THE RELATIONSHIP BETWEEN FINANCIAL ENGINEERING AND FINANCIAL PERFORMANCE WITH INTERNAL CONTROL AS A MODERATOR IN IRAQI BANKS

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SULTAN IDRIS EDUCATION UNIVERSITY
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ABSTRACT

The purpose of this study was to examine the relationship between financial engineering and financial performance using internal control as a moderating variable in Iraqi banks. A quantitative approach using Structural Equation Modeling (SEM) was utilized as research design to answer six research questions and ten hypotheses. The sample consisted of 377 respondents comprising managers (n=49), account managers (n=177), audit managers (n=61), finance managers (n=90) from 710 Iraqi bank branches that were selected using a stratified random sampling. Seven sets of questionnaire were used as instrument to collect the data. SEM was used to analyze the data. In general, the result showed a strong and significant correlation (r=0.85; p<0.05) between financial engineering and financial performance as perceived by the respondents. Specifically, the findings showed a positive relationship between financial engineering factors, namely, investment strategies (β=0.311, p<0.05), market innovation (β = 0.293, p<0.05), process innovation (β =0. 0.214, p<0.05) and risk management (β =0.238, p<0.05) with financial performance of Iraqi banks with the exception of technological innovation (β = -0.042, p> 0.05). Furthermore, this study found that internal control (r=0.78;<0.05) acted as a moderating variable between financial engineering factors and financial performance. In conclusion, this study found that financial engineering factors have positive effect on financial performance. In addition, internal control has acted as a significant moderating variable between financial engineering factors and financial performance in Iraqi banks. The implication of this study suggests that banking system in Iraq to focus on financial engineering factors which have effect on financial performance and internal control serves as influential moderator between financial engineering factors and financial performance.

HUBUNGAN ANTARA KEJURUTERAAN KEWANGAN DAN PRESTASI KEWANGAN DAN KAWALAN DALAMAN SEBAGAI MODERATOR DALAM BANK-BANK DI IRAQ

ABSTRAK

Objektif kajian ini adalah mengkaji hubungan kejuruteraan kewangan dan prestasi kewangan menggunakan kawalan dalaman sebagai pembolehubah penyederhana dalam kalangan bank di Iraq. Reka bentuk penyelidikan kuantitatif menggunakan model persamaan berstruktur (SEM) digunakan untuk menjawab enam persoalan kajian dan menguji sepuluh hipotesis. Sampel seramai 377 responden terdiri pengurus (n=49), pengurus akaun (n=177), pengurus audit (n=61), pengurus kewangan (n=90) daripada 710 cawangan bank di Iraq dipilih menggunakan pensampelan rawak berstrata. Soal selidik mengandungi tujuh bahagian soalan digunakan sebagai instrumen kutipan data dan ianya dianalisis menggunakan SEM. Secara umum, keputusan menunjukkan hubungan yang kuat dan signifikan (r=0.85; $p<0.05$) antara kejuruteraan kewangan dan prestasi kewangan. Secara khusus pula, dapatan kajian menunjukkan hubungan yang positif antara faktor kejuruteraan kewangan iaitu strategi pelaburan ($\beta=0.311$, $p<0.05$), inovasi pasaran ($\beta=0.293$, $p<0.05$), inovasi proses ($\beta=0.214$, $p<0.05$) dan pengurusan risiko ($\beta=0.238$, $p<0.05$) dengan prestasi kewangan bank di Iraq kecuali faktor inovasi teknologi ($\beta = -0.042$, $p> 0.05$). Selain itu, kajian ini juga mendapati kawalan dalaman (r=0.78;<0.05) bertindak sebagai pemboleh ubah penyederhana antara faktor kejuruteraan kewangan dan prestasi kewangan. Kesimpulannya, kajian ini mendapati faktor kejuruteraan kewangan mempunyai kesan positif terhadap prestasi kewangan. Tambahan pula, kawalan dalaman bertindak sebagai pemboleh ubah penyederhana antara kejuruteraan kewangan dan prestasi kewangan bank di Iraq. Implikasi kajian ini mencadangkan agar sistem perbankan di Iraq memberikan tumpuan kepada faktor kejuruteraan kewangan kerana ianya mempengaruhi prestasi kewangan dan kawalan dalaman yang menjadi pemboleh ubah penyederhana berpengaruh antara faktor kejuruteraan kewangan dan prestasi kewangan.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

