# Presenting a Model for Supervision and Regulation of Financial Markets in Iran Based on Structural Equation Modeling and Adaptive Approach

**Ehsan Askari Firoozjaei**
Ph.D. Candidate of Finance, Islamic Azad University, Science and Research Branch, Tehran, Iran
Eafin49@gmail.com

**Feraydoon Rahnamay Roodposhti**
Full professor of Accounting, Department of Accounting, Faculty of Management and Economics, science and research Branch, Islamic Azad University, Tehran, Iran. (Corresponding Author)
Rahnama.Roodposhti@gmail.com

**Hashem Nikoomaram**
Full professor of Accounting, Department of Accounting, Faculty of Management and Economics, science and research Branch, Islamic Azad University, Tehran, Iran h-nikoumaram@srbiau.ac.ir

**Submit: 09/15/2019 Accept: 01/10/2019**

## ABSTRACT

This study presents a model for supervision and regulation of financial markets in Iran based on structural equation modeling and adaptive approach. In the present study, Delphi method and structural equation modeling are used to investigate the questions. Twelve experts have been interviewed for qualitative part of research to obtain sufficient information. Results from analysis of the interviews are presented in the framework of a conceptual model that is tested and validated by quantitative methods. In the quantitative research section, at the micro level of the research, a survey strategy is applied as well as a questionnaire tool to obtain required information (using literature review, research background and interview results). Statistical population at this stage are experienced financial market experts from money market, capital market and insurance market. Considering the population in this section, the sampling process is done randomly and by the available random sampling method. For the purpose of sampling, according to the statistical population of the research (75 people) which is considered small, complete enumeration approach is used. Finally, the research models were tested by structural equation method based on each research variable. The final model fitting for factors affecting the regulation of financial markets is tested based on the following variables and is fitted significantly.

## Keywords:

Financial Regulation, Financial Supervision, Delphi method, Financial Markets, Structural Equation Modeling.

# 1. Introduction

The rapid technological developments in financial fields, the interdependence of financial markets and their internationalization, the entry of different customers into these markets and the increasing complexity of financial innovations (financial instruments and institutions) have caused deep changes in the financial markets and their future prospects. The emergence of active financial institutions in most of the monetary and financial sectors, the liberalization of capital flows, and the expansion of competition in the world financial system have made it inevitable to reform regulatory and supervisory systems in financial markets in order to maintain financial stability and health. What is internationally accepted is that financial regulations must be adjusted to meet certain key objectives such as the security and stability of financial institutions, systemic risk reduction, efficiency and fairness of markets, and the protection for customers and investors. Today, many financial institutions offer their clients a variety of financial services in the areas of investment and portfolio management in the form of financial supermarket, such as banking services, insurance and leasing services, securities trading, portfolio management and fund management. In the absence of consistent and rigorous supervision, there may be bankruptcies, possible frauds, abuses and breaches of the laws and regulations in each of these markets, and if such events occur, its effects on other markets and participants will emerge subsequently. In addition, proper enforcement of financial market regulations, particularly anti-money laundering regulations, the use of new financial market instruments such as gold-based, foreign exchange-based investment funds, and insurance policy-based instruments such as Catastrophe bonds require co-ordination and co-operation between regulatory bodies and the establishment of comprehensive supervisory systems. Although these instruments are important for financial stability and financial market risk control, their implementation in Iran has faced challenges due to lack of a coherent and coordinated mechanism for monitoring and regulating the money, capital and insurance markets. Another part of the problems in the supervisory and regulatory system in Iran is the adoption of separate laws and regulations by each of the regulatory bodies in each market without sufficient consideration for the effects of decisions on the conditions of other markets. Developed countries of the world, have tried to revise the supervisory and regulatory structures and established appropriate monitoring models in order to adjust their regulatory and supervisory structure to these developments and to keep pace with the conditions of the global economy, which should also be done in Iran. Many experts believe that the financial market regulatory structure is more effective than any other factor in the effectiveness of regulatory activities, and therefore restructuring financial market regulation and supervision should always be the focus of economic officials' attention. Therefore, different models of supervision and regulation are applied in countries around the world that are in line with their regulatory and economic structures. Each of these models has its own advantages and disadvantages, and there is perfect supervisory structure, and countries choose the appropriate model based on the needs defined in their economic system and existing economic and legal structures; however the chosen structure may also have major changes over time, as in the UK.

Given the importance of this discussion and based on the studies conducted, the vacuum of attention to this issue within the country is strongly felt. In this regard, the research by Najafi, Fallahshams and Madanchi Zaj (2018) is the most important and most close research that has been done in this field. However, other studies have a relatively low affinity with the purposes of this study. Therefore, this study seeks to provide a model for regulating and supervising financial markets in Iran based on a meta-synthesis model with an adaptive approach to the international financial market. Hence, in order to achieve the goals, this paper is structured in such a way that the theoretical and empirical backgrounds of research are presented first. Then the research methodology is examined and the population and sample are presented. Then the results of the data analysis are presented and the last section discusses and makes suggestions on the basis of these findings.

# 2. Literature and Background

## Theoretical Basics

The main reasons for suporvising financial institutions and monitoring financial markets is to maintain financial stability (the ability to withstand the shocks to financial systems) and to avoid systematic

risks in financial markets. Integrated supervision ensures that the financial system is able to perform its tasks in the allocation of economic resources and risk management as well as the efficient functioning of the payment system, while also have the flexibility to deal with shocks, without any problems and failures. The high costs of financial instability and the occurrence of financial crises and its domestic and international effects have made it increasingly attractive for regulatory bodies in the world to regulate and perform effective supervision on financial institutions to prevent crisis.

One of the most important goals of any country is to achieve favorable economic growth, and it is impossible to achieve sustained and rapid growth without efficient financial institutions and adequately equipped financial resources. In this regard, an efficient financial system can perform better allocation of sources and then increase economic growth by getting information about investment opportunities, pooling and equipping savings, monitoring investments and corporate governance, facilitating the exchange of goods and services, risk management, reducing transaction costs and information analysis. The efficient financial system also reduces international financing barriers and facilitates the expansion of investment and further economic growth by facilitating the access of manufacturing and industrial units to foreign capital.

Reviewing world-wide supervision systems shows that common patterns of financial market supervision are typically divided into four categories. These models include Institutional Supervision, Purpose-Based Supervision, Performance-Based Supervision, and Integrated Supervision.

The institutional supervision model is one of the classic forms of financial market regulation and supervisions. This model has a legal-based approach. In this model, the legal status of a company determines which regulator is responsible for supervising the security and health and business of institutions. The weaknesses of this model include the difficult inter-organizational coordination as well as the lack of coordination and homogeneity of regulations imposed by various regulators. Another weakness of this model is the absence of a supervisor and regulator with comprehensive supervising over all business activities of an entity or the whole market.As a result, this model is not able to reduce systematic risk. The benefits of this model include the specialized supervisor body in each of the financial markets, which makes goals such as secure financial institutions in that market, the protection of customers and investors, and the maintenance of efficient and fair markets, achievable.

The purpose-based supervising model, which also referred to as the Double-peak or horizontal model, has its own advantages and disadvantages. This model is close to integrated models, but may not be very effective given the different supervisory objectives of each supervisor organization. This means that one organization may build its supervisory objectives on the safety and health of the enterprise while the other may focus on investor protection. Therefore, this model demarcates the boundary between precautionary and customer-oriented supervision.Therefore, in this model, in order to avoid the conflict between the objectives of the supervision, two separate supervisory bodies are formed to conduct both prudential supervision and business enforcement procedures to protect investors and customers. In this model, each of the supervisor bodies will be able to employ specialist forces in the relevant field so that specialized supervising can be carried out separately (by objectives). The Purpose-based supervising model has gained more popularity after the financial crisis, as most countries adpoted this model.

The performance-based or task-based supervision model, unlike the institutional supervision model, focuses on the activities of each company. In this model the activity and performance of the company are supervised. The main advantage of this model is that there is one superviser for each activity. It is difficult and sometimes complicated to determine which activity is in the field of which supervisor or which regulator will be responsible for new financial instruments. The problem also exists in launching new financial instruments such as investment funds that are based on foreign exchange, gold, debt purchase in the country's securities market. In addition, in this model companies have to deal with multiple regulators and supervisors, which will actually slow down the interaction between the two parties. Therefore, close coordination and cooperation among supervisory agencies are necessary to use this model. Given these problems, fewer countries use a performance-based supervision model, which United States is one of them.

The integrated model of supervision prior to the recent financial crisis has attracted the attention of

many countries in the world, with the emphasis on supervising all financial markets by a single entity. In this model, precautionary supervision and the supervision on business executive practices are performed simultaneously. The benefits of this model include a complete focus on unambiguous supervision in the area of supervisory (which results in increased transparency, quality and consistency in supervision), an increased likelihood for discovery of problems or disruptions due to the sharing of powers, and reduced systematic risk. Conversely, the risk of bankruptcy or disruption to the supervisor's affairs, the low effectiveness and agility of this model in large markets, the lack of coordination between the central bank and the supervisor in supervising the money market, its inefficiency in protecting investors and customers (supervision on executive procedures) and the lack of effectiveness and fairness of the market, are among weaknesses of this model.

