Studying the Structure of Ownership and Efficiency of Insurance Companies in Iran

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Abstract: The purpose of this study is determining the suitable structure of ownership to increase the efficiency of insurance companies. Privatization and attaining to free economics is one ways of increasing efficiency.knowing about relationship between companies' ownership structure and their efficiencies is among the ways through which one can be assured of success of private companies. By having knowledge of relationship between companies' ownership structure and their efficiencies it is possible to take steps towards increasing the companies' efficiencies. Increasing the efficiency of insurance companies cause economic growth and development and stability of financial and monetary markets and economic savings. Statistical universe of the present research is active companies at insurance market during the years 2008-2010. for testing the hypotheses of research with applying the information of financial statements companies during 2008-2010 tow method has been used:1 – data envelopment analysis and 2 – financial ratios.Findings from the present research show that compared to governmental and other companies private companies with legal block structures enjoy high efficiencies ,and that the best structure for donating governmental companies to private sector and investments is private insurance companies with legal block structure.

Key words: Ownership centrality · Ownership structure · Efficiency · Data envelopment analysis method · Financial ratios · Blocks ownership

INTRODUCTION

Privatization and attaining the market based economy is among the ways that cause increase in efficiency. Studying the relationship between companies' ownership structure and their efficiencies is among the ways through which one can be assured of success of private companies. By having knowledge of relationship between companies' ownership structure and their efficiencies it is possible to take steps towards increasing the companies' efficiencies through integrating them and offering the required techniques for block ownership.

Since effectiveness of insurance companies as a set of the main economic components in each country and resources can be used in their best ways and these will cause economic growth and development, studying the structure of insurance companies' ownership and determining the relationship between efficiency and ownership structure leave direct influence on growth, development and enjoying the benefits of the whole economy and will cause economic growth and development.

Together with increase in the number of companies ownership structure becomes more dispersed and presence of managers in ownership field is increased and consequently, the issue of delegation theory enjoys more importance.

According to delegation theory contradiction between stock holders' benefits and management is one of the important subjects that has been taken into account by researchers during the recent decades. On the basis of researches related with participatory sovereignty, ownership structure is one of the solutions for this complicated issue. Participatory sovereignty is the set of rules and policies governing the relationship between the country's managers, stockholders and auditors and by using a supervision system, this set supports the rights of stockholders. Thus, high level efficiencies for centralized and institutional ownerships can be gained on the basis of participatory sovereignty principle together with supervision, control and the right for control and influence.

The present research has been offered in continuation of the five following parts: 1- studying the literature of the subject 2- studying the concepts and methods of efficiency measurement 3-research methodology 4- studying and analyzing the research theories 5- conclusion and offering the proposals.

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Literature of the Subject: Does ownership structure influence the efficiency of insurance companies? According to micro economy theories when the market is of competitive nature changes in the ownership structure and increase in capital will not lead to increase in efficiency. Efficiency doesn't have any relation with ownership distribution. Through any ownership distribution, free exchange leads to the optimized point.

In 1985, Demsetz and Lehn tested the relation between ownership centrality and efficiencies of America's bourse companies for the first time. They showed that there is no relationship between centrality and efficiency. Research done by Demsetz and Lehn approved the main doctrine of economists that states: the centralized amount of capital doesn't have any effect on profitability of the company and thus, efficiency is independent of ownership distribution on capital [1].

In this regard, Cummins *et al*. [2] studied the relationship between integrations, ownerships, efficiency and profits of scale in America's insurance industry. They estimated the expense and income efficiency using the data envelopment analysis during 1977-1988. Results showed that compared to institutions that have not experienced integrations and ownerships, ownership institutions enjoy more efficiencies.

Soong [3] believes that due to the high volume of investment, shareholders with high percent of ownership of the companies' shares will mostly supervise the company's operation and will mostly advise and comment on their managers and in this way, the company will enjoy better operation and will be efficient.

Shlifer and rishney [4] believe that the structure of centralized ownership which bears profit maximization and exerts enough control on the company's assets may best control the management of the company [4].

