

Toward a Comprehensive Model to Measure Bank's Performance: RESCO Model and Stability Scorecard.

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Abstract: *The main purpose of this paper is to present a comprehensive framework and model as a basis for measuring bank's performance and to draw a strategic map for senior managers and executives to enhance the overall bank's performance through identifying the most significant factors that may affect bank's performance. By combining qualitative and quantitative measures in a comprehensive report, this research is introducing a new integrated model called RESCO which rely on four main pillars: Risk Management, Efficiency, Corporate Governance and Financial stability in addition to open controllable variables which may represents other factors such as political risk, country risk...etc. The proposed model generate a Scorecard called "Stability ScoreCard "that aims to provide managers with better-off and more significant information about bank's performance than is provided by financial ratios only or one single factor alone. The importance of the proposed score card is that it could be used as a significant tool to ensure financial stability of banking system and to investigate the unstable pillar and factors that may significantly affect the financial performance and stability of banks, Accordingly, This Scorecard could be considered as early warning system for banking sector. That's to say Banks should prepare an action plan from management perspective and from authorities' perspective to protect the whole system from being collapsed.*

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I. Introduction

Financial stability is considered as a critical academic them in economics. Its significance boosted during the global financial crises which began in 2008 (Freitakas and Mendelsonas ,2015). The global economic crisis of 2008–2010, is generally viewed as the most horrible financial crisis ever since the Great Depression. The major consequences of the global financial crisis on world economy are revealed by the large number of banks and financial institutions that bankrupted, were bailed out or restructured(Andrieş A. & Ursu S.,2016).

Stable financial system is able to effectively assign economic resources, evaluate and manage financial risks in addition to sustaining high level of employment rate. In stable economic system, the financial system could absorb the sequences of financial shocks through self corrective instruments to stabilize the market and the whole system in an efficient manner. This paper is an attempt to construct a comprehensive model/ Framework to measure bank's performance and to identify the positive and negative sides in the financial institutions' performances to ensure a stable banking system and financial systems which are the core of global economic stability (Mohamed,2014).

1.1 Research Problem:

Measuring the performance of Banks is of a crucial importance to investors , authorities and economist .Financial system is dominated by banks which are considered as one of the most important source of finance across different economic sectors. Measuring banks performance based on one factor such as financial ratio may not provide a comprehensive view about their performance and may not be able to deeply investigate the consequences of different decisions across managerial levels. Financial ratios depend on historical data only and just measure the results but it doesn't provide the reasons and causes of these results. Also financial ratios don't provide an integrated approach to assess the managerial decisions and management quality. To the best of the researcher's knowledge, there is no comprehensive model to measure banks' performance.

After the global financial crisis 2007-2008 , there were several international reports published by international bodies such as OCED reports that addressed the global financial crisis was due to a lack of corporate governance and risk management in banking system. Also , the inefficiency of banks in allocating their resources was another main factor that contribute in global financial crisis. Although the financial figures of some banks in addition to credit rating showed that theses banks are in healthy financial position but this wasn't the truth .This happened due to lack of comprehensive measure of banks . To sum up, Stakeholders have

no comprehensive measure to inform them about the health of financial institutions and measure the causation factors that affect the banks' performance.

1.2. Research Objective:

The main purpose of this research is to propose a comprehensive framework and model as a basis for measuring bank's performance based on four main dimensions namely Risk management, Efficiency, Corporate Governance and Financial Stability based on literature review.

1.3. Research Importance

The Importance of this research from the academic point of view is that this paper will add a little to the body of knowledge about measuring banks' practices by an integrated measure concerning risk management, Corporate governance, financial stability and efficiency . This paper opens a new door for new trend and research to measure banks' performance not only relying on ratio analysis but relying on multidimensional factors. Accordingly, this paper is an attempt to fill the gap in the measuring tools of banks' performance and suggest a new model that built on four main factors namely: Risk Management, Corporate Governance, Efficiency and Financial stability. By combining qualitative and quantitative measures in a comprehensive report, the suggested model aims to provide researchers with better-off and more significant information about bank's performance than is provided by financial ratios only or one single factor alone.

The importance of this research from practical point of view is to draw a strategic map for senior managers and executives to enhance the overall bank's performance through building a model and introducing Stability Scorecard to identify the most significant factors that may affect bank's performance. The suggested model called RESCO© and will be converted into measurable drivers through a Stability Scorecard SSC © to achieve the following:

- To present a rational and comprehensive approach that drive bank's performance
- Enhance the harmony of integrated bank's performance and bank's strategy.
- Increase the awareness across all managerial levels with regard to performance and sustainability.
- Allow Senior Managers to professionally supervise and manage drivers that add value to the stakeholders.
- The Stability Scorecard gives top management an inclusive picture about the overall performance of the Bank based on four core perspectives/ dimensions.

II. Literature review

It's very helpful to review some theories that support the logic behind building the proposed model in this research paper in addition to previous researches that show the importance of the main dimension of the RESCO Model and its components.

2.1. Theoretical Background :

There is no doubt that information has become, in our time, a new and major resource for any organization regardless of the nature of its activity, size or ownership. Information is, in fact, either human resources or material resources.

Information for contemporary and successful business organizations has become the cornerstone upon which they rely on their business in the changing and complex business environment that surrounds the Organization now or in the future. Information represents the rationale for decision-making for modern management. Decisions made by management at all levels are no longer based solely on experience, intuition or guesswork .

Information is transferred between two parties ; the sender party and receiver party through channels .In financial world, information has become very important for making vital decisions such as investing, granting credit, entering new markets or even leaving. That the value of the information is derived from the degree of accuracy, timeliness, relevance and quantity. Based on this fact, communicating the significant information about the financial institution performance is very critical to all stakeholders for better decisions .In this context , Communication is defined as the behavior that involves the transmission of information and sensations by means of apparent physical or moral material with a view to identifying and influencing the elements of the communication process.

There are two theories that are linked to financial information generated by financial institutions and affect the decision makers such as: credit agencies, investors, capital markets and regulators. These two theories are: Signaling theory and Information asymmetry.

2.1.1. Signaling Theory:

The signaling theory originated from Arrow (1972) and Spence (1973). Signaling theory hypothesizes that companies with good performance have a tendency to make intentional disclosures more readily, to discriminate

themselves from others in the marketplace. Hence, the voluntary disclosure is positively related to company's good performance and quality.

Trujillo-Ponce, (2012) argued that when banks decide to increase capital this is considered as a strong signal that the bank has a promising future and anticipated investment plan. The majority signaling models incorporate quality as the distinctive characteristic, the conception of quality can be interpreted in a broad range of significant ways. Quality refers to the underlying, unobservable ability of the signaler to fulfill the needs or demands of an outsider observing the signal. (Connelly Brian L., *et.al*, 2011).

The signaling theory further hypothesizes that most of the profitable companies signal their competitive power via communicating new and significant information to market. Accordingly, information is disclosed by means of specific indicators or ratios which, very often, measure specific conditions on which to enter into or renew the agency contract (Bini *et.al.*, 2011).

2.1.2.Information Asymmetry Theory:

Information has an effect on the decision-making processes by different individuals across different community categories and across different managerial levels. Individuals rely on available public or private information to make their decisions. Accordingly, Information asymmetries happen when there is inequality of knowledge regarding specific information across different community members whom may make a decisions based on the available information.

Stiglitz (2002: 469) argued that information asymmetries arise when there are group of people know different information and due to some information is private, information asymmetries occur between the group of people who hold the private information and those who might make better decision if they had it. It also argued that most of formal econometric models of decision-making processes were founded on the assumption of perfect information, where the problem of asymmetric information was neglected.

Elitzur & Gavious (2003) stated that, there are two wide types of information where asymmetry is mainly significant: information belongs to quality and information belongs to intent. Concerning the quality of information, the asymmetric information is critical when one party is not completely conscious about the quality and the characteristics of the other party. However, with regard to the intentions, the asymmetric information is also significant where one party is very keen about the attitude and behavior of the other party.

2.2.Theories of Firm's Performance

The investigation of bank performance determinants has been conducted in the context of different theories. Based on literature review there are three theories that tackle companies' performance. These three theories are namely: structure –conducted-performance theory, Efficient- Structure Theory and Expense-preference behavior.

2.2.1 Structure –Conduct- Performance theory

Structure Conduct performance theory suggests a fundamental and causal interpretation for company performance throughout economic conduct on incomplete markets. The Structure –Conduct Performance theory was broadly used in the literature of industrial organization to clarify the profitability of companies. The main idea of this theory is that profits of firm are determined by concentration level of the market.