## Experimental Basics

Following the financial crisis of the late 90s, the concern for coherent and widespread supervision on financial markets emerged for supervisors and regulators of financial markets, followed by various forms of investigations and examinations in the integration of supervising financial markets in most developed and developing countries. The UK pioneered the restructuring of the Financial Services Authority (FSA), which was responsible for supervising banks, stock exchanges, insurance companies, chambers of commerce and financial services management companies. Subsequently in 2000. Markets and financial services (FSMA) were introduced by outlining the objectives and responsibilities of the organization and the principles governing the formulation of regulations and how it relates to the Bank of England and the Treasury.

Taylor and Fleming (1999) examined the experiences of Scandinavian countries (Norway, Sweden, Denmark, etc.) that implemented the integrated financial supervising system. They believe that examining the experiences of these countries provides useful guidance on the issues that a developing country must consider in transforming the financial supervision system into an integrated system. These considerations are as follows: First, economies of scale by establishing integrated supervisory agencies in developing countries; Second, in a financial system where banks have more market dominance and restrict capital market activity to a smaller area or in the financial sector. With a high degree of integrity, the supervising system needs to be fully integrated and coherent, since the non-banking sector is unlikely to be able to maintain effective and independent supervisory organizations, and Third, countries that do not fall into any of the above categories should consider their own pros and of integrated supervision model.

By examining the issues of integrated supervision on financial sector in several countries, Abrams and Taylor (2000) concluded that there is no single model that is appropriate for all countries. In fact the supervisory system should be developed in accordance with the regulations of each country's existing markets and economic structures. An integrated supervision system can have different risks and benefits for each country's financial sector, so the development and implementation of a proper supervision model in each country must be carefully handled and the advantages and disadvantages of implementing integrated supervision must be carefully and thoroughly investigated. They argue that the supervisory and regulatory integration is appropriate for all three financial sectors, including banking, insurance and the capital market, when the financial services industry involves multiple financial groups operating in several markets or the difference between types of financial intermediaries is diminished. Therefore, due to various factors, it is necessary to develop a supervision and regulation model in accordance with the degree of development and complexity of financial markets. Creating a supervisory structure, however, is not a goal but a tool that, along with other measures, seeks effective supervision by qualified personnel, with the optimal allocation of resources and an independent supervisory body.

In Germany, the Federal Financial Supervisory Authority (BaFin) was created in 2002 to supervise banks, insurance and stock markets. The main reason for this measure was the emergence of a growing number of multidisciplinary financial institutions active in financial markets (known as financial groups), which has led to the blurring boundaries among banking, insurance and securities markets. Another reason is that the financial products and instruments designed in each market are not just specific to that market and are also traded in other

markets. The overall aim of integrating supervision in the German financial markets is that it is important to ensure the stability of markets and the financial health of the system as a whole. The system has two goals in place: first, ensuring the ability to meet commitments and preventing the risk of financial services providers and insurance companies, and second, protecting and supporting financial services clients and investors.

Demaestri & Guerrero (2003) examined and investigated the positive and negative aspects of integrated and specialized financial supervision approaches (ie, each market has separate and specialized supervision) in Latin American and Caribbean countries, considering the effectiveness and efficiency of each approach with respect to some important variables in the area of supervision, including ethical hazards, economies of scale, independence degree of the central bank's supervision system and etc. In this study, according to each variable, supervisory approaches (integrated and specialized) were compared with each other and their efficiency and effectiveness were evaluated according to the legal and economic structure of country.

Abbasgholibeik and Zadenasir (2013), presented some structures for supervision on the money, insurance and capital markets in Iran, and compared it with the structure of some selected countries. They conclude that all market segments and especially supervisory agencies requires more time to adapt to environmental change. In addition, changes to the system of supervision and moving towards a desirable system in the financial markets require proper conditions, suitable models, and appropriate actions by all financial institutions. The experience of developed countries in financial supervision suggests that the financial structure of each country should be a subset of an integrated supervision system - rather than a separate supervision body. In addition, improving the supervision system cannot be done easily and suddenly. Moreover, supervision systems may not always be desirable, however the desirable system is identifiable and implemented over time.

## 3. Research Methodology

The purpose of all science is to understand the world around us. In order to know about the problems of the social world, scientific methods have undergone considerable changes. These trends and movements have led to the use of the scientific method for the study of various fields (Iran Nejad Parizi, 1999). One of the features in a scientific study aimed at fact finding is the use of an appropriate research method. Choosing the right research method depends on the goals, nature and subject matter of the research and executive equipments. (Khaki, 2000)

In general, research methods in the behavioral sciences can be divided by two criteria: first, the purpose of the research, and second, the method of data collection. Accordingly, the type of research based on purpose is descriptive applied-research and its method on data collection is field research. The purpose of applied research is to develop applied knowledge in a specific field. In other words, applied research is directed towards the scientific application of knowledge. Descriptive research includes a set of methods aimed at describing the conditions or phenomena under study. Conducting descriptive research can be merely to better understand the existing situation or to aid the decision-making process. Descriptive research can be divided into Survey Research, Correlational Research, Action Research, Case Study and Ex–post Facto Research (Bazargan, Sarmad, Hejazi, 2001). Nevertheless, the purpose of this study is research based on purpose, applied research and descriptive research and its method is based on data collection, descriptive and correlational and based on structural equation modeling. In the present study, the meta-synthesis method and structural equations were used to investigate the questions.

Structural equation modeling can be considered as a quantitative method that helps the researcher to organize his research from theoretical studies and their compilation to the analysis of experimental data in a multivariate format. This approach brings the researcher closer to the complexities of social life (affecting a set of variables on each other, one way or two way, directly and indirectly) as well as the complexities involved in measuring hidden cultural and social structures, and thus quantitatively analyzing the qualitative phenomena makes it methodologically more accurate and practically more realistic. Structural equation modeling is typically a combination of measurement models and structural models. Based on the measurement models, the researcher defines which variables are observed or which metrics represent the hidden variables, and based on the structural model, it is determined which variables are correlated. Thus, using these models, it’s possible to simultaneously evaluate the quality of variables measurement and the acceptability of direct and indirect effects as well as the defined interactions between variables (Habibi & Adanpour, 2017).

Structural equation modeling is a method for measuring the concurrent relationships between hidden variables and observable variables. Modeling and developing a conceptual model is an important part of demonstrating research assumptions about the relationships among different variables. The developed conceptual model can be evaluated using structural equation modeling. Using the structural equation model, the relationships between hidden variables with each other and the measurement items of each hidden variable with the relevant variable can be investigated. Multivariate theoretical models cannot be evaluated in a two-way approach, each time considering only the relationship of an independent variable to a dependent variable. Multivariate analysis refers to a series of analysis methods whose main feature is the simultaneous analysis of K independent variables K and n dependent variables. The strength of the relationship between the factor and the observable variable is represented by the factor loading. Factor loading expresses the relationship between the factor (hidden variable) and the observable variable. The factor loading is a value between zero and one. If the factor loading is less than 0.3, the relationship is considered weak, and will be ignored. Also, factor loadings between 0.3 and 0.6 are acceptable and if it is greater than 0.6 it is highly desirable. In some sources, stricter restrictions have been put in place. However the appropriate reference for recognizing the reliability of the observed correlation is t-statistic. Significant tests should be performed when correlations between variables are identified. t-value is used to examine the significance of the relationship between variables. Since the significance is checked at the 0.05 level of error, if the t-statistic is greater than the critical value of 1.96, then the observed factor loading is significant. In the export of a structural model in Smartpls software, if the t-test statistic is between (-1.96, 1.96), it is shown in red color and the variable should be ignored (Habibi & Adanpour, 2017).

In presenting a model of financial market regulation and supervision in Iran with a comparative approach to the international financial market in the qualitative sector, in-depth semi-structured interviews were designed and conducted to identify and extract the factors, instances and components influencing the regulation and supervision of financial market regulations by categories identified in the second section of paper. The reason for using the interview is the flexibility of this method and its higher information richness than other qualitative ways of collecting information (such as participatory observation, etc.). The main purpose of the interviews is to collect descriptions of the factors that influence the regulation and supervision in financial markets from the perspective of capital market experts. So the initial question in the interviews was, "What are the factors that influence the regulation and supervision of financial markets considering legal, economic, and international relations contexts of the country?" The question was designed and selected in order to make interviewee able to respond and discuss without much thought. The statistical population in this section consisted of financial market experts from all three markets of money, capital, and insurance, which specifically included names that were purposefully selected and interviewed. Twelve experts were interviewed to determine if the researcher had sufficient information. Results from the analysis of the interviews were presented in the form of a conceptual model that was used to test and validate the quantitative methods. It's notable that this step was completed with a questionnaire designed for experts. In fact, at this stage a questionnaire designed to perform the Delphi method was distributed among the experts.