Ariane Chapel [5] showed that about two thirds of active companies in Belgium bourse mainly enjoy the structure of centralized ownership, because one way for increasing the control exertion on companies is ownership centrality. While most of the bourse companies in Belgium tend to the combination of macro ownership whose main shareholders have the right to vote on at least 50%-60& of the company's shares, Chapel knows the main cause of this finding in the point that main shareholders in Belgium have high control power [5]. In a research on Germany, England and United States of America, Perak Siffert found that main shareholders and especially the presence of legal shareholders in companies and centralized ownership have significant relationship with the company's operation. Also, obliged managers leave positive effect of company's operation [6].

In a research done during 2005-5006 and bearing the title " State of Technical Efficiency and Yield Compared to the Selected scale from Private and Governmental Insurance Companies" Mr. Ja'far Ebadi (2008) concluded that during the years 2005-2006, governmental insurance companies (Iran, Asia, Alborz, Dana), compared to the acceptable scale, have experienced reduction and that, in comparison with governmental insurances private insurances enjoy more efficiencies [7]. In 2005, Mr. Abolghasem Mahdavi and Mr.Ahmad Heidari studied the ownership structure and efficiency of active companies in bourse market for bonds and concluded that ownership centrality has positive and significant effect on efficiency of companies [8].

Taking the issues of privatization of insurance companies and transferring their ownership and management to private sectors to assure the efficiencies of insurance companies and getting over the anxiety, ownership structure and its relationship with efficiencies of insurance companies are studied and the best ownership structure is determined and this can guide the investors and be of use by policy makers of macro economy and governmental institutions in integrating and buying the ownerships.

Concepts and Methods of Measuring the Efficiency: Regarding the limitation in available resources human beings have always attempted to take the maximum profits from minimum possibilities and resources. Such attempts are for the purpose of attaining the higher efficiency which is defined as the ratio of maximum output of an economic unit to its inputs. In this research the two methods of 1- data envelopment analysis and 2- financial ratios will be used to study the efficiency of insurance companies. Since financial ratios have less been used in researches that have taken place to measure the efficiencies of insurance companies, the present research is to explain and offer a method to be used for taking the advantage of financial ratios to measure the efficiency, evaluate the operation and give ranks to insurance companies.

Data envelopment analysis Method: Farrell [9] is among the persons who have worked a lot in the field of efficiency and he has also offered a method to evaluate it and later this was led to a method named as data envelopment analysis. In his paper [9] bearing the title "Measuring the Production Efficiency he has defined efficiency of the company as" the high ratio of production of an output to the amount of an input". According to this

definition, Farrell has also described different kinds of efficiencies as follows [9]:

- Technical efficiency offers the efficiency of a company in gaining maximum amount of output from a given set of inputs. 2. Allocative efficiency was defined as the ratio of economic efficiency to technical efficiency. 3. Economic efficiency was defined as the ratio of the least possible expense to the existent expense.

In order to evaluate the efficiency different methods have been offered by researchers and they may be classified into two groups of:

Parametric Methods 2. Non Parametric Methods: Data envelopment analysis Method: may be introduced as one of non parametric methods. In this method, using techniques of linear planning considered units are evaluated. Non parametric method is more appropriate for evaluation of efficiency of units (productive-service) with more than one output. The Paper (CCR) that was published by Charnes, chaenes *et al*, [10] in 1978 introduced the DEA (Data Envelopment Analysis) method for the first time. This is one of the most important non parametric methods for measuring the efficiency in which the efficient boarder is experimentally estimated on the basis of available information. And, since in attaining the boarder function all data is given developmentally it is called data development analysis [10]. In order to measure the efficiency by DEA - a computers software named DEAP is used which is based on input for production and X1 and X2 variables, as well as output Y. Technical efficiency graph in the state of the two (X1 and X2) inputs and an output (Y) is shown in figure 1.

In Figure 1 the points located on the curve will offer equality of SS" of technical efficiency if a company uses certain amounts of inputs (specified on point P) to produce an output unit. Technical non efficiency of the company is shown by distance QP. In percent terms, the ratio QP/OP shows technical efficiency and it can be reduced without reduction in production. According to Farrell's definition, technical efficiency is measured by the ratioTE=QP/op which is an amount between 0 and 1. In general, technical efficiency (meaning being located on similar production curve (SS')), specialized efficiency (meaning being located on the line of production expense (AA')) and economic efficiency are obtained on the tangent point of similar production curve (SS') and similar line (AA').

