Study on the relationship between the Agency cost and operating leverage in Tehran stock exchange

Abdullah Habibi Moheb Seraj, Ali Sheibani and Reza Mohammadi

1Master student of Islamic Azad University of Tehran- Nishbur Science and Research Branch, Nishbur, Iran
2Master student of Islamic Azad University, Mashhad, Iran.
3Master student of Ferdowsi University of Mashhad, Iran.

ARTICLE INFO

ABSTRACT

Article history:
Received 11 September 2013
Received in revised form 21 October 2013
Accepted 5 October 2013
Available online 5 November 2013

Key words:
Agency costs, Operational leverage

The theory of agency brings a kind of conflict and contradiction between owners and managers, which is reduced with financial reporting, to some extent. Continuous or successive financial reports are one of the ways that owners can supervise and monitor the terms of the contracts, which they have initiated with the managers. Accountants know this traditional reporting a type of "enterprise" or "accountability" versus the owners of the firm. The purpose of this article is to study the relationship between Agency costs and operational leverage. To collect the data, the information of 32 companies, accepted in Tehran stock exchange during the years 2008 to 2011 through using the method of Panel data in two softwares EVIEW and SPSS has been analyzed and reviewed. The results of this research indicate that there is no meaningful relationship between the Agency costs and the ratio of assets turnover and the ratio of operation expenses to the sales with operational leverage.

INTRODUCTION

Agency theory has emerged versus the lack of ownership phenomenon and as one of the theories of firm, in the form of a set of explicit or implicit contractual relations among shareholders (main) and management (agent) has been expressed. Upon which the second group is obliged to carry out certain activities for the first group and is allowed to make decisions on behalf of them. This relationship is based on a couple of acceptable hypothesis [1].

1. Management as an individual or individuals with the diligence and awareness seeks to maximize their expected interests, so that these interests determine their behaviors and decisions.

2. Based on the above cases, management is looking to maximize their profits even if the costs of the shareholders increase. Here, some sort of conflict of interests will arise, so some mechanisms are required to minimally reduce these types of conflicts.

3. In recognition of the conflict of interests between the two sides, meanwhile, in recognition of the common points between them, the firm continues its operations, through being insured of the activity[2].

In this field of research, Jensen and Mack Ling (1976), within the framework of the shareholders and the management behaviors, have shown that the role of management with being an agency on behalf of the shareholders in order to manage the financial resources available to the firm and negotiate with all interested groups on their behalf’, while reaching a positive output more than the cost is an opportunity, at which these resources can be used and they will be the wealth of the major shareholders.[3] They state that such a case will be obtained in the most acceptable figure, when it leads to the compatibility of the interests between shareholders and management, so as a result, the conflict of interests will disappear. But when the capital of the firm is divided among more shareholders and there is a need for managerial expertise, which is out of the shareholders’ responsibility, this concern for the interests of the shareholders will arise that the management interests are not aligned with their interests [2].

Agency theory studies the economy and the behavior role of the ownership and management based on four rules. The first one is economic analysis within the firm, the second one is the behavioral analysis of the shareholders, who make up this firm, the third one is accounting analysis because of the costs of agency as an inevitable result of the conflict between the shareholders and management and the fourth is the analysis of the legal rules, which exists to solve the problems among the shareholders[4]. Also the studies confirmed that the
problem of the agency is related to the amount of conflict between the rights in the management as well as the cash flow and the effort to expand the rights of shareholders [4].

The difference between the rights of shareholders and management control with regard to cash flows may lead to management diversion of its functional behavior from the perspective of maximizing the wealth through making decision to increase performance to its interest and damaging the benefited shareholders, especially in the case of the claims submitted by the remaining net cash flow from the results of the performance. the occurrence of conflict of interests turns and leads to an organizational problem, which can emerge in the framework of the use of management expediency methods through utilizing the incentive and rewarding system or by creating the management goodwill through using freedom in the existing authority among the alternative accounting policies in the framework of smart accounting and the performance disclosure that ensures the job stability and getting to the direct and indirect interests[2].

Jensen 2008, ZAO-Go, et al., 2007), there are many empirical evidences based on this case that the financial decisions, investment decisions and economical performances, as well as the value of the companies are affected by the conflict of the agency and the rate of the agency costs.[5]. And considering that the operational leverage is a criteria of the firm's operational risk, the capital markets are in the wake of more reliable information about the knowledge sources in a firm, such as risk factors, strategic direction, management qualities, innovative skills, experience and integrity and these information determine parameters, which will be working in that firm while facing with asymmetric information, organization problems, profit of the investors and transparency of information. Therefore, the study of the relationship between the agency costs and operational leverage can lead to understanding the firm's operating risk and it can be effective in the economic decisions of the managers and investors[6].

The theoretical foundations and the research history:

Within the framework of the Agency theory, the reasons for the agency cost for the ownership can be known to one or more of the following management behaviors:

1- Controlling rights and emergence of the management structure: from the time of this study by economists Burley and Means (1932), it implies that whatever has been mentioned, has been cited by Adam Smith more than three centuries ago in his book entitled "Wealth of Nations" in which he expressed ownership potential problems and large companies, when he mentioned the subject of separation between ownership and supervision in the joint stock companies. We can't expect the managers to take care of the people's money. The ownership right has been considered as one of the most important sources of the organization costs.