According to this theory /paradigm, the environment of the market has a short term and direct influence on the market structure. The market structure then has a direct impact on company's economic conduct. In addition to the external factors such as political and economical factors may have influence on market framework and accordingly affect the structure conduct and performance of the market.

Kaufman (1966) was the first researcher to examine the validity of structure –conduct-performance theory in banking sector and found that there is a positive significant relationship between concentration level in the market and bank's performance. However the relationship is not linear.

2.2.2.Efficient Structure Theory

The concept of efficiency in capitalist economic thought was linked to the fundamental economic problem of how allocate the limited resources available to the community in order to meet the needs and desires of the renewable individuals.

Demsetz (1973) was the first to originate a different clarification on market structure-performance relationship and suggested the Efficiency Hypothesis. Applied to banking sector, this hypothesis asserts that a bank which operates more efficiently than its competitors achieves higher profits resulting from low level of operational costs. The same bank holds an important share of the market. Therefore, variations at the level of efficiency create an uneven distribution of positions within the market and an extreme focus. Since efficiency determines market structure and performance, the positive relationship between these two seems insignificant and incorrect.

2.2.3. Expense-Preference Behavior

Expense-Preference behavior theory is one of the most employed in the research. In this theory it is hypothesized that the main objective which managers follow is to maximize not profit but own utility or utility of the firm, which is usually achieved via increasing salaries or other staff expenses (Williamson, 1963).

Edwards(1977) investigate the determinants of performance at the banking market. Natural logarithms of salaries and number of bank 's staff were taken as proxies for performance. This research found that there is the positive relationship between salaries expenses and market concentration. Based on this facts, he argued that Expense-Preference behavior theory has more power in clarifying the main determinants of bank performance than the theories which are based on profit-performance assumption.

2.3. Concept and importance of models

Building a model of any economic, administrative, scientific problem is only a simplified form of this problem, which most often takes the form of equations that represent the relationship between various factors linked to the problem. Aloush ,K.(2012), stated the importance of building a model as follows :

1. A practical method used in detecting the behavior of systems and this is motivated by the desire to know the dynamic development of other things life.
2. Models are used to detect the future status of the systems that have been classified and to identify their behavior and determine the degree of development and direction of this development.
3. Models help to show different outcomes of alternatives in decisions and the consequent provision of a conscious basis for the choice between these alternatives.
4. The various alternatives of the model help to give important principles to the formulation of economic policies.
5. The use of models is a basis for judging the efficiency of a given system towards specific objectives.

2.3.1. Models Classification:

There are three types of models:

- **Descriptive Models:** These models are in line with the inductive method, that is to say, they use logic to describe and analyze the relationships between the variables affecting the problem.
- **Predictive Models:** are used to predict what the system will be over a future time period and uses data to find out the possible future outcome of an event or a likelihood of a situation that is taking place.
- **Perspective Models:** This model goes beyond predicting prospect outcomes by also recommending actions to profit from the predictions and presenting the implications of each decision option to the decision makers.

Based on the brief review of theories it has been concluded that :

1. Banks are exposed to different types of risks in the market and should be professionally manage these types of risks such as market risk , economic risk and political risks through efficient risk management system.
2. Efficiency is very critical in banks management as without efficiency banks may waste their resources and allocate it in unprofessional manner which lead to decreasing in profitability and losing market share.
3. Transparency and information symmetry is very significant to any company especially banks to equalize the value of information across stakeholders such as creditors , investors and regulators .In other word , corporate governance is frame to ensure such transparency and information symmetry .
4. Signaling financial stability data is crucial to stabilize the market and ive good anticipation about banks performance.
5. Building models is very important tool to determine and identify the main factors that cause the problem and try to visualize the relationship among these factors and shape them under scientific framework

Accordingly , This research as an attempt to propose a comprehensive model that deal with the main factors that may affect banks performance such as Risk Management, Efficiency , Corporate Governance and Financial Stability . This model is a descriptive model in line with the inductive method, which uses logic to describe and analyze the relationships between the variables affecting the problem.

A literature review about Risk Management, Efficiency, Corporate Governance and financial stability is presented to support the proposed model building process. Before presenting the literature review about the main components of the RESCO model it's useful to have an overview of traditional and nontraditional performance measures .Accordingly, the literature review in following section will be divided into two sections: Review about Banks performance measures and components of the proposed model.

2.4. Performance measures of banks

There are four well known models that measure banks performance relying on financial data .These models are Return on equity model , CAMEL Model ,Economic Measure Model using Economic Value Added

(EVA) and Market Based measure of performance. The following sections presents a brief overview of each model .

2.4.1.Return on Equity (ROE) Model:

Return on Equity (ROE) model represents a well known model that depends on financial data from balance sheet and income statement to analyze banks performance. Roe is measured by dividing net income by average total equity .The ratio is compared over time to evaluate bank performance and also is compared to peer group to position the bank in the market comparing to competitors.

The main criticism of ROE model is that this measure is a short term measure and does not take into consideration the long term bank strategy and the consequences of risk due to investment and finance decisions made by the bank's management. The recent financial crisis shows that the failure in using ROE ratio as a measure to the sustainability of banks performance .

2.4.2.CAMEL Model

CAMELS system consist of six general categories. The letters refer to each rating category as:

C=Capital Adequacy

A= Asset Quality

M=Management Quality

E=Earning Quality

L=Liquidity

S=Sensitivity to Market Risk

Ashan (2016) stated that “there are 5 ratings of composite CAMELS ratings as follows :

Rating	Composite Range	Description
1	1.00-1.49	Strong
2	1.50-2.49	Satisfactory
3	2.50-3.49	Fair
4	3.50-4.49	Marginal
5	4.49-5.00	Unsatisfactory

Source: Khan,2008

2.4.3.Economic Measure of Performance

The economic measures of performance consider the growth of shareholder value creation and concentrate on evaluating, for any given fiscal year, the economic results produced by a company from its economic assets. One of the most famous measure is EVA which developed by Stern Stewart & Co., in 1989

As introduced by Stern Stewart & Co., EVA is calculated as a company's net operating profit after taxes minus cost of capital employed by the corporation.EVA is measuring whether a company generates an economic rate of return higher than the cost of invested capital in order to increase the market value of the company.

2.4.4.Market-based measures of performance

Market-based measures of performance illustrate the method that capital markets worth the activity of any given company, compared with its projected accounting or economic value. The most commonly used ratios include:

- The “total share return” (TSR), the ratio of dividends and increase of the stock value divided by the market stock price;
- The “price-earnings ratio” (P/E), a ratio of the financial results of the company divided by its share price;
- The “price-to-book value” (P/B), which relates the market value of stockholders' equity to its book value;
- The “credit default swap” (CDS), which is the cost of insuring an unsecured bond of the institution for a given time period.

2.5.Balanced Score Card

The concept of Balanced Scorecard originated in the early 1990s when the Nolan Norton Institute conducted a study entitled Measuring Performance at the Future Foundation with 12 companies from different fields. The main factor of the study was the participants' conviction that the methods of measuring traditional performance based on historical data no longer meet For the purpose of making effective decisions.

The results were summarized in The Balanced Scorecard, authored by academic scholar Robert Kaplan and David Norton of the Nolan Norton Institute, one of the bestsellers around the world. The card links the mission's vision and mission to performance indicators that vary by theme, such as return on

investment, customer satisfaction, quality of performance and employee skills. The effectiveness of using the card depends on the logic of the objectives set for each indicator.

The card is divided into four axes: Financial, Customers, Internal Business Process, and Innovation and Learning. Each of these axes is concerned with the development of standards that should be measured in order to reach the general measurement of performance and relate to the extent to which the strategic objectives are achieved.

Balanced Scorecard aims to balance financial and other goals with short- and long-term goals. But it is possible to find institutions that have a balanced goal card but ultimately do not balance objectives properly. The goals may not be explained in relation to the strategy.

Finally, Balanced Scorecard is a way to link performance indicators with the organization's strategy. Therefore, if there is no clear strategy, the use of the Balanced Scorecard may not work properly.

2.6.Risk Management .

Risk is considered as intrinsic feature of banks' functions accordingly bank management-by nature - is a sophisticated risk management process to maintain bank's survival on the market and financial success. Authorities usually set rules to limit banks' risk and to oblige them for sufficient and adequate capital to absorb losses. In addition, there is guidance with regard to main phases of risk management process such as: identification, measurement, control and monitoring (Mohamed, 2016).