AVE	Average Variance Extracted
BTS	Bartlett's test of sphericity
CAMELS	Capital adequacy, assets quality, management efficiency, earnings Performance, Liquidity, sensitivity.
COSO	Committee of Sponsoring Organizations
CR	Composite Reliability
DEA	Data envelope analysis
EPS	Earnings per share
EFA	Exploratory Factor Analysis
EVA	Economic valued added
F Square	Effect Size
FA	Factor Analysis
FP	Financial Performance
GOF	Goodness Of Fit Of The Model
IS	Investment Strategies
IC	Internal Control
KMO	Kaiser-Meyer-Olkin
MSA	Measures Sampling Adequacy
MI	Market Innovations
NIM	Net interest margin
OECD	Organization for Economic Co-operation and Development
PLS	Partial Least Squared
PI	Product Innovations
PE	Process Innovations
Q^2	Construct Cross Validated Redundancy
R^2	Coefficient of Determination
RM	Risk Management
ROA	Return on assets
ROI	Return on Investment
ROE	Return on equity
RBI	Reserve Bank of India

ROCE	Return on capital employed
SE	Share earnings
SFA	Stochastic frontier analysis
IT	Information Technology
TE	Total earnings
TQM	Total Quality Management
VIF	Variance inflation factor

LIST OF APPENDICES

CHAPTER 1

INTRODUCTION

1.1　Introduction

This chapter provides the outline and background of the study and is followed by the presentation of the issues that have led to this study, namely, the problem statement, the research questions and the objectives and the significance of the study. Furthermore, a straightforward account of the significance of the scope of the study and the definition of key terms are also presented.

1.2　Research Background

The banking sector is considered an important economic sector and is the most seductive and influential one in the growth of the economies of countries. The banking sector is a vital centre of the economic and financial system through the mobilisation

of sufficient savings required by economic growth and efficient distribution of various investments (Salami, 2011). Banks are one of the major pillars in building the financial structure of countries. Commercial banks, in particular, are considered to be institutions that maintain money and mobilise community resources from money, so that money plays an improvement role (Revathy & Santhi, 2008). Mihoub (2014) pointed out the European countries' view of banks as a link between all sectors that are responsible for the process of cross-sector financial transfers across various transactions. Banks represent the place where sellers meet with buyers in one market. Growe et al. (2014) indicated that banks perform basic functions by combining depositors, borrowers, large and small enterprises and a variety of client services, such as lending, credit and investment. As a result of developments in the economic and financial conditions, the interest of US banks in financial uses arose when banks saw that the weakness of financial resources was exposed to numerous risks.

Zeitun and Benjelloun (2013) stated that these developments and changes have been a major competitive challenge for the European banks to adopt to these variables, to face their negative effects and to take advantage of the gains made by those banks. This challenge ultimately leads to developing banking services and keeping pace with the successive technological developments in the banking industry. Attention was brought to the quality of services and customer satisfaction as one of the main approaches to increase and develop the competitiveness of banks (Halili, 2014). Banks are constantly required to compete by increasing their ability to develop and innovate in the industry (Boyd et al., 2009). The experiences of developed countries have been clearly demonstrated (Samad & Glenn, 2012). The first signs of technological innovations (TI) emerged in the electronic banking services, the automated teller

machine (ATM), the electronic check and communications for the purpose of providing a variety of services that attract customers. Information technology (IT) has played an important and decisive role in promoting the work of US banks and the quality of services they provide (Thakur, 2018). In relation to this, TI consists of two parts: (1) hardware and software (Fujii et al. 2018) and (2) knowledge and skills regarding how to use machines and electronic devices. Electronic technologies include joint operations that connect the interviews through sales and purchases (Fujii et al. 2018). The effect has been clear on the French banks' use of TI in a wide range of areas, namely, the telephone, ATM, the Internet and digital television. Experts have been using the developments in information and communication technologies for decades and employing the potential of technology to attract and invest in them (Mihoub, 2014).The central payment system has become electronic and depends directly on the Internet. All these innovations have emerged as banks look for ways to serve customers rapidly with less effort and cost (Fujii et al. 2018).

