sum squared resid	32.14411	Schwarz criterion	2.753248
Log likelihood	-69090890	Hannan-Quinn criter	2.552578
F- statistic	1.739461	Durbin-Watson stst	0.552866
Prob (F-statistic)	0.101416		

Source: Eviews 10 program output.

Based on table (2) results, the capital adequacy negatively is affecting the selling price of commercial banks This means that a boom in capital adequacy by one unit will lead to a lower in the industrial banks' shares expenses by (0.0029) units. Also, the capital adequacy parameter was significant according to the t-test at a level less than (0.05), and the equation as a whole is considered significant also according to the F test and at the level (0.10). This result is consistent with economic logic since the capital adequacy increasing means increasing a larger part of the bank's resources to face potential credit risks. This might lead a decrease in the profitability of banks, and therefore the demand for the shares of these banks will decrease. Hence, this ends in a decrease in the charges of their shares within the economic market.

Conclusions

1. Capital efficiency appears to have a negative impact on the profitability of commercial banks as research shows that improving capital efficiency reduces bank profitability.

2. Research also shows that capital efficiency has a negative impact on commercial banks' stock prices and that increasing capital efficiency will increase the decline in bank stock prices.

3. The results reflect an important economic concept; This means that improving capital efficiency means allocating a greater proportion of resources to risks, leading to a reduction in other investments and therefore a reduction in profitability.

4. The results also confirm that increased capital efficiency leads to a decrease in demand for bank stocks, which in turn negatively affects their prices in the financial market.

Recommendations:

1. Commercial banks should carefully evaluate their capital structure and strive to achieve a balance of efficiency so that they can maintain appropriate levels of profitability without significant adverse impact.

2. Banks should try to improve capital efficiency to avoid investors' concerns, taking into account the impact of increased capital efficiency on stock prices.

3. Banks should seek to improve capital efficiency, for example by improving their internal processes and risk management, thereby reducing their negative impact on profitability.

4. Banks also need to examine the impact of increased capital efficiency on the demand for shares and develop strategies that will increase the attractiveness of stocks for investors in light of these changes.

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