As long as banks are profit seeker organizations therefore it always exposed to risks without incurring regulatory consequences. Conversely, if banks insufficiently calculate its capital requirements, and the authorities are not capable of investigating it early and discipline the bank to take proper action, it could negatively affect on the banks stability and cause its bankruptcy and affect the whole banking system consequently, the economic system become unstable (Marcinkowska, 2012).

Al-Tamimi and Al- Mazrooei (2007), stated that risk is a function of the following elements:

- I. Understanding Risk and Risk Management.
- II. Risk Identification.
- III. Risk Assessment and Analysis
- IV. Risk Monitoring.

2.8.1 Understanding Risk and Risk Management.

Understanding of financial institutions' risk is very critical and corner stone for personnel working for any financial institution. Unfortunately, some risk mangers thought that the technical development is most significant element in the risk management process. In this context, A research carried out by BCG consulting group revealed that technical development regarding risk management is not the only significant aspect to guarantee success, However a well perceptive of risk by executives and strategic managers in addition to the capability of the organization to control risk, These two combined factors are very vital to assure a satisfied level of success.

With the purpose of recognition and extension of the risk based management culture across all institutions functions and across all managerial levels, the way of thinking of human resources should be changed toward more understanding of risk and its importance to protect the organization which will increase the probability of high success.

In order to achieve this goal a comprehensive training and development plan should be applied in addition to well definition of tasks and job description plus dedication to culture changes that recognize the importance of understanding risk.

This mean that it should be well defined guidelines for responsibility and accountability of risk management and this guideline should be well understood. A criticism that could be considered as a significant one is that, some of these guidelines in some banks are constant. However, it shouldn't be static as it must be reviewed on regular basis and developed according to different circumstances, situations and any internal or external factors that face the financial institutions and might affect the its performance. It's also important to realize and understand that applying risk management techniques in an appropriate manner will decrease operational cost and any anticipated losses. This fact should be well perceived and understood by all employees in both Islamic and conventional banks regardless of different types of risks that face both types of banks.

Al Tamimi and Al Mazrooei (2007) conducted a study of Banks in United Arab of Emirates to distinguish between local and foreign banks working in United Arab of Emirates. This study revealed that there is a positive relationship between understanding risk and risk management practices which confirm the importance of understanding risk to enhance the efficiency of banks and accordingly its profitability.

2.8.2. Risk Identification

Risk identification is the practices of formative and recognition of all threats whether these threats are internally or externally and would stop any organization from accomplishing its strategic goals. Al- Tamimi and Al Mazorooei (2007) stated that risk identification in banks is the first and could be considered as the most important phase in the risk management practices.

It's valuable for any organization especially financial institution to have an early warning system that is considered as an integral part of a comprehensive and proactive risk management system. This system will provide the organization and all banks with information about prospects, clues, and data that used to identify risk and take a precautionary action to prevent and protect banks from losses. (Pausenberger and Nassauer 2000).

Barton (2002), stated that risk identification procedures involves categorizing of risk factors based on influence, firmness, and dollar impact as such categorization assists in ranking risks elements in accordance with their significance hence helping top management to build up risk strategy. Banks could identify risk through risk mapping accordingly avoiding facing unexpected risks and prepare the management to mitigate all anticipated risk in a professional manner.

Tcankova (2002), demonstrated that risk identification is the most critical step in risk management process. As it involves determining the most occurring risk and any other event that repeated frequently. Consequently, Risks is recognized by looking across all activities of the corporation trying to introduce new exposure which might be appeared due changes in internal or external environment

Al- Tamimi (2002), conducted a research on risk practice of commercial banks in UAE banks and the result revealed that UAE banks were primarily facing by credit risk .In this study he argues that the main techniques used to identify banks risks in UAE are examination and assessment by the branch manager and the analysis of the bank's financial statement .According to Al- Tamimi and Al Mazorooei (2007) who conducted a research to find out whether there is a significant difference between foreign bank and local banks in UAE concerning risk identification. Their study revealed that there is no significant difference between foreign bank and local banks in UAE with regard to risk identification in addition to there is a positive relationship between risk identification and risk management practices which confirm the fact that identifying and well recognizing the risk is a crucial aspect for all bankers.

2.8.3.Risk Assessment:

Risk assessment is a methodical practices to identify and assess potential loss or damage that could influence the achieving of organization's strategic goals and objectives .Such damages and potential loss may occur through internal elements (i.e. personnel, operation , organization structure) , or through external factors (i.e. micro and macro-economic events , political events ,legal and regulations.).Accordingly when there is a possibility of occurring these events internally or externally and it could be overlap and interconnect with the strategic goals and objective of the company, at this point all these elements and events driven from them could be considered as a risk

It worth mentioned that ,Risk assessment is the another critical step in risk management process .As it's important that prospect and potential losses or damage should be determined and prepare a mitigation strategy to protect the organization . Pausenberger and Nassauer (2000) , stated that the quantification of possible loss is a vital in order to be able to evaluate anticipated losses that may occur to any corporation .

In realistic world risk elements and factors should be classified. Hence, categorizing risk as per its quantity of harm could be a practical way to map the anticipated risks that face all banks and assist the executive managers to have a proper tool to mitigate the risk and protect the shareholder's interests. A well description of anticipated risks helps managers to structure risk in a professional manner and understand the prospect consequences. Accordingly set strategic and tactical action to reduce the consequences of this risk to the lowest possible level.

The main critic of the previously applied risk assessment procedures in banks is that risk assessment shouldn't be a static process any more in other word all risk factors that face banks and their weights of consequences and loss occurrence should be reviewed and evaluated on regular basis due the dynamic changes in the external environment .Especially after the recent financial crisis several financial institutions including banks and credit risk rating agencies reviewed and reassess their credit rating and risk model .

It's also worth mentioning that, the idea discussed here is not just reviewing and updating the risk assessment procedures but also updating and enhancing the skills of risk managers and board of directors as there is another criticism related to this issue that many executive bankers may use an automated sophisticated risk modeling and they wrer not well trained or familiar with such sophisticated software and could not adapt themselves and their skills or deeply understand the outcome due to complexity of the equations, modules and results of statistical and mathematical models that used in risk assessment process.

2.8.4. Risk Monitoring

Risk monitoring is a crucial phase in the whole integrated risk management process. It could be defined as an effective practice that guarantee no deviation or violation from actual bank's risk profile comparing to the target and planned one. Accordingly, risk monitoring assures that the bank is in line with the approved risk strategy by Board of directors.

According to Pausenberger and Nassauer (2000), Monitoring is the last phase in the comprehensive risk management system. they argued that the monitoring or control should be done through different managerial levels. Although there is a specific type of control from board of directors but this control is not sufficient to guarantee the efficiency of banking system. Accordingly, another control point should be established to be able to oversight risks, such as audit committee and supervisory board who have an independency to control and monitor risk across different bank functions and across banks' departments.

The criticism to the function of the supervisory board in some conventional banks is that some advisory boards may not have a power or authority to stop a certain investment or financing risky projects through the bank as their roles might be an advisory role without any power. However, in the Islamic banks the supervisory board or what so called the Shari'ah board has a power to reject some project and investments even if there was a preapproval form the board accordingly the bank can not engage in such investment or project finance as long as there is no approval from shari'ah supervisory board.

Setting up an efficient internal reporting system assures an effective risk monitoring system .All reports generated from this system should be informative and contain all adequate and clear information required to make a wise decisions .The reporting system as an integral part from the internal control system should take into consideration the appropriate time to provide such report .So once there is a deviation between the actual risk position of the bank and the approved one by the board an early warning system through effective report should be generated to alert the board and the executive managers with regard to such risk volition and excessive risk taking .

2.9. Efficiency:

Measuring banks' efficiency could be considered as one of the most critical tool that assists regulators and the top management to make their judgment regarding unit's performance (Hassan, 2013). In the empirical analysis, the researchers used two different tools in attempts to measure bank's efficiency. First tool which is known as a traditional efficiency ratio (ER). The efficiency ratio measure how efficiently the bank manages its asset as it indicates the effectiveness of utilizing cost required to generate revenue. There are three types of efficiency ratio namely, Asset Utilization (AU), Income to Expense Ratio(IER), and Operating efficiency (OE). The traditional ratio analysis also defined in the literature review as non-structural approach, this approach captures the financial ratio of the bank and compares it among the performance of other banks (Hughes ,2009).