Joseph et al. (2014) have shown that the impact of technological development on financial institutions is most important because banks play a key role in providing, financing and calculating savings, especially in emergency markets, compared to developed world markets. TI affects the financial performance (FP) of banks by enabling innovation to increase profits and reduce costs (Deloitte, 2007). Certain Asian and Middle Eastern countries have seen gains in the banking industry, as exemplified by China and Malaysia, because the banking sectors in these two countries are strong compared to other countries in the region, and the reason is their reliance on electronic innovations in their banking business. Kallio (2016) stated that TI have a direct impact on banking services, and in this regard, the banking sector does not differ from other

sectors in the field of innovation. Rubaie (2007) indicated that the electronic banking services are the result of the so-called e-commerce. Certain Jordanian banks offer payment services to their customers who shop electronically. Abdallah (2013) showed that TI come under the name of financial engineering, and it can be defined as innovation offering financial solutions based on the element of innovation and renewal, therefore meeting the existing needs, and provide banks the advantage of opportunities and resources that are disabled (Agboola, 2010) and this is one of the most important approaches used in the world of finance. This approach is important because the main objective of banks is to provide financial products to deal with the problems of financing and loan risks, credit and other banking activities. Banks rely on electronic commerce to expand markets, increase competition, satisfy customers, reduce costs and increase productivity (Al-Ajrami, 2011). Banks strive to achieve the highest return possible from their operations and look for new tools and methods to achieve profitability (Al-Fayoumi, 2001).

Banks should use techniques that help attract customers, reduce risk to the banks, improve banking performance and meet the requirements of different stakeholders for the pursuit of sound policies and for the increase of returns, maintenance of customers and consideration of owners' wishes (al-Ajrami, 2011). Technological innovations are considered by some as pervasive and must touch all economies, however weak or late they may be. Studies published from Saudi Arabia Mohammed (2001) evidenced that the extent to which developing countries rely on technological innovations begins in their early form, with the most widely used electronic banking tools in Gulf countries being electronic cards in Saudi Arabia, Kuwait, UAE, Qatar, Oman and Bahrain. This usage demonstrates the importance of

technological innovations and their effective role in improving banking services, upgrading banks' businesses, promoting competition and entering wide markets (Gunasekaran et al. 2006). In Algeria, the first development in the field of electronic services was marked via the expansion of the market shares of banks through the exit from the specialisation in finance to the possibility of investing in technological innovations in banking (Han, 2001) although Algerian banking was lagging behind the US and Europe. However, in Iraq, TI have had less impact than in other developing and developed countries.

Yasiri et al. (2014) found that the use of investment strategies (IS) in private commercial banks in electronic services appears on a small scale and is ineffective in meeting a good environment for growth. Al-Ajrami (2011) related that marketing innovation in Palestine has a good effect in achieving the competitive advantage of Palestinian banks. Recently, the entry of non-banking institutions into the field of financial work has been observed to increase competition and force financial and banking institutions to provide a comprehensive range of financial and banking services for increasing the functions of commercial and investment banks (Abu Zaater, 2006). A new type of bank has emerged known as a comprehensive bank that uses the technology of financial engineering techniques.

1.3   Problem Statement

The banking sector is an important economic sector which is influential in the growth of economics. Banking institutions play a critical function to develop innovations that drive the economy. As technological progress is one of the most important factors for

the growth of banks, it helps banks to provide services faster, at lower cost, and with higher quality (Thairu & Wahome, 2016). Commercial banks, in particular, are considered to be institutions that maintain money and mobilize community resources from money. Iraqi banks have suffered from instability since 1980 and so they have not kept pace with technological developments, which are still causing a lack of use modern technologies. Iraqi banks are still doing most of the operations and banking services manually, such as disbursement and receipt of money, opening bank accounts and communication with customers (Yasiri, 2014).

There are also a number of difficulties such as high costs, a lack of experience and knowledge, and limited services provided by government and private banks. Most Iraqi banks operate as safe and frozen deposit funds, with a liquidity ratio of more than 30% which is the legal rate. Iraqi banks are small in size compared to other Arabic Gulf banks. The value of assets and capital are still small and is not commensurate with recent developments and technological changes (Central Bank of Iraq, 2017). Furthermore, customers are taking a long time to receive banking services, and are difficult for citizens to access cash for holidays because they have failed to use ATM so far. In a certain situation Iraqi people mostly complaint about the lack of proficiency among the staff and the currency counterfeiting. In addition, there has been the contribution of the old laws and regulations that are in line with the stage of transformations and requirements of the mechanism of the market economy (Yasiri, 2014).