Inputs and Outputs: In most studies that have been done on efficiency and earnings scale labor force and fixed assets of the companies have been used as inputs, such as Deacon's study (2001) and in some studies more inputs have been used. For example, in their studies, Tone *et al*. [11] have used the business, borrowed capital, labor force and shareholders' capitals services as outputs. But in most of the studies labor force and fixed assets have been used as the main inputs [11]. The present research uses data envelopment analysis method to calculate efficiency and earnings scale of insurance companies. Also, inputs, assets, shareholders' rights, labor force, insurer expenses and outputs including insurer's earned and investment earned and added value which are computed as the following, have been used:

Added value = earned premiums + income due to investment – payable commission – claims and expenses of insurers

In principle, efficiency measurement may be studied on the basis of minimizing the production factors and maximizing the product. Therefore, in order to estimate the efficiency, this research have taken the maximization of products (premium producing) and increase in investment earnings and minimizing the production factors (insurers expenses) into account and theories of the paper will be analyzed and tested on its basis.

Financial Ratios: Studying the financial ratios is one of the most important equipments of financial analysis to evaluate the state and operation of the companies. Financial ratios method is one of the non-boarder methods used for analyzing the company's financial state and comparing it with other companies using the published financial statements and taking the advantage of accounting system. From the viewpoint of Normative Approach, financial ratios are compared with the base (annual average and index) and then the operation is justified, but from the viewpoint of Positive Approach financial ratios are used to estimate its operation, business failure and evaluation. Studies showed that both viewpoints have come to some successes in the past.

In order to rely on results from data envelopment analysis method and financial ratios, not any consensus have solely been obtained concerning the selection of dominant model, however, some requirements have been proposed that upon their meetings calculated efficiency using different methods can be relied on and it can be used in decision makings (Berger, Ferrier, Humphery & Bauer) [2].

1. The amount of efficiency with different methods should have comparable average standard deviation and other distributions. 2. Different methods should classify institutions almost at the same rank. 3. In determining the best and the worst institutions, different methods should act very close to each other. 4. Using different methods, institutions' efficiency and/or lack of efficiency should be monotonous during the time passage. 5. Efficiency of any institution by different ways should logically be in coordination with requirements of competitive market, i.e. if an institution is not administrated efficiently, it shouldn't be able to continue its existence. 6. Measured efficiency through boarder methods should be monotonous with operational methods and non boarder methods (financial ratios) such as assets' yields or the ratio of earnings to expenses.

Financial ratios used in organizations to analyze the financial state of companies and are applied in accounting and financial management texts are of the five groups as follows:

1. Liquidity ratios 2. Leverage ratios 3. Activity ratios 4. Profitability ratios 5. Market ratios.

Financial ratios that have been pointed out are significant rations that can measure the efficiency, ratios of data, inputs and outputs. In this research profitability ratios have been used as follows:

1. The ratio of yield of shareholders' rights = the ratio of gross profit on the sum of shareholders' rights
2. The ratio of yield of assets' sum = the ratio of (net profit + profit expense) on the sum of assets.

Ratio analyzing technique is one of the standard techniques that is used for the purpose of operation benchmarking in insurance companies and is also applied to consider different concepts of operations and different ratios are also used to compare different dimensions of operation and similar units. The most common ratios used in evaluating are claims and expenses ratios. Claims and expenses ratios are computed regarding the amount of paid claims, evaluation expense and contraction expenses. In order to study the efficiency and yield of assets and study the economics of scale effects ratios for insurance industry can be used and in the present research ratios can be used as follows:

1. Claims coefficient = the ratio of claims incurred on earned premiums 2. Insurers expenses ratio = the ratio of insurers expenses on earned insurers.

Research Methodology: Regarding the objectives the present research is an applied research because it has studied the relationships between variables in insurance market and is to explain the relations and offer techniques to increase the efficiency of insurance companies in market and also has taken steps towards compiling appropriate methods in insurance industry to measure the efficiency and evaluate the operation , using financial ratios in related analysis of efficiency of insurance companies and comparing it with data development analysis method.

This is also a descriptive research and it enjoys a comparative approach and the time domain of the present research includes all of active insurance companies at insurance market level in 2008-2010 which had gotten activity certificate from central insurance of Islamic Republic of Iran.