Berger *et al.* (2009), argue that traditional ratio analysis may give misleading results as these ratios don't control the exogenous factor that may have a significant impact on bank's performance accordingly on its efficiency. Also it doesn't control for output and input prices of the bank in which the bank may classified as poor cost efficient. The Second tool which is well preferred by most of researchers. This approach called structural approach in which the main idea behind it is relying on the economics of profit maximization or cost minimization. Accordingly, the performance equation designates a profit function or cost function which signify a production function.

Under Efficiency driver researcher will able to compute parameters, such as overall cost, technical, Allocative, pure technical, and scale efficiencies.

- Technical efficiency (TE) refers to the ability to produce the maximum outputs at a given level of inputs, or ability to use the minimum level of inputs at a given level of outputs.
- Allocative efficiency (AE) refers to the ability to select the optimal mix of inputs in light of given prices in order to produce a given level of outputs.
- The measure of overall cost efficiency (CA) is the product of technical and allocative efficiency.

The TE measure can be further decomposed into pure technical efficiency (PTE) and scale efficiency (SE).

2.10. Financial Stability

The importance of assessing Banks stability has been emerged due to its effect on the whole banking system stability and consequently the whole economy. Accordingly, this issue represents a major concern for banks regulators and supervisors.

The importance of assessing Banks stability has been emerged due to its effect on the overall stability of banking system and consequently affects the global economy. Accordingly; this issue represents a major concern for banks managers, regulators and supervisors.

Rahim et. al. (2012) argued that, the financial stability refers to the minimum variations in the financial markets and financial intermediaries. A market with steady yield growth is regarded as stable, however a market with recurrent recessions status and inconstant inflation and business cycle with repeated financial crisis would be considered as economically unstable. Yayla et. al. (2008) stated that, the idea of stability is directly associated with the soundness of financial institutions and/or sectors. An institution can be regarded as a quite stable institution if it's able to carry out its liabilities. In other word if the institution has a very low default probability in any circumstances. Opposing to the mentioned idea, the institution might be regarded as instable if it cannot meet its obligations with the assets owned by the institution.

Crockett, (2000) argue that, Financial stability has long been a keystone of central banks polices. In fact, financial stability issue has been considered as a major objective of central banks in many countries. Recently, there were clear attentions to the public policies that focus on financial stability due to its significant impact on all economics matters.

Haldane et. al. (2004), stated that instability of financial system could be defined as any variation from the most favorable saving investment scheme of an economy draw from f deficiencies in the financial sector. The benefit of this definition is that it could be used as a standard explanation of instability. It shells financial crises and specially banking crises as a exceptional case of financial instability. The connection between systemic banking crises and financial instability could be considered as a is multi-factor case. There are communication channels working in both directions. Extensive banking bankruptcy may be sourced in general system-wide devaluation to asset prices or real activity – a relationship from financial instability to banking crises; while general bankruptcy will itself typically have important implications for asset prices and real activity – a relationship from banking crises back to wider financial instability.

There are several approaches that used to evaluate banks stability. one the most popular approaches used to evaluate banking stability is z –score.

Čihák and Hess (2008), stated that “The zscore has become a popular measure of bank soundness (see, e.g., Boyd and Runkle, 1993; and Maechler, Mitra, and Worrell, 2005). Its popularity stems from the fact that it is inversely related to the probability of a bank's insolvency, i.e., the probability that the value of its assets becomes lower than the value of the debt. The z-score can be summarized as:

$$z = (k + \mu) / \sigma,$$

Where k is equity capital and reserves as percent of assets,

μ is average return as percent of assets, and σ is standard deviation of return on assets as a proxy for return volatility.

2.11. Corporate Governance:

Corporate Governance is one of the most critical issues that could guarantee the transparency and fairness in banking sector. The banking sector is considered as a basic pillar of the global economic system due to its significant impact on the development and stable growth in addition to its intermediation role in mobilizing funds. Accordingly, the existence of good practices of corporate governance is very important to guarantee financial justice and to set an official framework to ensure stakeholders rights. (John et al. ,2016).

Corporate governance plays a significant role to design and promote principles of equality, accountability and transparency. In order to ensure promoting corporate governance principles, there are some elements that should be taken into consideration when regulators attempt to set good corporate governance practices.

It's very important to investigate the main elements that affect the efficiency of good corporate governance namely: Effectiveness of the Board, Types of Board of directors, Shareholders' Rights, Transparency & Disclosure and Compensation

2.11.1 Effectiveness of the Board

The board of directors is the front line to monitor banks 'activities and oversight the management 's action. The board of directors should have a significant role in observing all banks' proceedings to ensure financial stability and reduce risk of bankruptcy. The core competences of the board of directors or what so called the effectiveness of the board is a critical element in formulating strategic plan to achieve banks' strategic goals.

The main critiques of the effectiveness of the board of directors are related to board size, independency and expertise. It's argued that cost of decision making could be reduced if the board size is quite small. This argument is defending the idea of maintaining good position of banks through facilitating the proceeds of critical actions and decision making procedures. However, it also worth mentioned that there is no optimal size of board of directors to comprehensively achieve the strategic goals of banks.

Another argument that relates increase of the board size to the overall performance of the organization is that the increase of board size through outside directors could add value to the bank as these outsider directors may transfer their knowledge and experience to the bank. However, the main criticism here is that the outside directors might be so busy and might not be able to attend all board meetings which significantly affect the decision making process.

As long as banking operations are sophisticated procedures that require a specific type of financial experience. This experience is very important to deal with the innovative and the complex banking products such as securitization. Accordingly, Lack of financial and banking experience is another critical dimension to the effectiveness of the board of the directors that may seriously affect the decision making process.

Moreover, the business or family connection of the board of directors to the management may affect the performance and risk taking attitude of the bank or of the organization. Accordingly the more independency of the board of directors the more effectiveness of the board. The following section reviews the previous research that related to board of director's effectiveness based on three main dimensions which are: board size, independency and expertise.

2.11.2.Types of Board of directors.

There are two types of board of directors. The first type called one- tier board system which used by British and American companies. This one- tier type depends on mix of outside and inside directors also called non-executive and executive directors. The main function of the board is to strategically plan and determine the business policy to achieve the companies' main goals. Accordingly, the main management's function is to implement what had been determined by the board of directors. All board members whether they are executive or non-executive board member are appointed by shareholders. The shareholders also have the authority to remove and re-assign any board member due to severe low performance or any critical misconduct by the board member.

The second type is called two-tier board system. This system is used by European companies in which there is a two tier board namely, the management board and the supervisory board. The supervisory board is appointed by the shareholders and in some companies the supervisory board members could be elected by employees. However; the management board is elected and appointed by the supervisory board. The main function of the supervisory board is to elect, monitor and dismiss management members based on performance, misconduct or any reason for restricting in favor of companies interests and accordingly shareholders' interests.

Another function of the supervisory board is to represent the company in all affairs in addition to approving the annual accounting and can interfere in case of arising any critical activities and management behavior that may seriously affect the companies' interests.

Banks and companies in Islamic financial system used a unique system. The board of directors whether they are executive and non executive in addition to another supervisory board called Shari'a Supervisory board. The main functions of the Islamic Supervisory Shari'a board (SSB) are summarized as follows (Banaga *et al.*, 1994):

- To issue an unbiased opinion as per Islamic Shariaa law to the banks' management and to any other stakeholder party.
- To respond to any enquiry by the community regarding banks transaction and any other financial transaction that may not executed within the reviewed bank or company.
- Monitoring and assessing all transactions to make sure that these transactions are complied to the Islamic Shariaa roles.
- To regularly meet based on fixed agenda to discuss all current and prospect issue related to banks and companies' operations.
- To effectively co-operate with legal departments to prepare contract as per sharia laws.
- To find an approved solutions or alternative solution to the unapproved transactions from Islamic Sharia'a point of view.
- Controlling and guiding the way of calculating and spending *Zakat* to the approved channel and networking.

The main critical issue in selecting the supervisory board is how to ensure their unbiased opinion and the freedom of granting their approval or disapproval without any external or internal pressure. There are some criticisms regarding the independency of Shariaa board. One of them is the remuneration that paid to the SSB from the financial institutions or shareholders of the financial institution may raise a conflict of interest and consequently it may affect their independency. This criticism has been confirmed by Banaga *et al.* (1994), who found out that some Sharia board member may approve a doubtful operation to avoid any pressure that may arise from shareholders and satisfy their needs and accordingly remain active in the board. This action may lead another Islamic financial institution to follow and imitate such operation and may become a rule.