In the quantitative research section, at the micro level of the research, the survey strategy is utilized and the information required in this section was collected from the statistical population of the research using a verified questionnaire tool (using subject literature review, research background, and interview results). The statistical population at this stage includes experienced financial market experts including all three markets of money, capital and insurance. Due to the fact that the population in this section is determined, the sampling process was done randomly by available random sampling method. For the purpose of sampling, according to the statistical population of the research (75 people), a survey method was used.

## 4. Results

In this section, first, the factors affecting each of the research variables is extracted using the meta-synthesis method, and then each model is tested, based on structural equation modeling using PLS software.

**Financial Market Regulation**: Considerations about regulations, systemic risks and above options include: First, the central bank needs to play an important role in designing and managing macro-prudential policies; second, it's necessary to separate

systemic risk management and crisis management; and third, the tasks must be clearly stated in order to enhance accountability and reduce the risk of political pressure. The primary task of the regulatory body is to assist supervisory agencies in identifying, analyzing, and managing risks and enhancing the safety and health of financial institutions. According to the reviewed papers, 22 factors have been identified for regulation of financial markets. According to the papers (P6, P4, P1, L22, L4, L14), the market-based legal and economic infrastructure criterion has been extracted. MostafaPour et al. (2015) argue that proper formulation of financial regulations requires appropriate legal and economic infrastructure. Considering the implementation of laws in the financial environment and its impact on economic indicators, it is also necessary to consider the economic structure of each country (L4, L14). Given the globalization as well as the innovative actions and global trade, the development of financial markets is also important in the formulation of regulations (L5). Changes in financial markets were so rapid that supervisory official clearly falled behind in regulation and supervision in the financial markets. There were large companies and large holdings in the financial market so that the traditional supervision system was not suitable for these (constantly innovating) companies (L7); therefore, the need for very large, rigorous and robust supervision systems was felt so it can be adjusted with changes; meaning that supervisory systems must also be constantly updated with respect to these financial and corporate innovations. (P3, P4, L17). It is necessary and critital to be up to date for supervising the financial markets because supervisory systems have the critical arteries of the financial markets (P3, L2). Therefore, given the complexities involved, regulation needs to be flexible and adjustable with market conditions.

Innovation in financial markets (P3, P4, L17) and orientation of international relations (P1, P3, P7, L13, L15, L16, L19) are aimed at profitability in these markets. On the other hand, attention to these markets is increasing day by day, but if the innovations increases to the level so that the gap between the intrinsic value of financial innovations and the background of finance is widened (which must be connected and dependent), the risk of assets value loss will be increased too. (L4, L9, L5, L11, L15) (Systematic risk control). This gap will gradually increase as the financial derivatives become more complex, so that there is no relationship between the initial value and the financial value. If we focus on these new financial tools, we will encounter increase in their value, without any increase in their real asset value (Enforcement of regulations) (L4); this means forming an inevitable bubble and cracking it may lead to a liquidity black hole (the number of people who suffer is too high and the loss to the economy will be very serious), (L22, L5, L6) (considering currency stability).

Today, a new look at the goals of regulation and supervision in the financial markets has been emerged. In general, one wonders what to do to overcome past problems in the financial markets. What has been outlined in the present study consists four major goals that may be added to with other goals. According to Article (2) of the Securities Law of the Islamic Republic of Iran, approved in 2005, the Securities and Exchange Organization is designed to protect clients and investors, and maintain fair market efficiency as well as good law enforcement. Therefore, the safety and health of financial institutions are at the forefront of regulatory objectives (P1, L7) (Convergence of financial institutions regulations objectives). Regulatory bodies must also have sufficient ability and motivation to formulate and plan properly (P3, L1) (adequate ability and motivation of regulators). This is achieved by making the regulatory goals clear.

When people lose confidence in the banking system, they rush to the banks to withdraw their deposits (P4, L4, L13, L17, L19, L20) (consumers trust into the regulation and supervision model). This is also called Bank run. The following measures should be taken to prevent such risks: monitoring and controlling the overall functioning of the financial system as a whole, and reducing systemic risk, multinational banks, hedge funds, investment companies in securities, and major insurance companies as a result (P6, L3, L8, L10) (creating upstream coordinating structure in short-term). In addition, market infrastructures (P6, P4, P1, L22, L4, L14) are considered to be systemically important, especially the payment and settlement systems are considered in systemic risk (L4, L8, L5, L11, L15) (Systematic Risk Control).

According to the country's strategies to prevent and counter money laundering, it is recommended to make maximum use of individuals familiar and expert

in Basel regulations (P2, P5, L10, L19). Aspects of Basel regulation that are important in regulating the financial market are as follows: proper customer identification, application of high-level internal and legal standards, cooperation with regulatory bodies, and appropriate policies and processes. According to money laundering violations, proceeds of criminal activities are generally entered into the financial flows through the financial system of countries and either remain in the financial system of the same country after being cleared or are imported out of the country into another country's financial system. If it is possible for the financial system to bring in proceeds from criminal activity, not only financial stability but also the stability of the whole economy will be adversely affected. Given that the illegal sector has a significant stake in the economy, it will affect policy makers' decisions and policymaking becomes very difficult due to lack of confidence in economic statistics. Therefore, in view of the numerous adverse consequences of money laundering, it is imperative to counter it at national and international level.

Also, given the importance of laws transparency (L4, L8, L5, L11, L15), regulators should also have sufficient motivation and ability (P3, L1) and clarify the financial procedures between the three entities as the study (L7) points out, by integrating traditional and modern regulations, and using the experience of other countries with global laws in place (P3, L1).

According to international principles and regulations, clear goals, independence of the regulation unit, and proportionality and adaptation in relations and regulations, are of great importance. Therefore, the regulator, with sufficient power or, in other words, the legal authority to enforce the supervisory regulations (P5, L1), must formulate regulatory objectives consistent with the objectives of financial institutions (P1, L7). The problems of regulation and supervision of financial markets in Iran are primarily due to the weakness of rules and regulations. As it is clear from the review of the financial market conditions in Iran, the lack of coordination between regulators and supervisors of financial markets in Iran (including central bank, stock exchange and central insurance) has serious negative impacts on financial institutions' performance and how they are supervised.

Moreover, if the most recent international standards regarding prudential regulations in Iran are to be used, it is necessary to provide an outline of the economic cycles in Iran and the issues and challenges ahead and to propose the structure accordingly. Given the new situation arising from the angle of sanctions, the orientation of international relations in the future, should be clarified (P1, P3, P7, L13, L15, L16, L19). Therefore, innovation is essential in regulation formulation and regulatory structure reform (P3, P4, L17).

**Financial Market Supervision:** In general, a market can be attractive to the investor when all the features of a fully competitive market are somehow observed. In other words, the market must be transparent and accountable, and meeting the rules of the game (regulations) are at the highest level. Therefore, according to researches (P1, L8), efficient development of supervisory structure is of great importance.

For example, live information is one of the strategies to increase market transparency. Notwithstanding the weaknesses in market information disclosure (L19), (the importance of proper supervision on the quality of information and financial reporting), is one of the confusions of investors in market decision making due to the lack of transparency and lack of relationship among financial market regulators, organizations and institutions. The country is together. Therefore, having high quality personnel in the supervision unit is a priority (P2, P3, P5, L4, L7, L15).

For example, the stock exchange is not aware of central bank policy or insurance is not aware of banks policies. The first step is to coordinate of supervision in the financial markets. This study seeks to provide the desired outcome, efficiency and fairness of financial markets (separation of government from supervision) (P2, P6, L3, L1, L10, L13).

Efficient supervision on pricing which becomes available by relevant information, avoiding dealing with affiliates and behaviors that are anti-competitive, meaning that the market must be homogeneous (L2). The supervision system should therefore be compatible with the environment and should also maximize the efficiency of the supervisory system (P4, L17) by following the international supervisory systems (P2), and by using innovative techniques.Regulators strive to accomplish this by requiring entities to disclose key information whether it is about business or financial performance, the price of securities bought or sold, or other information that is important to investors

(Brokers Supervision) (P3, L15). Based on advances in information technology, developing software and information systems are needed to supervise each entity (P6, P5, P2).