Data Gathering Method: Data and information gathering has taken place in the library and field forms. In section about theoretical foundations the research has been done by referring to valid local and foreign occupational journals and thesis, papers and research done in the field of efficiency. In field measuring, referring to insurance companies and their internet sites and studying their operations and interviewing with managers and specialists of the company and using financial statements of insurance companies have taken place. Statistical universe of the present research are active companies at insurance market level which have been under supervision of central insurance of Islamic Republic during the years 2008-2010. They include:

1. Iran insurance 2. Asia Insurance 3. Alborz 4. Dana 5. Dey 6. Mellat 7. Omid 8. Hafez 9. Saman 10. Pasargad 11. Towse'eh 12. Nowin 13. Parsian 14. Karafarin 15. Razi 16. Iran Moeen 17. Moallem 18. Sina19-mihan.

In order to test the theories and analyze them the two method of: 1- data envelopment analysis and 2. Financial ratios have been used.

hypotheses of the Research: On the basis of research objectives two main questions are put forward: 1. is there any relationship between the ownership structure and efficiency of insurance companies? 2. Are main or block shareholders of insurance company's influential in increasing the yield and profitability of insurance companies or not? Thus, according to the research questions, the main theory is formed as follows and it will be tested and analyzed.

The Main Theory: There is significant relationship between ownership structure and efficiency of insurance companies. On the basis of the main theory two minor theories are put forward that will be tested and studied:

- Private insurance companies enjoy better efficiency compared to governmental insurance companies.
- Private insurance companies with legal block structures enjoy better efficiency compared to private insurance companies with real block structures.

Ownership Structure of Insurance Companies: In Iran's insurance market ownership structure of insurance companies primarily is divided into two sectors: 1. Governmental 2. Private.

The ownership structure of private sector is managed in the form of institutional or blocks ownership by real or legal persons. (Table 6 and 7).

Efficiency Evaluation of Insurance Companies and Testing the Hypotheses
Data Envelopment Analysis Method: Final results from data envelopment analysis method were computed using DEAP software and have been shown in table 2 and 3.

Amounts written in this table show that private insurances with block legal ownership have had the highest technical efficiency in 2008-2010 and that, private insurances with block real ownership have taken the second place efficiency after the mentioned ones and the governmental insurances have taken the third and last place for them. According to findings from the research the main question of the research "Which ownership structure enjoys more efficiency?" has been answered.

Private insurances with block legal ownership bear the highest technical efficiency and private insurances with block real ownership are at the second level and governmental insurances have the least technical efficiency and have taken the lowest and last place for themselves. Therefore, minor theories of the research, i.e. high efficiency of private companies in comparison with governmental companies and high efficiency of private companies with block legal ownership compared to private companies with block real ownership have been approved.

In case of scale efficiency shown in table 1 numbers and figures related to data envelopment analysis method have been offered. Regarding the contents of the table, private companies compared to governmental companies enjoy higher average efficiency in the years 2008-2010.

Table 1: Efficiency in Relation to Insurance Companies in 2009-2010

Co.	Iran	Asis	Alborz	Dana	Parsian	Mellat	Karafarin	Moallem	Sina	Razi	Dey	Pasargad	Novin	Saman	Towsee'	Iran Moeen	Hafez	Omid	Mihan
2008	Dec.	Dec.	Inc.	Dec.	Dec.	Fixed	Dec.	Inc.	Dec.	Dec.	Dec.	Fixed	Dec.	Dec.	Inc.	Fixed	Inc.	Inc.	
2009	Dec.	Dec.	Inc.	Inc.	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	Dec.	Inc.	Dec.	Inc.	Fixed	Inc.	Inc.	
2010	Dec.	Dec.	Dec.	Inc.	Dec.	Dec.	Inc.	Dec.	Inc.	Inc.	Inc.	Dec.	Inc.	Inc.	Inc.	Fixed	Inc.	Inc.	Inc.