Another criticism to the SSB is that some employees of Islamic banks are very well trained, educated and have access to the latest development and updated researches. These employees are capable of developing innovative products that comply with Islamic Shariaa rules. Accordingly, the importance of Shariaa board as a control body may be reduced to be seen as a completion of the official organization structure. Additional criticism to the Shariaa board is that there is no consistency among scholar decisions and opinion which call *Fatwa*. This inconsistency could be found among nations such as Middle East and Far East. It also, could be found within the same nation. This problem need to be solved in a professional manner by setting up a unified international counsel for Islamic Finance which will be responsible for standardized the main critical line of Islamic shariaa rules and oversight the national Sharia boards.

2.11.3. Shareholders' Rights

Organization for Economic Corporation and Development (OECD, 2004) and its members has recognized the importance of structuring a comprehensive framework to explain and protect shareholders' rights. The shareholders have the right to vote, sell their shares, and participate in general assembly meetings and to participate in decision making with regard to critical decisions such as merger and acquisition

The fundamental shareholders' rights consist of the right to ensuring ownership registration, to document their ownership rights and the mechanism used to transfer their shares in addition their ordinary accessibility to all information on the company and the right in net assets sharing in case of company liquidation.

One of the most critical rights is the right to participate and voting in general assembly meeting. The main critique of applying this right is exploring the corporations' ability to properly announce about the time of general assembly meeting. Another critical issue related to attending the general assembly meeting is what so called proxy voting. The proxy voting is a newly developed mechanism that could ensure shareholders to practice their voting right without physical attendance and will improve the efficiency of voting process within the shareholders with regard to critical decisions such as approving of additional shares, nomination and/or removing board members, approving ruminantion policy share split, company spin off in addition to merger and acquisition

Another critical issue is the regular accessibility to all information about the corporation which gives a transparent and comprehensive overview about the corporation and effectively enhances the voting and decision making process across shareholders. This information should be reliable and accurate. Accordingly, the board of directors should publish a report that include all information to assist investors and shareholder to evaluate company's investment and all their operation in addition to its prospect extension in the future and shareholders should be able to access all information in details.

2.11.4. Transparency & Disclosure

Banks transparency could be reviewed from different angles. The first angle is the transparency of banks' structures. The main critique of this view is that banks could have different and sophisticated structures that may not clearly disclosed to stakeholders or may not obviously understood which lead to hiding different and complicated types of risks such as financial and legal risks due to the non transparent banks' structures.

Another critique is that the non transparent structure may reduce control and oversight over the whole banks units, divisions and subsidiaries. Accordingly banks managements should strive to make sure the clearness of sophisticated structures and associations to provide a comprehensive view of banks risks and its consequences.

The second angle of banks' transparency is the clearness of information about the financial position of banks. The guarantee of such clearness is based on the existence of an effective market discipline. The basic critiques of market disciplines are based on two layers. First Layer is the existence of effective market regulators and authorities such as capital market authorities and central banks to well structure and develop financial markets, oversight the transparency of the financial information and to set up an efficient framework to monitor banks and other financial institutions.

The second layer is the private market discipline which defined by Marcinkowska (2012) as stakeholders from private sectors who may bear significant losses and who can discipline banks and influence their actions. Turner (2009) argued that during the recent financial crisis the market discipline was in weak shape as the financial instrument issued by banks did not clearly reflect the risk associated with these instruments and did not announce the prospect problem and consequences caused by these risky instruments.

The main criticism pointed to accounting regulation and standard whether these standards are based on IFRS or GAAP is that the enactment of specific risky instruments such as securitization does not block the hidden and the sophisticated risks that may cause huge losses to the stakeholders. And it does not solve the debates of accounting treatment for such financial instruments.

The importance of transparency of the financial system has been increased recently due to its adding value to the financial markets and to the participant. The Transparency International report (2011) asserts these benefits as follows:

- It assists in preventing and controlling financial frauds which lead to significant consequences of financial losses and global crisis.
- It enhances the efficiency of financial market and its structure which helps in disclosing all types of costs, risks and prospects consequences.
- It protects investors by allowing improved analysis to the financial instruments available in the financial markets and all associated types of risks.

It has been argued that measuring banks' transparency may enhance and reduce the overall banks' risks and accordingly reduce the likelihood probability of banks' failure. It has been argued that transparency enhanced the market discipline. As per Basel II (Pillar III) , Corporate governance concerned by the efficiency of market disciplines and its effective mechanism to ensure the flow of financial information between all market participants whether they are investors or management of the financial institutions in addition to regulators . This efficient framework will set guidelines and recommendations to enhance access of information and enhance transparency to let investors able to evaluate banks' financial positions and increase the capability of regulators to oversights banks. (Kalfaoglou and Sarris , 2005).

Chipalkat (2002), argued that high-quality disclosures increase market liquidity of the corporations and decrease its cost of capital which finally lead to increase in profitability and market share of the corporations. Conversely, Hossain (2008) argued that the disclosure is not always in the favor of banks especially in certain circumstances when banks risk exceeds the reasonable limits accordingly disclosure may decrease the banks value.

Based on theoretical background of signaling theory, Banks are willing to disclose its good performance as a signal of strong positions to motivate investors to invest in banks' shares and their financial instruments. The signal theory has been examined through valuating stock prices according to financial information disclosed by banks about loan loss provisions. Beaver et al. (1989) argued that loan loss provision is considering as a strong signal of strong financial position of the bank as the bank is able to absorb a specific level of losses through sufficient provisions.

The factors affecting transparency and disclosure are an interest to managers, entrepreneurs and researchers. It has been argued that there are internal and external factors that may affect the transparency of banks such as ownership concentration, explicit system of insurance and deposits, market developments. Srairi and Douissa (2014) examined the internal and the external factors that may have influences on banks transparency of 69 emerging markets banks over the period of 2006 till 2009. The results of this study revealed that concentration of ownership has a negative influence on banks' transparency. Also, the results revealed that there is a positive correlation between transparency and the existence of an explicit system of insurance, deposits and protecting shareholders' rights, however there is a negative relationship between transparency and the development of the markets.

2.11.5. Compensation

Executive remuneration concern has attracted several researchers due to its impact on risk taking policies in banking sector. There are different arguments that elaborate the significant impact of compensation on risk taking policies by executive managers.

Haan and Vlahu (2013) argue that executive managers who obtain most of their compensation based on their short term performance are willing to engage in high risk investments to increase share price. In this context, Bebchuck and Spaman (2010) also argue that stock -based compensation could be considered as a motivation for executive managers to concentrate on the short term performance and growth of stock price.

DeYoung et al. (2013) examined the effect of changing executives' compensation that has been granted to develop and capture new investment prospects shaped via innovative techniques of securitization of debts. Accordingly, executives engage in riskier investment opportunities. The results revealed that there is significant relationship the type and size of compensation and the income generated from nontraditional activities such as hedge funds, securitization and credit default swap. This type of compensation scheme called pay risk sensitivity based on risk taking to generate high return. Erkens *et al.* (2012) studied the impact of compensations' types which classified into equity type compensation and non-equity type compensation. This study covers the recent financial crisis period and the results show that the lowest and the poorest performance through the financial crisis were for the financial institutions which used non equity compensation schemes such as cash bonuses derived from annual profit objectives.

Cheng et al (2012) studied the relationship between executive compensation of financial firms and risk taking strategies over the period 1990 till 2008. The results confirmed that those who offering high level of aggregate compensation scheme including cash, bonus and stock based compensation are willing to peruse high risk investment strategies. On other hand, Grove *et al* (2011) studied the effect of executive compensation on banks' performance and quality of loans' portfolio over short and long term period. The result revealed that there is no positive relationship over short term between the executives' compensation and loan quality of loan portfolio as a proxy of risk taking. However, this relationship turned into negative over the long term period which confirms that the compensation schemes should take into consideration the long term consequences of risk strategies executed by executives.

Studying the non-financial companies is critical to comprehensively understand the effect of compensation across different sectors. In this manner, Baptista M. (2010) studied the relationship between CEO compensation and the performance of forty large French companies during the period 2003 till 2009 .The proxies used to measure companies performance are ROA and ROE , where the compensation scheme is cash ,bonus and stock based compensation. The results revealed that only ROE has a significant effect on CEOs' cash compensation.

Ozkan N (2007) examined the relationship between UK performance and CEO compensation for 390 UK companies from 1999 till 2005. The results revealed that there is a positive and significant relationship between firm performance and the level of CEO cash compensation. Although this relationship is positive however it is not significant for total compensation.