**Financial market regulatory and supervisory model :**Today, stakeholders and policymakers around the world are looking for regulations that can protect individual investors so that in cases where transparency requirements alone are not sufficient (System Performance) (L5), fair trading and high standards of business are supported by financial intermediaries (so special attention should be paid to the structure of customer and investor support with necessary tools in the new supervisory system) (Investor support) (L4, L9, L20).Considering the studies and experiences of successful European, Asian and US countries following the crisis of 2007-2009, with the performed deregulation for better supervision on risk management (multidimensional structure in crisis) (L7), An independent financial market supervisory body was established (P3, P4, L4, L10, L11). Double-peak model and integrated model are of great importance. However, the experience of each country suggests that these standard models must be localized (P7, P4) based on the status of each financial market, in order to have the maximum efficient (L5). Regarding the Iranian financial market, the institutional model is used as a model of regulation and supervision. Among disadvantages of this model are the lack of coordination and homogeneity in use of rules and regulations by different regulators in different areas and the challenge of inter-organizational coordination. The regulatory and supervisory model must therefore be coordinated between financial institutions (P3, P4, P6, P7, L12, L2, L4, L18) and at the same time should increase independence of financial institutions (P4, L3) and coherence between the three entities (P4 , L4), and has the ability to coordinate between regulator and supervisor bodies (P4, P6, P7, L4, L18). Supervision in Iran is based on institutional model; Securities and Exchnage Organization market supervises the capital market, the central bank supervises the money market, and the central insurer supervises the insurers. In this model, none of the institutions have a strong relationship with each other, and therefore it is not very effective. In this model, the growth of markets is politicized and analyzed separately, and is therefore ineffective because in practice the growth planning of each market requires coordination with the growth factors of the other markets. Therefore, this model requires fundamental changes or revisions. Efficiency of the financial market can be enhanced by positive changes in the supervision model and separation of supervisor and regulator units (P3, P4, L4, L10, L11). Integrating supervision for three institutions, leads to healthy and productive competition among the them. (P7, L19). Among major outcomes of increased efficiency in supervisory (L5) and regulatory model are financial stability (P1, L3, L5, L6, L9, L12, L13, L15, L17, L18, L26), financial security (P4, L3), and finally increase in the capability of financial markets (L8).

Also, in order to increase investment, financial markets need to be sufficiently secure, supportive of investors and consumers and able to gain trust. In general, the objective of regulating and supervision for the safety and health of institutions includes a combination of rules and regulations, more cautious reviews and evaluations, along with an emphasis on encouragement rather than enforcement, such as penalties and sanctions (guaranteeing the enforcement of regulations and supervision) (L4, L20). In the market development debate, there is always the expectation that marketers will be given incentives such as, lower direct tax rates or lower value added tax rates. Moreover, to encourage people (P4, L4, L13, L17, L19, L20), cautions should also be taken alongside incentives in order to safeguard and protect investors' properties (L4, L9, L20). In fact, macro-prudential policies need to be set up and implemented.

## Quantitative analysis

At this stage, based on the purpose of the research, the criteria identified in the qualitative (meta-synthesis) stage are evaluated and ranked. Therefore, the identified criteria have been evaluated using structural equation technique. In the present study, structural equation modeling methods, or partial least squares (PLS), were used to test the measurement pattern and research hypotheses. PLS software has less dependent on sample size, no need for data normalization, and focus on variance maximization, which, unlike LISREL and Amos, is more suitable for real world applications. Each of the research criteria was analyzed separately using the partial least squares technique. Finally, the overall model of the research was tested using the same technique. In the partial

least squares technique, a few points are very important:

1) The power of the relationship between the factor (hidden variable) and the observable variable is represented by the factor loading. The factor loading is a value between zero and one. If the factor loading is less than 0.3, the weak relation is considered and ignored. A factor loading between 0.3 and 0.6 is acceptable and if it is greater than 0.6 it is highly desirable.
2) Significance tests is performed when the variables are identified. The significance of the observed correlations is determined using Bootstrap1 or Jackknife cross-validation methods. In this study, an autoregressive method is used that yields the t-statistic. At the 5% error level, the observed correlations are significant if the bootstrap t-value is greater than 1.96.

## Investigating Criteria Affecting Financial Market Regulations

Based on the results of the meta-synthesis method, 21 criteria were identified for financial market regulation. The factor loading of observation in all cases is greater than 0.3, indicating that the correlation between hidden variables (dimensions of each of the main constructs) with observable variables is acceptable. After the correlation of the variables is identified, a significance test should be performed. T-value statistic is used to examine the significance of the relationship between variables. Since the significance is checked at the 0.05 level of error, so the correlation is significant if the t-value statistic is greater than the critical value of 1.96. Based on the results of the measurement indices of each criteria used at 5% confidence level the t-value statistic is greater than 1.96, indicating that the observed correlations are significant.

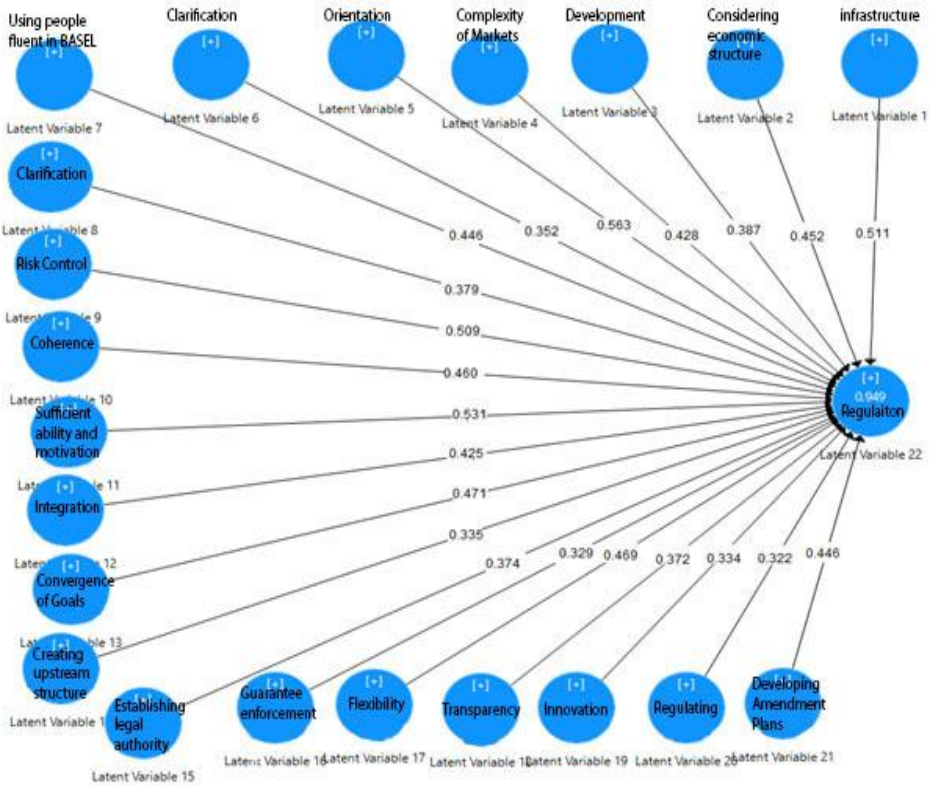


**Fig 1. Factor loadings of criteria affecting regulation**

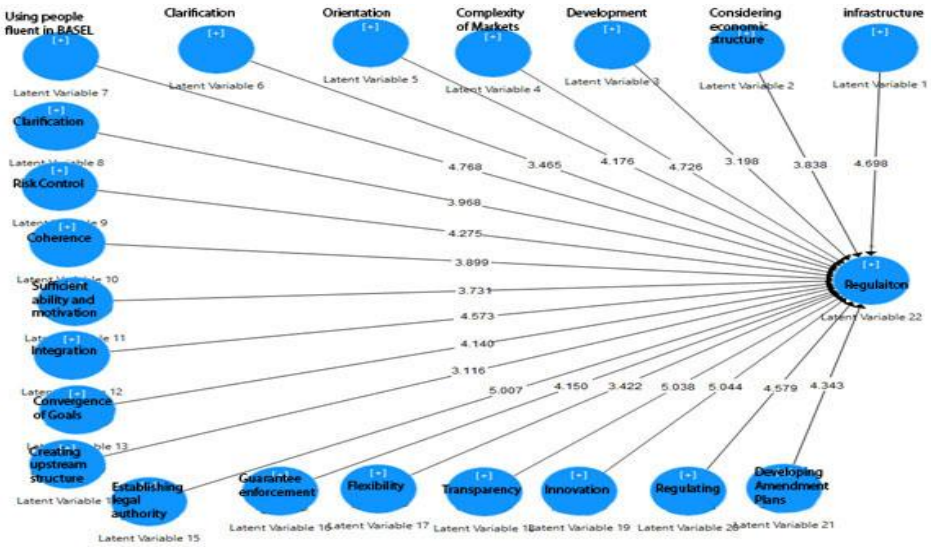


**Fig 2. Bootstrapping and t-statistic of criteria affecting regulation**

## R squares or $R^2$ criterion

It is a criterion used to connect the measurement and structural parts of structural equation modeling and shows the effect that an exogenous variable has on an endogenous variable. The crucial point here is that $R^2$ is only calculated for endogenous (dependent) structures of model and the value of this criterion is zero for exogenous structures. The higher the $R^2$ value of the endogenous structures of a model, the better the model fits. Chin (1998) defines three values of 0.19-0.33-0.36 as sign of weak, medium and strong models. The value of $R^2$ for model structures is 0.949 as shown in the figure. With respect to the three values, it confirms the suitability of the structural model.