The methods adopted by Iraqi banks and the lack of use of modern technology have led to the slow financial performance. In addition, they also led to the inability of the

Iraqi banking sector to compete and provide new services and products, enter the global markets, there are no requirements for investment outside of Iraq. Iraqi banks do not have the ability to attract foreign investment. The Iraqi banks were also unable to support the Iraqi economy to face the financial crisis that Iraq is going through (Central Bank of Iraq, 2017).

Changes surrounding the banks represented by issues such as competition, developments in communication, information technology, progressive technology, creative financial solutions and technological innovations have led to a new financial field called financial engineering (Sarmad, 2018). Financial engineering can be defined as innovation offering financial solutions based on the element of innovation and renewal, thus meeting the existing needs and providing banks the advantage of opportunities and resources that are disabled (Agboola, 2010)

Financial engineering focuses on the innovation of modern financial instruments, investment tools and risk management. It also ensures that financial institutions and banks achieve their goals. In addition, the positive impact on the economy through the development of capital markets, supported them with financial tools and modern mechanisms achieve the objective of all parties (sarmad, 2018). Financial engineering includes numerous factors, where some studies adopted one factor of financial engineering (Hamza, 2018) and examined the relationship between investment strategies and performance of Iraqi commercial private banks. Some researchers adopted two factors (Yousef, 2018) and studied the impact of technological and process innovation on the efficiency of Kuwaiti banks, while (Lazo & Wotdesenbet, 2015) studied the effect of technological, market and process innovation on the performance

of banks. However, the present study chose five factors based on the problem described earlier as follows:

Investment strategies (IS) are critical for any investment by banks. Investment strategies are adopted at organizational and market levels, and therefore guidelines and regulations could be provided that lead to the best investments and thus increase the performance of banks (Yasiri, 2014). On the other hand, Wanalo (2018) stated that the adoption of technological innovations offers banking services to customers faster, of higher quality, at lower cost and also more securely. These innovations include the use of ATMs, the transfer of electronic funds, mobile banking and electronic checks, which could also be useful for enhancing the financial performance. Therefore, technological innovations will be adopted for this research.

On the other hand, investment strategies are in the interest of management of banks, because of its effective impact on banking activities. This is reflected in the economies of countries. It leads to increased competitive opportunities, increased market share and profits. It also focuses on foreign investment and there are benefits from such investments (Hamza, 2018). The study by Zabon (2018) recommended future studies on investment strategies in the light of recent technological developments and changes, and the appropriateness of developments. Therefore investment strategies in the light of progressive development should be one of the factors for financial engineering.

While market innovations provide a better understanding of competition requirements to achieve market share and competitive profits, it helps banks achieve a high level of customers' satisfaction and retention. It also gives banks access to new markets (Al-Ajrami, 2011). As Onduku (2013) pointed out, new business processes leading to increased efficiency in market efficiency, reorganization and overall quality control improves profitability and has positive effect on financial performance. Moreover, risk management under modern technology focuses on containing and dealing with risks or reducing them through continuation of policies and procedures related to the activities of banks. Banks are exposed to internal risks (credit and loan) and external risks (competition and financial crises) (Abdali, 2018).

Furthermore, banks now provide remote access services to customers such as electronic transfers, e-banking and internet communication, and these changes have raised concerns among customers because of the fears accompanying developments. The procedures of risk management of conventional banks are insufficient to face the risks arising from technological changes. These require the development and modernization of risk management procedures in order to meet the current risks in banks. Attia (2018) recommended future studies on risk management in the light of the challenges and technological progress. Therefore risk management has been chosen as one of the financial engineering factors.

The components of internal control, according to the Committee of Sponsoring Organization (COSO) model, are control environment, risk assessment, control activities, information and communication and monitoring (Jantan et al., 2005). This framework applies to all entities: small, medium and large, profit and non-profit

organizations, governments and statutory bodies (Bayyoud and Sayyad, 2015). The coverage to which each of the components has been implemented is usually influenced by such factors as the size and complexity of the organization, management philosophy and corporate culture. Several principles control the environment such as integrity, ethical values, board independence, and the method by which the management assigns authorities and responsibilities, and accountability that supports the components of internal control.