The main critiques for the compensation schemes in the financial and non financial institution are as follows:

- The compensation schemes do not take into consideration the relationship between the compensation of executives and risk taking strategies and its consequences. The only consideration is short term effect which might be measured by stock price development.
- The compensation committees should have more oversight authority to review the compensations schemes of executives and board members whom their remunerations exceed the average remuneration of executive managers and board members on the same basis.
- The compensation scheme of high remuneration staff such as treasury staff and traders who engage in high risk transactions should be disclosed separately as it could not be acceptable by shareholders and may not in the line with banks' interests.
- Board and Executives' compensation should be deferred over long term period and the compensation committee should receive recommendation from risk management committee with regard to any adjustment for investment risk strategies that may affect the long term banks' profitability and financial stability.

III. Research Approach and Methodology

This paper used the inductive approach which is relying on learning from experience, patterns, similarity and regularities in experience and previous researches to get to conclusions and to propose a comprehensive model that helps in better measuring of banks' performance.

A survey of researches concerning Risk Management, Corporate Governance, Efficiency and Financial Stability is reviewed to investigate the importance of each factor on measuring bank performance .According to the literature review I will set up a framework and model that take into consideration the mentioned four factors. Where the proposed model (which called RESCO) is a function of risk management, efficiency, financial stability and corporate governance.

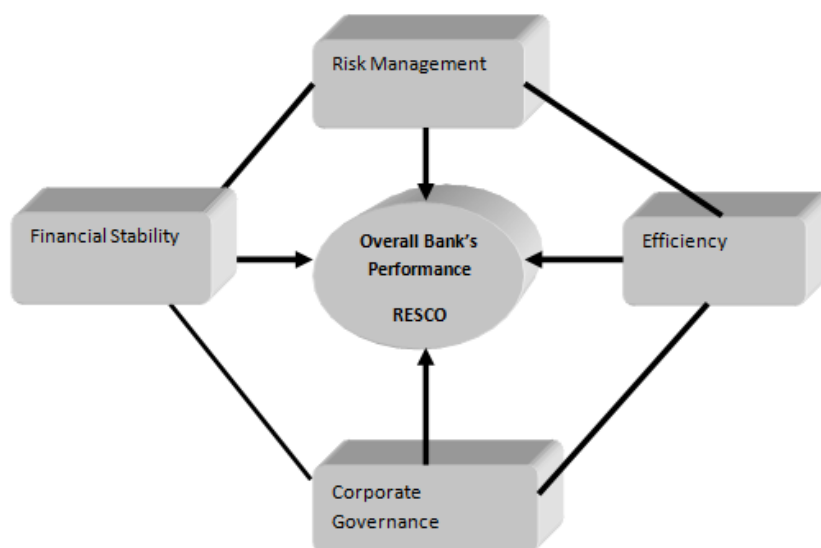
3.1.Theoretical Framework of RESCO Model

The main dimensions of the proposed model RESCO are risk management, Efficiency, Corporate Governance and Financial Stability. Figures 1.1, 1.2 and 1.3 demonstrate the main idea and the main dimension and the components of each dimension.

Basel Committee has included risk management as one of the important axes of banking solvency, and in line with global trends In this regard, banks have recently started to adopt risk management policies aimed at controlling the risk levels of banks' business in order to carry out the following tasks:

- Risk assessment and development of the necessary precautions to address it, which does not affect the profitability of the bank.
- Assist in making pricing decisions.

Figure 1.1



- Developing the management of securities portfolios and working on diversification of these securities, through improving the balance between risk and profitability.
- Assist the Bank in calculating the capital adequacy ratio in accordance with the new proposals of the Basel Committee.

The main objective of risk management is to measure the risk for monitoring and control rather than eliminating it altogether. These roles serve several functions including: implementation of strategy, development of competitive advantages, capital adequacy measurement and ability to meet obligations, capital adequacy measurement and ability to meet commitments; in decision-making, risk reporting and control, portfolio management.

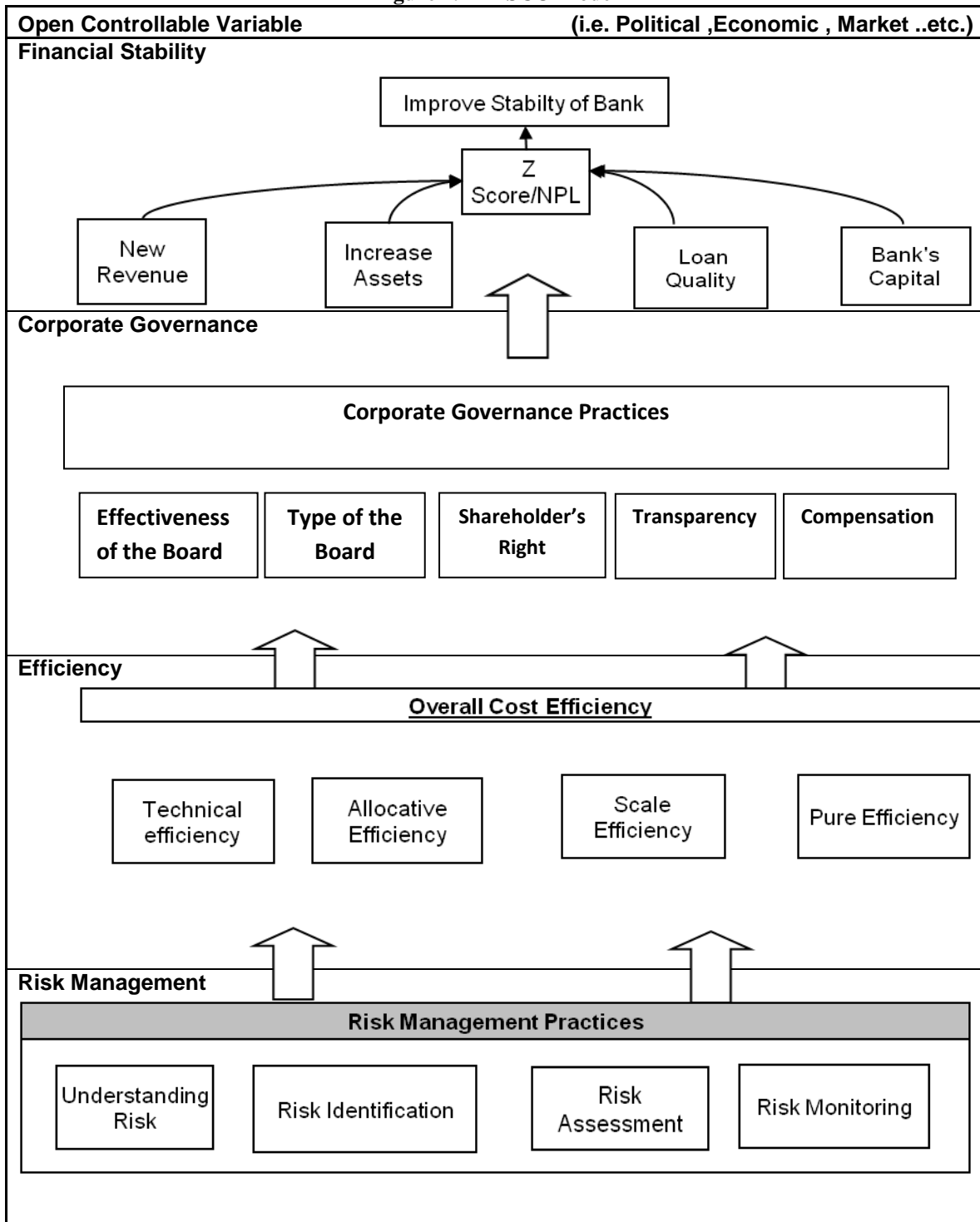
The need for governance has emerged over the past few decades following the economic collapse and financial crises experienced by a number of countries. The importance of governance has increased as a result of the tendency of many countries to rely on large projects to achieve high rates of economic growth. With the expansion of the projects, ownership has been separated from the administration and these projects have begun to search for less costly sources of finance. The orientation of the financial sector has been facilitated by the spread of globalization and the liberalization of financial markets and banking transactions. However, with the size of companies and the separation of ownership from management, the mechanisms of control over managers, which led to some of the mistakes and financial crises, which prompted the stakeholders to concern with governance more than before.

The application of corporate governance in banks leads to several positive outcomes, the most important of which is the increase in financing opportunities, the low cost of investment, the stability of the capital market, the reduction of corruption, and the banks' commitment to implementing the governance standards, which encourages them to implement the rules. Accordingly, the main results of applying corporate governance principles is to reduce the degree of risk when dealing with banks and reduce the probability of bankruptcy which lead to banks' stability and consequently the stability of all financial sector.