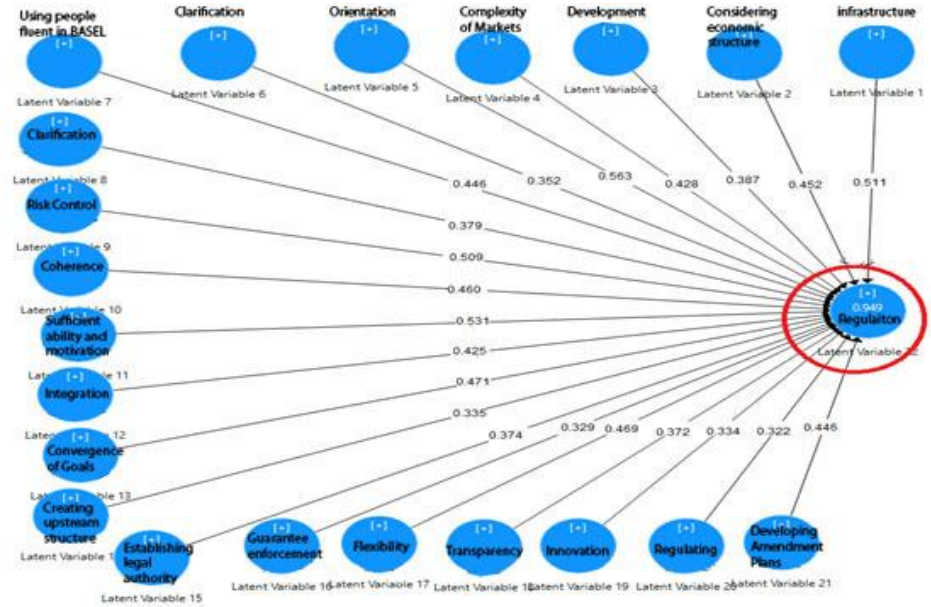


**Fig 3. Value of $R^2$**

## General model fit (GOF criterion)

This criterion applies to the general part of structural equation models. That is to say, by this criterion, the researcher can also control the general fit of the research after examining the fitting of the measurement section and the structural part of the general model of his research. The GOF (Goodness of Fitness) criterion was developed by Tenenhaus et al. (2005) and is calculated according to the following formula:

$$\mathrm{OF} = \sqrt{Avg(\mathrm{Communalities}) \times \mathrm{R}^2}$$

Communalities denote the mean of the common values of each structure and $\mathrm{R}^2$ is the mean of the stated variance of the model endogenous structures.

Wetzels et al. (2009) reported three values of 0.01-0.025-0.36 as weak, medium, and strong values for GOF. GOF Criterion Calculation is as follows:

$Avg\ (\mathrm{R}^2) = 0.949$

$\mathrm{GOF} = \sqrt{0.713 \times 0.949} = 0.822$

Therefore, the structural equation model is approved based on the above criteria. Table 1 below examines the impact of each criterion on regulation.

As shown in Table (1), all the identified criteria have factor loadings higher than 0.3 and their t-value is higher than 1.96. Therefore, the impact of identified criteria on regulation is significant and positive.

**Table1. Investigating the Impact of identified criteria on regulation**

| Criterion | Factor Loading | t-statistic | Test status |
|---|---|---|---|
| Legal and economic infrastructure commensurate with the market | 0.511 | 4.698 | Significant and positive |
| Considering the economic structure | 0.452 | 3.838 | Significant and positive |
| Developing financial markets | 0.387 | 3.198 | Significant and positive |
| Complexity level of markets | 0.428 | 4.726 | Significant and positive |
| Orientation of regulations based on international sanctions | 0.563 | 4.176 | Significant and positive |
| Clarification of High Committee members' legal powers | 0.352 | 3.465 | Significant and positive |
| Using people fluent in Basel Committee regulations, as possible | 0.446 | 4.768 | Significant and positive |
| Clarification of financial procedures in all three institutions | 0.379 | 3.965 | Significant and positive |
| Systematic risk control | 0.509 | 4.275 | Significant and positive |
| Coherence and transparency of regulations | 0.460 | 3.899 | Significant and positive |
| Sufficient ability and motivation of regulators | 0.531 | 3.731 | Significant and positive |
| Integration of traditional and modern laws | 0.425 | 4.573 | Significant and positive |
| Convergence of Financial institutions regulatory goals | 0.471 | 4.140 | Significant and positive |
| Creating an upstream coordinating structure in short term | 0.335 | 3.116 | Significant and positive |
| Establishing legal authority to enforce executive regulations | 0.374 | 5.007 | Significant and positive |
| Guarantees that the laws are enforceable | 0.329 | 4.150 | Significant and positive |
| Flexibility according to market conditions | 0.469 | 3.422 | Significant and positive |
| Transparency of international relations orientation | 0.372 | 5.038 | Significant and positive |
| Considering innovation in regulation | 0.334 | 5.044 | Significant and positive |
| Developing incentive laws for exposing correct information | 0.322 | 4.579 | Significant and positive |
| Developing medium and long term amendment plans | 0.446 | 4.343 | Significant and positive |

## Investigating Effective Criteria on Supervising Financial Market Regulation

Based on the results of the meta-synthesis method, 15 criteria were identified for supervising the regulation of the financial market. The observed factor loadings in all cases are greater than 0.3, indicating that the correlation between hidden variables (dimensions of each main structure) with observable variables is acceptable. After the correlation of the variables is identified, a significance test should be performed. T-value statistic is used to examine the significance of the relationship between variables.

Since the significance is checked at the 0.05 level of error, so the correlation is significant if the t-value statistic is greater than the critical value of 1.96. Based on the results of the measurement indices of each criteria used at 5% confidence level, the t-value statistic is greater than 1.96, indicating that the observed correlations are significant.

**R squares or $R^2$ criterion**

The value of $R^2$ for model structures is 0.516 as illustrated in Figure, confirming the suitability of the structural model fitting based on the three criteria.