Furthermore, effective internal control is the cornerstone of successful management, and thus success of the banks' performance in response to rapid development in the banking industry. Many banks have faced serious challenges, particularly with the recent technological development. Effective internal control has the ability to enhance banks' performance through improving policies, procedures and practices (Ghali, 2013). The study by Mahmoud & Ahmed (2017) recommended that future studies should focus on internal control in response to the continuous technological changes in banks and focus on improving internal auditors to keep abreast of developments. Therefore this study will adopt internal control as a moderator in the relationship between financial engineering and financial performance as many advantages will help to strengthen this relationship and produce better results.

Furthermore, the independent variables (IVs) included in the theoretical frameworks are investment strategies (IS), technological innovations (TI), market innovations (MI), process innovations (PI), risk management (RM), and internal control (IC). The dependent variable (DV) is the financial performance (FP) of banks in Iraq. The determining relationship factors of financial engineering and the financial performance

of commercial banks in Iraq can enrich the knowledge of financial performance of banks. The knowledge obtained can produce a highly prominent theoretical perspective. The theoretical framework can facilitate in the attainment of banking services that are effective and meaningful among banks operating in Iraq, and this can improve the financial performance of banks in the country.

The theoretical framework illustrates the knowledge gap of research, which is represented in this study by five factors of financial engineering as an independent variable or alternative solutions of problem of Iraqi banks. In addition, it explains that this study has contributed to the addition of two factors to the theoretical framework, namely, investment strategies and risk management. Furthermore, this study will adopt internal control as a moderator in the relationship between financial engineering and financial performance.

1.4   Research Questions

The research questions formulated to achieve the purpose of this study are presented below.

The main question of this study is: what is the relationship between financial engineering and financial performance of commercial banks in Iraq?

The sub-questions of the study are:

1. What is the relationship between investment strategies (IS) and financial performance (FP) of commercial banks in Iraq?

2. What is the relationship between technological innovations (TI) and financial performance (FP) of commercial banks in Iraq?

3. What is the relationship between market innovations (MI) and financial performance (FP) of commercial banks in Iraq?

4. What is the relationship between process innovations (PI) and financial performance (FP) of commercial banks in Iraq?

5. What is the relationship between risk management (RM) and financial performance (FP) of commercial banks in Iraq?

6. Does internal control moderate the relationship between financial engineering and financial performance of commercial banks in Iraq?

1.5   Research Objectives

The objectives that this study seeks to achieve are presented below.

1.5.1   Main Objective

The main objective of this study is to examine the relationship between financial engineering and financial performance of commercial banks in Iraq.

1.5.2 Specific Objectives

The specific objectives of this study as follows:

1. To examine the relationship between investment strategies (IS) and financial performance (FP) of commercial banks in Iraq.

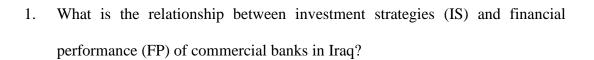2. To examine the relationship between technological innovations (TI) and financial performance (FP) of commercial banks in Iraq.

3. To examine the relationship between market innovations (MI) and financial performance (FP) of commercial banks in Iraq.

4. To examine the relationship between process innovations (PI) and financial performance (FP) of commercial banks in Iraq.

5. To examine the relationship between risk management (RM) and financial performance (FP) of commercial banks in Iraq.

6. To examine whether internal control moderates the relationship between financial engineering and the financial performance of commercial banks in Iraq.

1.6   Significance of Research

This study attempts to make theoretical and practical contributions, and it could provide the theoretical framework of the financial engineering factors and their direct relationship and financial performance. Moreover, it uses internal control as a moderator variable in the relationship between financial engineering and financial performance.

1.6.1 Theoretical Contributions

The current study contributes to the body of literature by responding to the need for empirical research on the relationship between financial engineering and financial performance in Iraqi banks. The theoretical contribution describing the framework explains the relationship between financial engineering and financial performance in the light of internal control as a moderator. In addition, the theoretical contribution covers the relationship between financial engineering factors and financial performance in Iraqi banks. Furthermore, the theoretical contribution can interpret the challenges that face financial engineering factors in Iraqi banks. This study will contribute to the addition of investment strategies (IS) to the theoretical framework and it will focus on other issues, especially foreign investment opportunities and their impact on the performance of banks . The addition of investment strategies to the theoretical framework of financial engineering factors will be a new contribution and this is unprecedented.