Complying with corporate governance principles aims to achieve transparency, fairness and accountability of the management, to protect shareholders' rights, which leads to the development of investment and encourage its flow, develop savings, maximize profitability and create new job opportunities. These rules also emphasize the importance of adhering to the provisions of the law and ensuring the review of financial performance and the existence of administrative structures that enable management to be accountable to shareholders and stakeholders. The proposed model RESCO in Figure 1.2 is a comprehensive measure that will be converted into a stability scorecard (SSC) to achieve the followings:

- To present a rational and comprehensive approach that drive bank's performance
- Enhance the harmony of integrated bank's performance and bank's strategy.
- Increase the awareness across all managerial levels with regard to performance and sustainability.
- Allow senior managers to professionally supervise and manage drivers that add value to the stakeholders.
- The Stability Scorecard gives top management an inclusive picture about the overall performance of the Bank based on four core perspectives/ dimensions

Figure 1.2 RESCO Model



Source : Author own figures

Figure 1.3 Stability Scorecards (SSC)

	Strategic Objective	Lag / Outcome Measure	Lead / Driver Measure	Benchmark	Variation	Action
Financial Stability						
Corporate Governance						
Efficiency						
Risk Management						

Figure 1.3 shows the initiative design of the stability scorecard based on the four main comments namely: Risk Management, Efficiency, Corporate Governance and Financial Stability. The first column determines the strategic objective that linked to each main component. The Second column reveals the main lags or the outcome measure the actions that previously taken by bank's management .The Second Column reveals the drivers measures which represents how banks could measure each outcome that linked to main strategic components. The fourth column represents a benchmark that is a standard against which the performance of each driver measure can be measured and professionally compared. The fifth column represents the deviation from bench mark and the last column represents bank's corrective action plan to reduce the deviation and enhance performance of each strategic driver.

3.2.Statistical Framework of RESCO Model

Nørreklit (2000) argued that the relationship between two variables/events cannot be both logical and causal. Consequently, it is very crucial for bank's management to recognize the relationship among events because this determines whether the effect of an action will essentially, or highly probably, occurs, or whether the consequences must be evaluated based on a financial calculus. In addition, the relationship determines whether decisions on which action will be most financially successful should be based on statistical analysis only or on an accounting calculus or both of them.

Accordingly, In order to understand the cause and effect for the RESCO model the following statistical models should be built in order to investigate such relationships. Regression models will be built to investigate the relationship between RESCO Score and the Component of the model which: Risk Management, Corporate Governance, Efficiency and Financial Stability.

The Basic Model of RESCO is as follows:

$$RESCO = F (RM,CG,EF,FS)$$

The proposed model is based on the following relationship that expressed by a regression model as follows :

$$RESCO = B_0 + \beta_1 RM + \beta_2 CG + \beta_3 EF + \beta_4 FS + \epsilon_i$$

Where ,

RESCO is the Dependent Variable

The independent variables are :

RM= Risk Management

CG=Corporate Governance

EF=Efficiency

FS=Financial Stability

Each Independent Variable will be explained by another regression models based on the components of each factor . Accordingly, this paper proposes four regression models as follows:

3.2.1.Risk Management Model

$$RM = \beta_0 + \beta_1 URMi + \beta_2 RLi + \beta_3 RAAi + \beta_4 RMi + \beta_5 CRAi + Ei$$

where,

RM is the dependent variable (Risk Management Practices), β_0 is the intercept and E_i is the residual. The independent variables are β_1 to β_5 . URM=Understanding Risk and Risk Management. RI=Risk Identification. RAA=Risk Assessment and Analysis RM=Risk Monitoring, CRA=Credit Risk Analysis.

3.2.2.Efficiency Model

The following regression model will be used :

$$EFF = \beta_0 + \beta_1 TE_i + \beta_2 AL_i + \beta_3 SC_i + \beta_4 PT_i + \beta_5 Di + E_i$$

Where TE is =Technical Efficiency,

AL =Allocative Efficiency,

S.E=Scale Efficiency,

And PT=Pure Technical Efficiency

3.2.3.Corporate Governance

The regression model will as follows:

$$CG = \beta_0 + \beta_1 CGP + \beta_2 SHR_i + \beta_3 AUD_i + \beta_4 SBB_i + \beta_5 DPP_i + \beta_6 CMP_i + E_i$$

where,

CG is the dependent variable, β_0 is the intercept and E_i is the residual. The independent variables are β_1 to β_6 . CGP=Corporate Governance Policies &Practices; SHR=Shareholders' Right; AUD=Audit; SBB=Supervisory Bodies; CMP= Compensation Policy & Practices .DPP=Disclosure Policies and Practices.

3.2.4.Financial Stability

Financial Stability is measured by Z Score as follows :

$$z = (k + \mu) / \sigma,$$

Where k is equity capital and reserves as percent of assets,

μ is average return as percent of assets, and σ is standard deviation of return on assets as a proxy for return volatility.

And Z Score will be regressed against profitability and Capital adequacy as follows “

$$Z = \beta_0 + \beta_1 IROA + \beta_2 ROE_i + \beta_3 CAD_i + \beta_4 NPL_i + E_i$$

Where Z is dependent variable that measure bank financial stability

ROA= Return on Assets

ROE=Return on Equity

CAD=Capital Adequacy Ratio

NPL=Non-Performing loans

3.3 .Discussion

The main characteristics of the above models are the combination between qualitative and quantitative methods. Risk management and Corporate Governance will be analyzed based on qualitative techniques as banks management should answer certain question regarding risk management practices and corporate governance practices .Consequently , analyzing the answers and convert it into figures that revealed the description of the events belong to .

In addition to the above , the Financial stability and efficiency used financial/accounting data which represents a historical data but linking this data with the qualitative techniques which described above will lead to better understanding of the logic behind the management decisions and the results generated based on this actions and decisions . Accordingly, it will give a chance to managers and researchers to understand the cause and the effect in addition to the logic relationship among variables and the main dimensions of the model .

It's strongly recommended to examine the four pillar of the RESCO model based on the above mentioned regressions models. I examined the four dimension separately based on Middle East banking data(1) . However combining the all models in just one comprehensive model has not been examined yet .This open the door to future research to confirm and understand the relationship among the four dimension and to give validity to the proposed RESCO Model and Stability score card.

The importance of the proposed score card is that it could be used as a significant tool to ensure financial stability of banking system and to investigate the unstable pillar and factors that may significantly affect the financial performance and stability of banks, Accordingly, RESCO model and Stability Scorecard could be considered as early warning system for banking sector. That's to say Banks should prepare an action plan from management perspective and from authorities' perspective to protect the whole system from being collapsed.

IV. Conclusion

The proposed model (RESCO ©) is an attempt to provide a comprehensive framework for authorities and senior managers to measure and sustain Bank's performance and other financial institutions .This model could also be applied on several types of institutions not only banks however more analysis is needed to develop and test the existing models across different industries and regions . The proposed model has not been tested yet and each section in the model needs to be well investigated in addition to statically investigate the interrelationship among risk management, efficiency and corporate governance which considered as cornerstone to assure banks sustainability.

The literature survey revealed that, There are four pillar of risk management process these pillars are; identifying, measuring, monitoring and managing various risk exposure. However, these pillars cannot be effective unless there is an appropriate and efficient system. The risk management culture should cover all department and units within the financial institutions so that all employees understand and recognize the importance of risk management and its influence on enhancing bank's performance and protecting deposit holders as much as possible.

In order to ensure an effective risk management in banks, A comprehensive frame work that should be used as a standards of risk management system in the financial institutions such as :

- Set up a proper Risk Management Environment and Sound Policies and Procedures.
- Sustaining an Appropriate Risk Measurement, Mitigating, and Monitoring Process.
- Sufficient Internal Controls.

The importance of ensuring banks' efficiency is very crucial for sustaining economic development as banking sector has a significant role in mobilizing and allocating savings in addition to financing small, medium and large enterprises. Competitive and efficient banking sectors may guarantee stability and development in the economic and reduce risks' levels and enable financial systems to absorb any consequences of prospect financial crisis. Another fact based on literature review and the third dimension for the proposed model is that stable financial system is able to effectively assign economic resources, evaluate and manage financial risks in addition to sustaining high level of employment rate. In stable economic system, the financial system could absorb the sequences of financial shocks through self corrective instruments to stabilize the market and the whole system in an efficient manner.