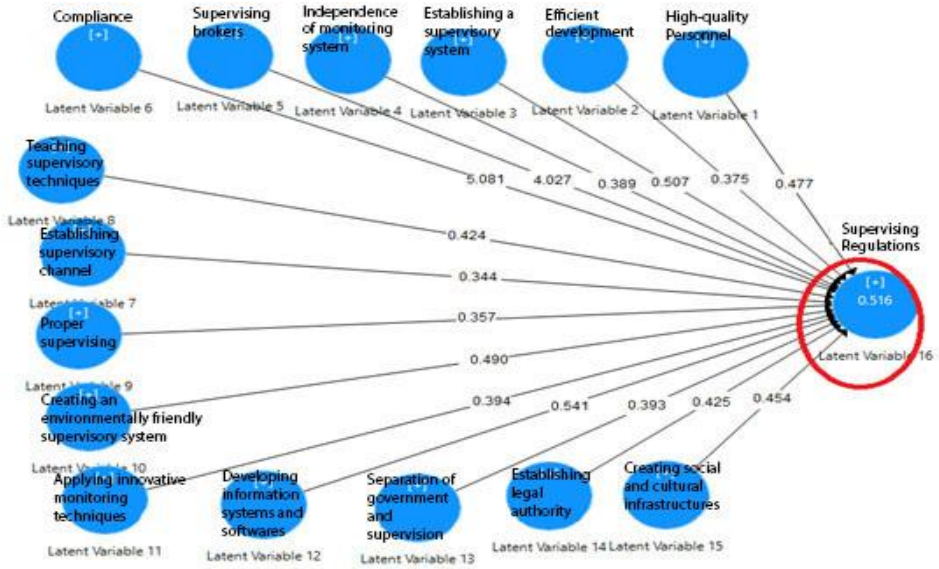


**Fig 4. Factor Loading of criteria affecting regulation**

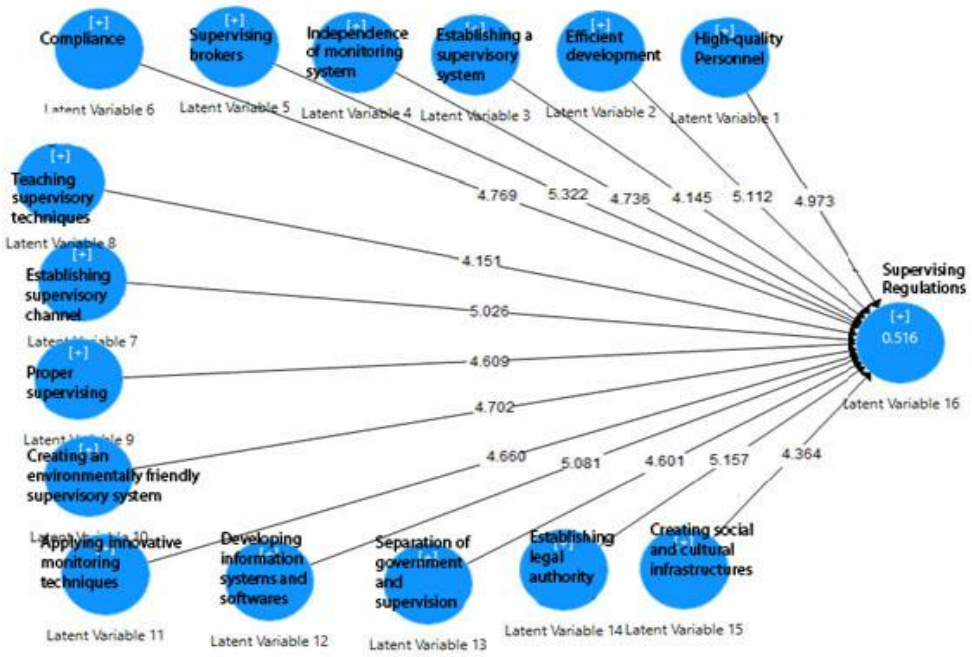


**Fig 5. Bootstrapping and t-statistic of criteria affecting regulation**

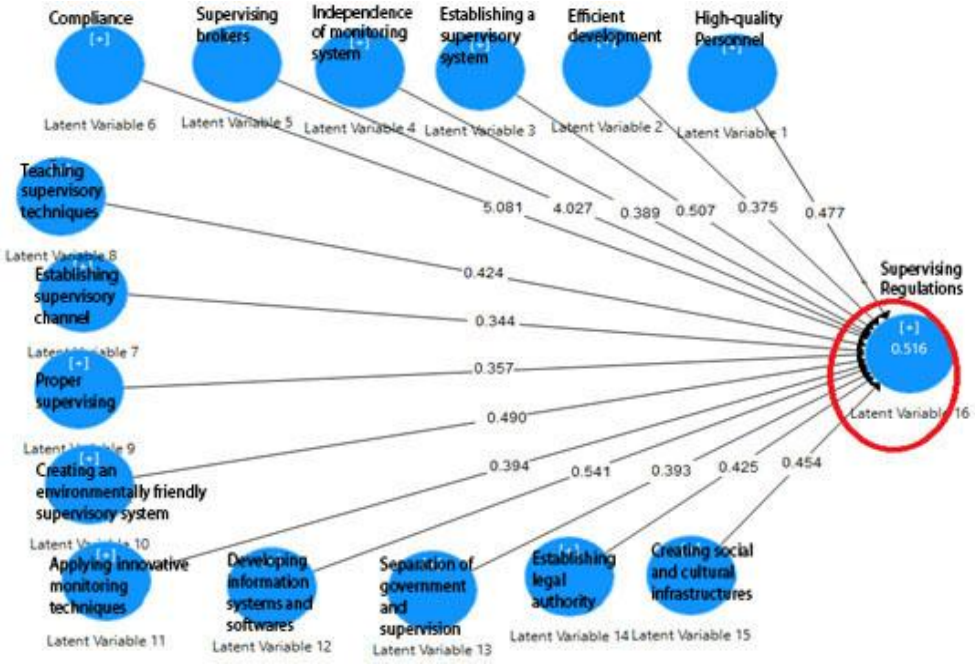


**Fig 6. Value of $R^2$**

GOF Criterion Calculation:

$Avg\ (R^2)$ =0.516

$GOF = \sqrt{0.680 \times 0.516} = 0.594$

Therefore, the structural equation model is approved based on the above criteria. Table 2 below examines the impact of each criterion on regulatory supervision.

**Table2. Investigating the Impact of identified criteria on regulation**

| Criterion | Factor Loading | t-statistic | Test status |
|---|---|---|---|
| High-Quality personnel | 0.477 | 4.973 | Significant and positive |
| Efficient development of regulatory structure | 0.375 | 5.112 | Significant and positive |
| Establishing a supervisory system based on ethics | 0.507 | 4.145 | Significant and positive |
| Independence of monitoring system from the supervisory body | 0.389 | 4.736 | Significant and positive |
| Supervising brokers | 4.027 | 5.322 | Significant and positive |
| Compliance with international monitoring system | 5.081 | 4.769 | Significant and positive |
| Teaching new supervisory techniques to managers | 0.424 | 4.151 | Significant and positive |
| Establishing supervisory channel organization in long-term | 0.344 | 5.026 | Significant and positive |
| Proper supervising on the quality of financial information and reports | 0.357 | 4.609 | Significant and positive |
| Creating an environmentally friendly supervisory system | 0.490 | 4.702 | Significant and positive |
| Applying innovative monitoring techniques | 0.394 | 4.660 | Significant and positive |
| Developing information systems and softwares to monitor each entity | 0.541 | 5.081 | Significant and positive |
| Separation of government and supervision | 0.393 | 4.601 | Significant and positive |
| Establishing legal authority to enforce regulatory requirements | 0.425 | 5.157 | Significant and positive |
| Creating social and cultural infrastructures | 0.454 | 4.364 | Significant and positive |

As shown in Table 2, all the identified criteria have a factor loadings higher than 0.3 and their t-values are higher than 1.96. Therefore, the impact of the identified criteria on regulatory supervision is significant and positive.

## Investigating Criteria Affecting the Financial Market Regulation and Supervision Model

Based on the results of the meta-synthesis approach, 18 criteria were identified for the financial market supervision and regulation model. The observed factor loadings in all cases are greater than 0.3, indicating that the correlation between hidden variables (dimensions of each main structure) with observable variables is acceptable. After the correlation of the variables is identified, a significance test should be performed. T-value statistic is used to examine the significance of the relationship between variables. Since the significance is checked at the 0.05 level of error, so the correlation is significant if the t-value statistic is greater than the critical value of 1.96. Based on the results of the measurement indices of each critera used at 5% confidence level, the t-value statistic is greater than 1.96, indicating that the observed correlations are significant.

## R squares or $R^2$ criterion

The value of $R^2$ for model structures is 0.733 as illustrated in Figure, confirming the suitability of the structural model fitting based on the three values.