Moreover, this study will add risk management to the theoretical framework on the basis of recent modern technological changes. A new theoretical contribution is the adoption of internal control as a moderator in the relationship between financial engineering and efficiency performance in Iraqi banks as previous studies have shown a strong impact of internal control on the relationship between the financial engineering factors and financial performance in other fields. However, IC has not been adopted as a moderator between financial engineering and financial performance in banks. In addition, this study will be considered as new knowledge for the Iraqi library.

1.6.2 Practical Contribution

The practical contribution of this study to the benefit of managements and founders of Iraqi banks. The practical contribution identifies the relationship between financial engineering and financial performance in Iraqi commercial banks. In addition, it examines the effects of internal control as a moderator on the relationship between financial engineering and financial performance, and explores the research model of the internal control in the relationship. The practical contribution provides more insights into the relationship between investment strategies and financial performance, and more evidence about this relationship. The practical contribution also enhances understanding of the circumstances and capabilities of implementing financial engineering in Iraqi banks. Iraqi banks are seeking an appropriate way to use internal control and other related financial indicators to improve the financial performance. The framework of internal control is worthwhile to explore the criteria and dimensions that improve financial performance. The theoretical framework highlights the significant variables related to financial engineering to promote financial performance. Furthermore, this study contributes to the methodological aspects by further confirming the reliability and validity of these measurements in the field of finance.

1.7 Scope of Research

There are two types of commercial banks operating in Iraq, namely, government and private. Employees working in 30 commercial banks operating in Iraq were chosen as a sample to achieve the purpose of the study. The focal point of this study is the FP of

banks in Iraq and covers the regions of Baghdad, Basrah, Arbil, Al Najaf and the bigger part of the cities.

1.8   Definitions of Key Terms

Financial Engineering

Financial engineering is the phenomenon of product and/or process innovation in the financial industries and the development of new financial instruments and processes that can assist shareholders, issuers or intermediaries. Traditional definitions are inclined to place emphasis on conscious intent as an elemental feature, emphasising the formal, planned and deliberate aspects of the financial engineering process (Abdallah, 2013). Financial engineering includes numerous factors and means; however, the present study chose five factors as follows:

1. Investment Strategies (IS)

    A set of rules, policies and procedures that are formulated by the concerned authorities to guide the selection of appropriate investments, which achieves a balance between returns and risks, benefits from investment opportunities and the ability to achieve the goal of adding value to the institution through investment (Yasiri et al., 2014).

2. Technological Innovations (TI)

    A group of ideas, or a set of products, systems and modern technology that combine creativity and innovation (Lindgren, 2018). Porteous (2006) defined the technological innovations of the banking industry as represented by ATMs, e-

banking, e-transfer of money, online banking, the ability to open accounts online and mobile banking techniques.

3. Market Innovation (MI)

   Market Innovation refers to the improvement of the market mix through the establishment of new ideas and the placement of actual application of marketing activities. Market innovations focus on a product, whether it is a commodity or service, on price, promotion and distribution. All of these elements identify the best potential markets in the competitive environment to increase market share and thus profitability (Al-Ajrami, 2011).

4. Process Innovation (PI)

   Process innovation is the creation of new financial instruments that diversify financial tools and their means of delivery to achieve the efficiency of banking products and develop them to suit diverse financial and renewable needs. Process innovation determines solutions to the problems of financing to reduce costs and increase profits, facilitate competitiveness and provide services that are less expensive but have considerable quality, thereby attracting additional customers, and access to the largest number of markets expected (Mabrouk et al., 2016).

5. Risk Management (RM)

   Najjar (2003) described risk management as a comprehensive and continuous set of procedures and activities aimed at reducing the multiple adverse effects of different risk factors on the existence, reputation, continuity and value of a financial institution and its financial position.

Internal Control (IC)

Al-Imam et al. (2015) referred to internal control as a set of procedures and means used within the institution to ensure the accuracy and validity of the financial statements and the various reports, and the extent of commitment to follow the policies, the application of laws and the preservation of the assets of the institution. Internal control protects the institution from embezzlement and fraud to ensure the quality of information and encourage efficient work.

Financial Performance (FP)

The Financial Stability Report of Riksbank (2002) defined financial performance as the ability of banks to achieve sustainable benefits and to enhance their capital position and future benefits through retained earnings. Return on equity (ROE) is the extent to which banks use the funds of shareholders to earn profits and increase the value of their shares, and return on assets (ROA) reflects the extent to which banks use assets to generate profits and thus increase the value of banks.