The application of corporate governance in banking sector is very critical and important to the whole economic sector not just banking sector. The benefit could be summarized as follows:

- Increase funding /finance opportunity and lower cost of investment.
- Insure capital market stability.
- Reduce corruption.
- Increase transparency and disclosure.

There is no doubt that using one single factor could not provide a comprehensive and integrated view to measure banks ' performance , and as mentioned above there are four critical and significant factors that affect the banks performance. And based on the above mentioned conclusions, this paper proposed RESCO model to integrate all dimension altogether to provide a comprehensive measure that is converted into a stability score card relaying on the importance of four pillars to measure and sustain banks performance . This may lead to overcoming the weakness of single factor measure such as financial ratios.

References

- [1]. Ahsan M. Kamrul.(2016). Measuring Financial Performance Based on CAMEL: A Study on Selected Islamic Banks in Bangladesh Asian Business Review. Vol.6. No.1 ,Issue#13
- [2]. Aloush ,K.(2012).Concepts and Importance of Models. colleague of education for human sciences ,UOB Accessed online at: <http://www.uobabylon.edu.iq/uobcoleges/lecture.aspx?fid=10&lcid=30135>
- [3]. Al-Tamimi, H. A. H. (2002). Risk management practices: an empirical analysis of the UAE commercial banks. Finance India, 16(3), 1045.
- [4]. Ahmad, S., & Rahim Abdul Rahman, A. (2012). The efficiency of Islamic and conventional commercial banks in Malaysia. International Journal of Islamic and Middle Eastern Finance and Management, 5(3), 241-263.
- [5]. Al-Tamimi, H. and Al-Mazrooei M. (2007)Banks' Risk Management: A Comparison Study of UAE National and Foreign Banks", The Journal of Risk Finance, Vol. 8 No.4, pp. 394-409.
- [6]. Andrieş A. & Ursu S., (2016).Financial Crisis and Bank Efficiency : An Imperial study of European banks.
- [7]. Economic Research-Ekonomiska Istraživanja .Vol. 29,No. 1, pp. 485-497. <http://dx.doi.org/10.1080/1331677X.2016.1175725>
- [8]. Bini, L., Dainelli, F. & Giunta, F. (2011). Signaling Theory and Voluntary Disclosure to the Financial Market: Evidence from the Profitability Indicators Published in the Annual Report. Paper presented at the 34th EAA Annual Congress, Rome, 20-22 April 2011
- [9]. Banaga, A., Ray, G. H., & Tomkins, C. R. (1994). Short Book Review. .
- [10]. Baptista, M. (2010). CEO compensation and firm performance in France. HEC Paris.
- [11]. Barton, T. L., Shenkir, W.G. and Walker, P. L. (2002).Making Enterprise Risk Management Pay Off", USA, Prentice Hall PTR, Financial Times.
- [12]. Berger, A. N., Hasan, I., & Zhou, M. (2009). Bank ownership and efficiency in China: What will happen in the world's largest nation?. Journal of Banking & Finance, 33(1), 113-130.

- [13]. Boston Consulting Group (2001). From Risk Taker to Risk Manager: Ten Principles for Establishing a Comprehensive Risk Management System for Banks".
- [14]. Chen, C. X., Lu, H., & Sougiannis, T. (2012). The agency problem, corporate governance, and the asymmetrical behavior of selling, general, and administrative costs. *Contemporary Accounting Research*, 29(1), 252-282.
- [15]. Chipalkatti, N. (2002). Market microstructure effects of the transparency of Indian banks. National Stock Exchange, India Working Paper, (17).
- [16]. Čihák, M. and Hess, H. (2008). Islamic banks and financial satiability, an empirical analysis. IMF Working Papers, WP/08/16.
- [17]. Connelly Brian L. Certo S. Trevis , Ireland R. Duane , Reutzel Christopher R. (2011). Signaling Theory: A Review and Assessment. *Journal of Management* . Vol. 37 No. 1, January 2011 39-67
- [18]. Crockett, A. (2000). Marrying the micro-and macro-prudential dimensions of financial stability. BIS speeches, 21.
- [19]. Demsetz, H. (1973). Industry Structure, Market Rivalry and Public Policy, *Journal of Law and Economics*, Vol.16, N.1, pp.1-9.
- [20]. Elitzur, R., & Gavius, A. 2003. Contracting, signaling, and moral hazard: A model of entrepreneurs, "angels," and venture capitalists. *Journal of Business Venturing*, 18: 709-725.
- [21]. Freitakas E., Mendelsonas T.,(2015). Research problems in analysis of relationship between financial stability and aggregated debts. KSI Transactions on KNOWLEDGE SOCIETY, Volume III , No.1.
- [22]. Online access at : <http://www.tksi.org/JOURNAL-KSI/PAPER-PDF-2015/2015-1-02.pdf>
- [23]. Grove, H., Patelli, L., Victoravich, L. M., & Xu, P. T. (2011). Corporate governance and performance in the wake of the financial crisis: Evidence from US commercial banks. *Corporate Governance: An International Review*, 19(5), 418-436.
- [24]. Haan, J., & Vlahu, R. (2016). Corporate governance of banks: A survey. *Journal of Economic Surveys*, 30(2), 228-277.
- [25]. Hassan W.M (2013). Efficiency of the Middle East Banking Sector :A Non Parametric Approach: A Comparative Analysis between Islamic and Conventional Banks .*Business and Management Research*.
- [26]. Hassan W.M (2011). Risk Management Practices: A Comparative Analysis Between Islamic Banks and Conventional Banks in the Middle East. *International Journal of Academic Research* 3 (3), 288-295.
- [27]. Haldane, A.,(2004). Defining Monetary and Financial Stability. mimeo (London: Bank of England).
- [28]. Hossain, M. (2008). The extent of disclosure in annual reports of banking companies: The case of India
- [29]. Hughes, B., Hall, M. and Rygaard, D. (2009). Using Root-Cause Analysis to Improve Risk Management. *Professional Safety*, 5, 54-55.
- [30]. John, K., De Masi, S., and Paci, A. (2016) Corporate Governance in Banks. *Corporate Governance: An International Review*, **24: 303–321. doi: 10.1111/corg.12161.**
- [31]. Kalfaoglou, F. and Sarris, A. (2006): Modelling the components of market discipline, Bank of Greece, Working paper, No. 36
- [32]. Marcinkowska, M. (2012). Corporate governance in banks: problems and remedies. *Financial Assets and Investing*, 2(1), 47-67.
- [33]. Marcinkowska, M., Corporate Governance in Banks: Problems and Remedies.(2012) .*Financial Assets and Investing*", issue 2/2012, pp. 47-67, 2012.
- [34]. Mohamed W.M (2016). Risk Management of Banking Sector: A Critical Review. *American Journal of Social Sciences*, 5, 159-167.
- [35]. Mohamed W.M (2014). Financial Stability of Islamic Banks versus Conventional Banks of the Middle East Region. *World Business and Social Research Conference*, Paris France.
- [36]. Ozkan, N. (2007). Do corporate governance mechanisms influence CEO compensation?
- [37]. An empirical investigation of UK companies. *Journal of Multinational Financial Management*, 17(5), 349-364.
- [38]. Stiglitz, J. E. (2002). Information and the change in the paradigm in economics. *American Economic Review*, 92: 460-501.
- [39]. Trujillo-Ponce, A. (2012). What determines the profitability of banks? Evidence from Spain, *Accounting & Finance*, 53 (2), pp. 561-586.
- [40]. Pausenberger and Nassauer (2000). "Governing the Corporate Risk Management Function", in Frenkel, M. Hommel, U. and Rudolf, M. 2005, "Risk Management: Challenge and Opportunity", Springer
- [41]. Pausenberger, E., & Nassauer, F. (2000). Governing the corporate risk management function: regulatory issues. In *Risk Management* (pp. 263-276). Springer Berlin Heidelberg.
- [42]. Srairi, S., & Douissa, I. B. (2014). Factors influencing bank transparency: Case of emerging markets. *British Journal of Economics, Management & Trade*, 4(4), 523-540.
- [43]. Tcankova L. (2002). Risk Identification; Basic Stage of Risk Management, *Environmental Management and Health*, 13(3):290-297.
- [44]. Turner, Adair, (2009).The Turner Review—A Regulatory Response to the Global Banking Crisis," FSA Publication, March.2009.
- [45]. Yayla, M., Hekimoglu, A., & Kutlukaya, M. (2008). Financial stability of the Turkish banking sector.
- [46]. *Journal of BRSA Banking and Financial Markets*, 2(1), 9-26.

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