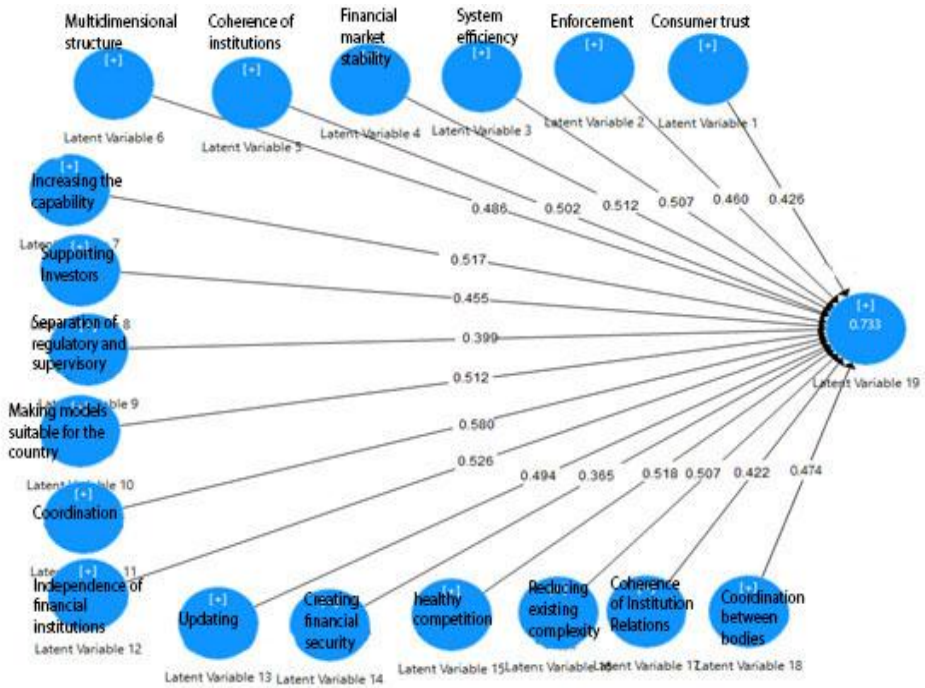


Fig 7. Factor Loading of criteria affecting regulation

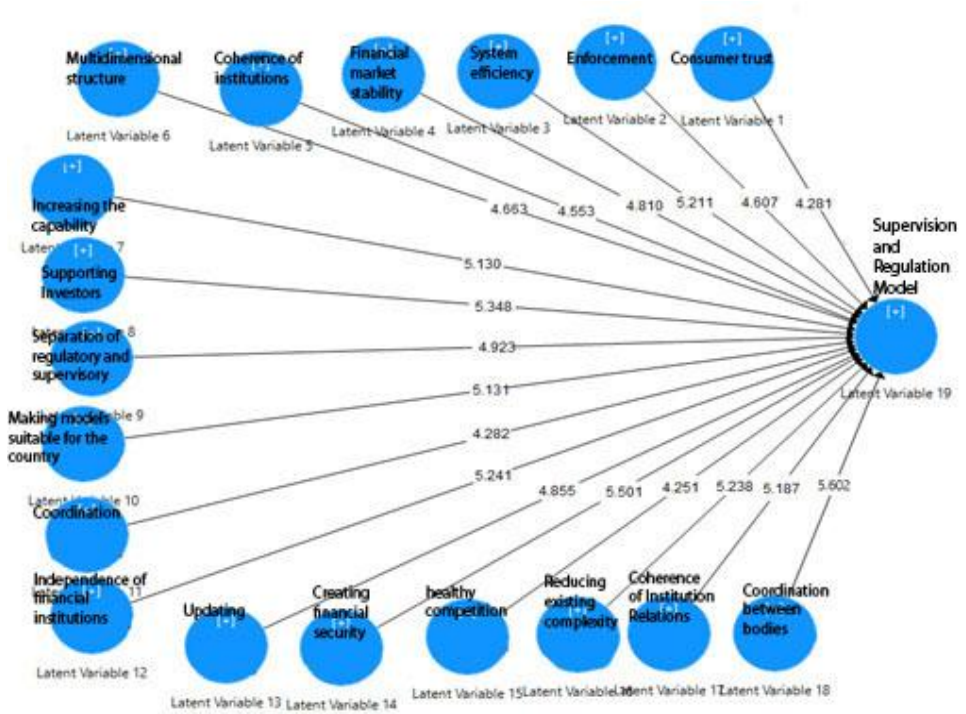


**Fig 8. Bootstrapping and t-statistic of criteria affecting regulation**

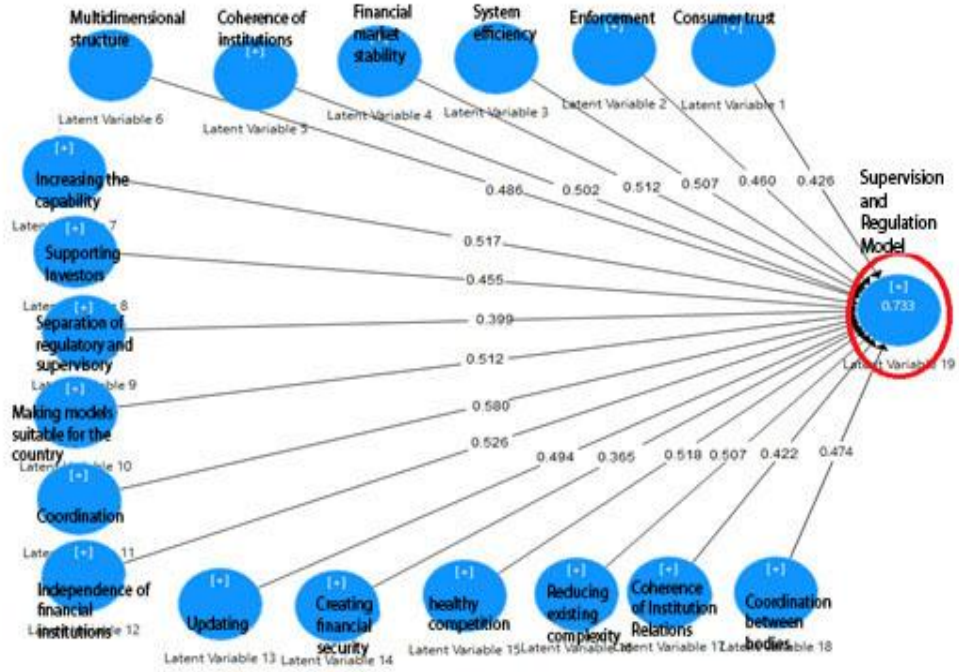


**Fig 9. Value of $R^2$**

GOF Criterion Calculation:
$Avg$ ($R^2$) =0.733
$GOF = \sqrt{0.720 \times 0.733} = 0.726$

Therefore, the structural equation model is approved based on the above criteria. Table 3 below examines the impact of each criterion on the regulation and supervision model.

As shown in Table (3), all the identified criteria have factor loadings higher than 0.3 and their t-values are higher than 1.96. Therefore, the impact of the identified criteria on the supervision and regulation model is significant and positive.

**Table3. Investigating the Impact of identified criteria on regulation**

| Criterion | Factor Loading | t-statistic | Test status |
|---|---|---|---|
| Consumer trust | 0.426 | 4.281 | Significant and positive |
| Ensure that supervision and regulation are enforceable | 0.460 | 4.607 | Significant and positive |
| System efficiency | 0.507 | 5.211 | Significant and positive |
| Financial market stability | 0.512 | 4.810 | Significant and positive |
| Coherence of institutions and central bank | 0.502 | 4.553 | Significant and positive |
| Multidimensional structure during crisis | 0.486 | 4.663 | Significant and positive |
| Increasing the capability of financial markets | 0.517 | 5.130 | Significant and positive |
| Supporting Investors | 0.455 | 5.348 | Significant and positive |
| Separation of regulatory and supervisory bodies | 0.399 | 4.923 | Significant and positive |
| Making models suitable for the country | 0.512 | 5.131 | Significant and positive |
| Coordination between financial institutions | 0.580 | 4.282 | Significant and positive |
| Independence of financial institutions | 0.526 | 5.241 | Significant and positive |
| Updating with international standards | 0.494 | 4.855 | Significant and positive |
| Creating financial security | 0.365 | 5.501 | Significant and positive |
| Creating healthy competition | 0.518 | 4.251 | Significant and positive |
| Reducing existing complexity | 0.507 | 5.238 | Significant and positive |
| Coherence of Institution Relations | 0.422 | 5.187 | Significant and positive |
| Coordination between regulatory and supervisory bodies | 0.474 | 5.602 | Significant and positive |

## 5. Discussion and Suggestions

Given the problems in the current structure of financial supervision in Iran and the study of worldwide experiences, and experts' opinions on the quantitative approach, there are two options for choosing the final model for regulation and supervision of financial markets in Iran. These two models include:

1) Establishment of Financial Supervision Organization in the form of an integrated supervision body (separate organization)
2) Establishment of two supervisory bodies based on the double-peak model including: micro prudential supervision agency (separately) and financial business guidance agency (supervised by the Ministry of Economic Affairs and Finance)

The first proposed model is an integrated model that can be organized based on the supervisory structure of a developed country such as Germany. In this model, the prudent supervision of businesses and the conduct of businesses (financial customer protection and monopoly protection), in money market (banks), capital market, and insurance market are delegated to the Financial Supervision Authority. In this model, however, part of the prudential supervision of banks related to the role of the central bank as the ultimate lender to the entity can be delegated. The second model is a double-peak model in which supervision is performed in two separate organizations based on two separate tasks of prudential supervisions and financial business guidance. It is suggested here that micro prudential supervision be independent of the central bank model as the model applied in Australia.

The final model of fitting factors affecting the regulation of financial markets was tested based on the following variables and was fitted significantly. These variables include: market-appropriate legal and economic infrastructure, economic structure, development of financial markets, degree of complexity in markets, orientation of rules according to international sanctions, clarification of the legal powers of the high committee members, maximum use of individuals who are expert in Basel regulations, transparency of financial procedures in three institutions, systematic risk control, coherence and transparency of regulations, adequate ability and motivation of transition institutions, integration of traditional and modern rules, convergence of financial institution rules objectives, creation of a co-ordinated upstream structure in short term, establishing legal authority for enforcement of executive regulations, guaranteeing the enforcement of laws, flexibility with regard to market conditions, transparency of international relations orientation, paying attention to regulatory innovations, developing incentives to disclose accurate information and formulating medium-term and long-term corrective plans.

The criteria affecting the supervision of financial market regulation were also tested using the structural equation model in the form of the final model. Model variables as described, all had significant and effective coefficients in this regard. These variables include high-quality personnel, efficient development of the supervisory structure, ethics-based supervisory, independence of the supervision system from supervisor, supervising staff, compliance with the international supervision system, training managers for new supervision techniques, establishment of a supervisory channel organization, long-term, proper supervision on the quality of information and financial reports, the development of an environmentally friendly supervision system, the use of innovative supervision techniques, the development of software and information systems to supervise each entity, the separation of government and supervision, the creation of the legal authority to enforce supervisory regulations and creating cultural and social infrastructure.

Finally, in the last part of the model the criteria affecting the model of financial market supervision and regulation were tested and monitored. Based on the final test of the structural equation model in this section, the following variables have a significant and positive impact on the financial market supervision and regulation model. These variables include: consumer trust, supervision and regulation enforcement, system performance, financial market stability, coherence of institutions and central bank, multidimensional structure during crisis, increased financial market capability, investor support, separation of regulator and supervisor units, Making models suitable for the country, coordination between financial institutions, independence of financial institutions, updating with international standards, creating financial security, creating healthy competition, reducing existing complexity, coherence of institution relations and coordination between regulators and supervisors .

Since no study was found in the country that could comprehensively cover the objectives of this study, it is sufficient to generally compare this study with previous studies. From this point of view, Najafi, Fallahshams and Madanchi Zaj (2018) studied the risk-based approach of providing a model of financial institutions' supervisory in the Iranian capital market. The results showed that risk identification had a positive and significant relationship with risk assessment and supervisory approach. Risk assessment and supervisory approach also had a positive and significant relationship with results of supervision. There is also a positive and significant relationship between risk identification and results of supervision. Therefore, factors such as risk identification, risk assessment, supervisory approach and the results of supervision are effective on financial institutions. The present study also includes aspects of systematic risk management, systematic risk control, risk assessment, systematic risk reduction, risk taking, risk-based flexibility, risk-based approach, and risk control to design a model supervision and regulation within Iranian financial market.