Table 2: Average Efficiency Comparison of Insurance Companies (separately) in 2008-2009

Insurance Companies with Governmental Ownership			Private Insurance Companies with Block Real Ownership			Private Insurance Companies with Block Legal Ownership		
Technical Efficiency	Economic Efficiency	Scale Efficiency	Technical Efficiency	Economic Efficiency	Scale Efficiency	Technical Efficiency	Economic Efficiency	Scale Efficiency
22%	45%	52.7%	36%	50%	82%	46%	56.2%	74.6%

Source: research calculation

Table 3: Average Efficiency Comparison of Insurance Companies (separately) in 2010

Insurance Companies with Governmental Ownership			Private Insurance Companies with Block Real Ownership			Private Insurance Companies with Block Legal Ownership		
Technical Efficiency	Economic Efficiency	Scale Efficiency	Technical Efficiency	Economic Efficiency	Scale Efficiency	Technical Efficiency	Economic Efficiency	Scale Efficiency
25%	96%	61%	26%	67%	94%	47%	81%	77%

Source: research calculation

Table 4: Comparison average of Financial Ratios of Insurance Companies in 2008-2009(separately)

Insurance Companies with Governmental Ownership				Private Insurance Companies with Block Real Ownership				Private Insurance Companies with Block Legal Ownership			
Asset Efficiencies	Efficiency of Share	Claims Coefficient	Ratio of Insurer Expenses	Asset Efficiencies	Efficiency of Shareholders' Right	Claims Coefficient	Ratio of Insurer Expenses	Asset Efficiencies	Efficiency of Shareholders' Right	Claims Coefficient	Ratio of Insurer Expenses
2.5%	6.5%	74.6%	92.2%	5%	11.5%	67%	85%	5.1%	10.%	58%	76.9%

Source: research calculation

Table 5: Comparison average of Financial Ratios of Insurance Companies in 2010(separately)

Insurance Companies with Governmental Ownership				Private Insurance Companies with Block Real Ownership				Private Insurance Companies with Block Legal Ownership			
Asset Efficiencies	Efficiency of	Claims Coefficient	Ratio of Insurer Expenses	Asset Efficiencies	Efficiency of Shareholders' Right	Claims Coefficient	Ratio of Insurer Expenses	Asset Efficiencies	Efficiency of Shareholders' Right	Claims Coefficient	Ratio of Insurer Expenses
3%	7.5%	72%	79%	2%	6%	81%	94%	4.3%	9.1.%	61%	60%

Source: research calculation

Table 6: Indication No. 2 Ownership Structure of Insurance Companies, Active in Iran's Insurance Market in 2008-2009

1. Governmental Companies	2. Private Block Real Companies	3. Private Block Legal Companies
1.	Iran	1. Razi 1. Dey2. Sina3. Mellat4. Omid5. Parsian6. Hafez
2.	Asia	7. Saman8. Moeen9. Pasargad10. Tosee'11. ovin
3.	Alborz	12. Karafarin13. Iran14.Moallem
4.	Dana	

Table 7: Indication No.3 Ownership Structure of Insurance Companies, Active in Iran's Insurance Market1n 2010

1. Governmental Companies	2. Private Block Real Companies	3. Private Block Legal Companies
1.Iran	1. Razi	1. Dey 2. Sina 3. Mellat 4. Omid
2.Dana		5. Parsian 6. Hafez 7. Saman
		8. Moeen9. Pasargad 10. Tosee'
		11. Novin12. Karafarin 13. Iran
		14.Moallem15.Alborz 16.Asia

This shows that for the purpose of decreasing the average expense and attaining the optimized scale, governmental companies should make use of the less scale. In case of economic efficiency of insurance companies – results from analysis using the DEAP method have been offered in table 2and 3. Insurance companies with structure of private ownership bear the average economic efficiency in 2008-2010. This shows that private companies enjoy good management, control and expense reduction. Regarding economic efficiency, governmental companies have laid at lower levels than private companies. It should be noted that in order to use the DEAP software to test the theories, assets and human power have been used as inputs.

Testing the Hypotheses Using Financial Ratios Method: Results from analyzing information and data gathered from financial statements using financial ratios have come in table 4and 5. They have been used in order to study the structure of ownership and efficiency of insurance companies and testing the theories.