The extent to which financial markets are developed is one of the most effective factors in developing and reflecting the rules and regulations in each country's economy. Therefore, it is suggested to consider this issue as a prerequisite and taking into account other countries experience. Another issue to be considered in the development of rules and regulations, and an essential element in the supervision task, is the extent and scope of relations with other developing and developed economies. Another

important issue that exists is the trust in the development and supervision of financial market regulations. It is suggested that this dimension be measured alternately every few years through surveys and field studies. It is also suggested to apply international rules and regulations such as the Basel Committee, on developing and supervising in order to build relationships as well as to prepare the infrastructure needed to communicate with developing and developed countries. This can have an impact on the economic future of the country if foreign relations are established and foreign investment take place in the country. On the other hand, it is suggested to review and supervise the regulations by employing experienced international consultants who are also familiar with the internal and economic structure of Iran. Possible experienced consultants in this regard are the Iranian economic and academic elites abroad. The formation of a coherent council of elites and relevant participants in the banking, insurance and capital markets, and holding regular meetings in the form of supervising committees and the development of these regulations based on the general economic and financial system of the country, may prevent deviation of supervisory and regulatory models from the primary objectives. On the other hand, since corporate governance laws are being enacted and enforced in a number of economic areas (banks, insurance and capital markets), it is proposed to monitor the implementation of this law for each of the three sectors. In the context of monitoring the regulations in the Iranian financial markets, it is also suggested to consider the degree of flexibility in the regulations. Compatibility with the international supervisory system can also improve and facilitate supervison.

## Research limitations

As with all other researches, the analysis and results of this research are accompanied by some limitations that we discuss: First, despite all the efforts made to make the statistical population of this study cover all previous studies, but because of the fact that the scientific bases contain only registered studies, and secondly, due to the restriction of access to some books and the unavailability of some studies due to differences in the interpretation and translation of the title in different languages, unfortunately the valuable findings in unrecorded, missing or inaccessible studies are not considered in this study. Also, the interpretations expressed by combining the results in the meta-synthesis method are more likely to be influenced by subjective judgment biases than any other method, and thus the implications may be incorrect.

However, applying the audit method used by the expert members in this study, minimized this error. Finally, since the factors and results presented in this study were combined with previous studies and limited to those without inferred case-control studies, one cannot be sure that these factors encompass all the factors and are generalizable to real world financial market, because in the financial markets of different countries, there are far more complex tasks and several unforeseen independent and dependent variables that cannot be controled. In such circumstances, we cannot be certain that the findings will be realized in the real world. In addition, considering the factors and implementation of the proposed research framework in the country, an indigenous approach should be adopted.

## Suggestions for future research

The model presented in this study is related to the supervision and regulation model of financial markets in other countries. Therefore, with some modifications it can be adapted and applied to the Iranian financial market. Hence, it is suggested that the proposed models be examined separately. Also, evaluating the effect and severity of these factors on the proposed model can be a suitable subject for another research, because the development of a financial market supervision and regulation model requires a great deal of research and investigation. In this study, the factors affecting the supervision and regulatory model were identified by examining a considerable number of studies. However, it is possible to perform a field study instead and carefully review the successful and failed projects on this subject, and especially at the national level, to identify these factors, which the researcher believes will be very useful.

Considering the opinions of financial market experts can be extremely helpful in the field of developing and formulating regulations and the model for supervising these regulations, it is also suggested to future researchers to do another research with the current aim but with the Delphi technique in several complete phases and compare results of extracted model with the results of this study. Flexibility of

regulations can be studied separately as an effective dimension in this process.

## References


1) Aikman, D. Andrew, G. Kpadia, S. (2013). Operationalising a macroprudential regime: goals, tools and open issues. Bank of England.
2) Andenas, M. Deipenbrock, G. (2016). Regulating and Supervising European Financial Markets. Springer.
3) Ashcroft, J. (2012). Supervision models: trends in pension fund supervision. DEVELOPING individually FUNDED PROGRAMS, 4: 1-12.
4) Bagheri, M. Ghanbari, H. (2009). IAEA legal problems resulting from the latest investment and Gas Markets National laws. Public Law Researsh, 12(29), 25-64.
5) Brath, J. Ross, C. Levine, R. (2013). Bank regulation and supervision in 180 countries from 1999 to 2011. Journal of Financial Economic Policy, 5: 111-219.
6) Brunnhuber, S. Fink, A. Kuhle, J. (2005). The financial system matters: future perspectives and scenarios for a sustainable future. Futures, 37: 317-332.
7) Calvo, D. Crisano, J. Hohl, S. Gutierrez, P. (2018). Financial supervisory architecture: what has changed after the crisis? FSI Insight, 8: 1-39.
8) Cihak, P. Podepiera, R. Swinburne, W. (2006). Is One Watchdog Better Than Three? International Experience with Integrated Financial Sector Supervision. International Monetary Fund, 57: 3-36.
9) Demeaestri, C. Sourrouille, D. (2003). Integrated Financial Supervision: Experiences in Selected Countries. Cataloging -in-Publication data provided by the Inter-American Development Bank Felipe Herrera Library, 32: 1-41.
10) Faraji, S. (2012). Changes in the structure of banking supervision in the country. Sepah Bank Risk Research and Control Department, 1-44.
11) Fernandez, E. (2013). Structural reform and supervision of banking sector in France. OECD Journal: Financial Market Trends, 1: 1-8.
12) Ferran, E. (2014). Institutional Design for Financial Market Supervision: The Choice for National Systems. University of Cambridge, 1-27.
13) Freixas, X. Laeven, L. Peydro, J. (2015). Systemic Risk, Crises, and Macroprudential Regulation. Massachusetts Institute of Technology.
14) Georgsson, M. Vredin, A. Sommar, A. (2015). The modern central bank's mandate and the discussion following the financial crisis. Sveriges riksbank economic review, 1: 1-36.
15) Giorgio, G. Noia, C. (2010). Designing a Regulatory and Supervisory Framework for Integrated Financial Markets. Università LUISS Guido Carli, 4: 1-22.
16) Han, M. (2016). Central Bank Regulation and the financial Crisis. Palgrave Macmillan studies in banking financial. PALGRAVE MACMILLAN.
17) Heydari, F. Rajabi, Z. (2016). Developing a Paradigmatic Model of Governing Effective and Efficient Supervision on the Banking Network of Iran. Journal of Islamic Financial and Banking Studies, 2, 3.
18) Ingves, S. (2004). Financial Sector Regulation: Issues and Gaps. International monetary fund, 1: 1-43.
19) Kahn, A. (2018). A Behavioral Approach to Financial Supervision, Regulation, and Central Banking. IMF working, 4: 1-56.
20) Kardan Zirak, N. (2013). Structure and Duties of the Capital Market Supervisor. Thesis for Master of Science in Shahid Beheshti University.
21) Kawai, M. Prasad, E. (2011). Financial Market Regulation and Reforms in Emerging Markets. Asian development bank institute, 4-39.
22) Khaki, Q. (2000). Research Methodology with the Approach to Thesis Writing. Baztab Publication.
23) Lastra, R. (2003). The governance structure for financial regulation and supervision in Europe. Central Banking and Banking Regulation, 1: 108-144.
24) Lukonga, I. (2015). Islamic Finance, Consumer Protection and Financial Stability. International Monetary Fund, 15: 1-39.
25) Lumpkin, S. (2007). A Review of the Pros and Cons of Integrating Pension Supervision with that of Other Financial Activities and Services. International of Organization of Pension Supervisor, 1: 2-26.
26) Martinez, J. Rose, T. (2003). International Survey of Integrated Financial Sector Supervision. Policy research working paper, 30: 1-52.

27) Mishikin, F. (2000). Why is important and what are the issues? National Bureau of Economic Research, 50: 1-38.
28) Montanaro, E. (2016). Central banks and financial supervision: New tendencies. Financialisation, economy, society and sustainable development, 134: 1-43.
29) Mostafapour, M. Yavari, M. Barzegari, M. (2015). Financial markets supervision system; integrated model. Economic Journal, 7, 23-42
30) Nadeali, M. Rasouli, M. Soltan-al-olamaei, B. Haji Doulabi, H. Nasiri, S. (2017). Interaction of money market and capital market in Iranian economy. Ravand: Quarterly Scientific and Specialized Journal of Central Bank of the Islamic Republic of Iran. 77, 65-114.
31) Najafi, R. Fallahshams, M., Madanchi Zaj, M. (2018). Introduction of Supervision Pattern on financial Institution in Iran Capital Market with Risk-Based Approach. Journal of Securities Exchange, 11(43), 23-72.
32) Prochniak, M. Wsiak, K. (2017). The impact of the financial system on economic growth in the context of the global crisis: empirical evidence for the EU and OECD countries. Empirica, 44:295-337.
33) Scholten, M. Ottow, A. (2014). Institutional Design of Enforcement in the EU: The Case of Financial Markets. Utrecht Law Review, 2: 80-93.
34) Shaddady, A. Moore, T. (2019). Investigation of the effects of financial regulation and supervision on bank stability: The application of CAMELS-DEA to quantile regressions. J. Int. Financ. Markets Inst. Money, 58: 96-116.
35) Yuan, K. Paech, P. Lou, D. Zhou, H. (2018). A financial regulatory regime reform template to ensure financial stability for the Chinese economy. Financial Markets Groups, 1: 100-147.