Results from ratio of earned on total assets show that during the years 2008-2010 insurance companies with governmental structure with the least earned assets had been among insurance companies. Private insurances with block-legal ownership had been at the top and private insurances with block-real ownership had been at the second place. Thus, company's theories regarding efficiency preferences of private companies compared to governmental ones and efficiency preferences of private
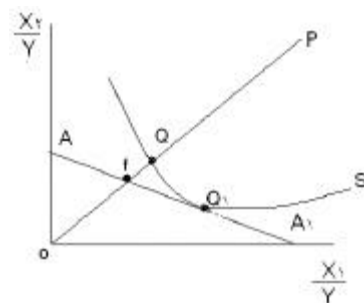

Fig. 1: Displaying Technical Efficiency in the State of Two Inputs and One Output Concerning Z Company

block companies compared to real block ones were approved and this finally led to confirmation of the main theory of the research.

Since the range of earned assets of consistent companies on the basis of experimental studies had been 25%-40%, insurance industry enjoys very low yield in Iran.

CONCLUSION

On the basis of finding from the research, using data envelopment analysis method and financial ratios method shows that both methods are in accordance with each other and so, the main theory of the research and its main question "determining an appropriate structure for efficiency of insurance companies" have been approved and answered, respectively.

Results from studies show that private companies with block-legal ownership enjoy the most efficiency and yield. Institutional investors as the owners of the capital can influence the decisions made by the company and their presence will lead to changes in behaviors of the companies' managers. Because of enough control on company's assets and infiltrating the capital-acceptant companies, they can control the administration of the company in an influential way, decrease the delegacy expenses and increase the company's operation. Thus, the present research can offer a technique for privatization and granting the governmental sector to the private one. Governmental companies should carefully be granted to private companies with enough capital and powerful management. In this case, they will be able to lead the company and cause high efficiency and enjoyment and consequently to realize the efficiency of insurance market. Therefore, according to findings from the research the following suggestions are offered:

- It is proposed that similar researches in relation to efficiency of companies active in Tehran's bourse of valuable papers to be done on the basis of efficiency of insurance companies and in this way, the efficiency state of insurance companies will be known compared to companies of other industries.
- It is proposed that similar researches to be done on relationship between size of the company and efficiency of insurance companies.
- Regarding the release in insurance industry and eliminating the tariff system and replacing financial control system it is proposed that efficiency of insurance companies to be searched and investigated.
- Regarding the point that yield and efficiency of insurance companies are functions of risk acceptance, it is proposed that in case of efficiency of insurance companies their relationship with the amount of risk acceptance some investigations to be made.

REFERENCES

1. Demsetz H. and L.B. Villa, 2009. ownership structure and corporate Performance J. Corporate Finance, 7: 209-233.
2. Commins, J.P., SH. Tenyson and MA. Weiss, 1998. Consolidiation and efficiercy in the life insurance Industry, working pp: 98-18, Federal Reserve Bank of philade lphia.
3. Soong Soo, H., 2006. ownership structure and characteristics of earnings. University of Illinois.
4. Shleifer Andrei and Rishny robbery, 1997. A survey of corporate Governance. J. Finance, 52: 737-783.
5. Ariane Ch., 2004. Block investments and the race for corporate control in Belgium. university librede Bruxelles, Belgium.
6. Bruce Seifert, Halit Gonen Ceand Jim wright, 2002. "The International evidence on performance And Equity Ownership by insiders Blockholders and institute Old Dominion University University.
7. Ebadi, Ja'far and Bagherzadeh Hojjatollah, 2009. "Studying the Technical Efficiency and Yield in a Selected Scale of Governmental and Private Insurance Companies. 'J. Economic Res. Published by Tehran University, pp: 84.
8. Mahdavi, Abolghasem & Meedari, Ahmad, 2005. "Ownership Structure and Efficiency of Companies Active in Tehran's Stock Market" economic research magazine, No. 71
9. Farrell, M.J., 1957. The measurement of productive efficiency. J. Royal statistical society, serries A, Cxx, part B, pp: 253-90.
10. Charnes, A cooper, ww 8 Rhodes E 1978. Measuring Efficiency of decision making, unit, European J. Operational Res., 2: 429-44.
11. Tone, K. and B.K. Sahoo, 2005. Evaluating cost efficiency and Returns to scale in the life insurance corporation of India Using Data Envelopment Analysis, Seio Economic Planning Sci., 3(4): 261-85.