Considering the separation between ownership and management, shareholders will be capable to recognize the positing and understand that all the actions done and decisions made by managers are difficult[2]. Several studies (for example, Fama and Jensen, 1983, Fleming et al., 2005; Dan and Xiao Yu, 2010; choang et al., 2010) stated that an increased level of separation of ownership and management control rights, leads to inevitable increased costs of the organization. they indicate that, there is a strong link between management control rights in the cash flow and management problems, and they acknowledge that in the case of increasing the rights of management control (provided by management ownership) in cash flow, it leads to creation of motivation in management of the firm to work hard in order to maximize their personal wealth. As long as the management wealth is linked to the other shareholders in the firm, there will be no conflict of interests, neither agency problems nor agency costs [7].

However, in other studies(such as: Wang, 2010; June et al. 2008), there is another comment with this concept that in the event of an increase in the firm's management ownership in the center of the firm, the managers are protected versus punishment. In conclusion, they have described it a new kind of management potential conflict, which the firm's cash flow control has created[8,9,4], in their management ownership expressed that management ownership is a double-edged sword. One of its edges is with common interests between the managers and owners and the other edge is using the firm's resources toward their personal interests, and ultimately impressing the shareholders' wealth.

2- Lack of information asymmetry, lack of information compatibility, is another source of agency's conflicts and problems. Providing information and reports by the managers is considered to be a very important case, that the users of the information expect the reports to indicate a favorable status and progress in the firm) [10].

Jensen and Mack Ling (1976) have listed the agency costs as follows:

1- The costs of the manager’s supervision (control) by the owner: these costs include the efforts that are done from the owners’ side, in order to control the behavior of the agency and through restrictions over the budget, remuneration schemes, using the independent auditor, authority schemes to buy stocks, the cost of firing managers and .......... .

2- Obligation costs: costs related to the organizational structure in such a way that the management undesirable behavior will be restricted.
3- Remaining loss: The remaining loss is the remainder of the difference between the manager’s actual operation and his expected operation, which is related to following his personal interests[2].

Noravesh et al. studied the relationship between mechanism of the system of corporate governance and the agency costs of the companies accepted in Tehran Stock Exchange. The results indicated that between non-mandated the Board of Directors and the ownership percentage of institutional investors with agency costs, there is a negative and meaningful relationship, however, their results did not match with the assumption of existence of the relationship between the firm’s debt ratio and the agency costs[11].

Karami et al studied the agency theory and the signaling theory in the policies of dividing profit and the institutional investors’ role, the research results indicated that there is a negative relationship between the level of institutional investors and dividend payable by the firm and confirms the signaling theory. This would indicate that the presence of institutional shareholders cause reduced use of dividend as a signal for the firm's good performance and also there is a positive, meaningful relationship between institutional focus and payable dividends profit by the firm, which is in accordance with the agency theory[12].

Khodadad, et al studied the impact of agency costs resulting from free cash flow hypothesis on the independent auditing fees. Also results arising it showed a meaningful existence between agency costs arising from the free cash flow of the firm and auditor’s fee, also the evidences showed that the companies, which have a lot of cash flow, between the debt level and the auditor’s fee there is a positive, meaningful relationship and between future growth opportunities and the auditor’s fee there is a negative meaningful relationship, moreover, the relationship between payable cash dividend and auditing fee in the companies, which have a lot of free cash flows was not approved [13].

Setayesh et al studied the factors affecting the capital structure from the perspective of agency theory and the results indicates that the corporate governance mechanisms (the ownership focus, the percentage of non-mandated members of Board of Directors and the Board of Directors independence do not have a meaningful impact on the book leverage and market leverage of the companies under study, but there is a positive meaningful relationship between the agency costs with book leverage and the market leverage.

Talebniya et al studied the impact of the agency problems, free cash flow, the relationship between the profit per share (dividend) and the book value per share price, versus the lack of ownership phenomenon. The results of this research suggested that the profit per share have a positive and meaningful relationship with the book value per share price and the agency’s problems of the free cash flow leads to a reduction of the relationship between the profit per share price and the book value per share price [14].

Karana Uchida studied the relationship between the agency cost and debt ratio with the firm performance and management ownership of management in Japan Tobin Q. The results of the research indicate that the level of the managers’ ownership has positive impact on index. Also the results indicate that the positive impact of management ownership acts advance leverage over the performance of the firm[15].

Jelling and Steverk studied the non-linear relationship between managerial ownership and agency costs. The results indicated that between return on assets and assets turnover ratio with management ownership, there is a non-linear and positive meaningful relationship and between operation expenses ratios to sales and management ownership, a non-linear and negative meaningful relationship was found[10].

Sajid Gol et al studied the relationship between the ownership structure andcorporate governance of the firm with agency costs in 50 companies in Pakistan, Karachi Stock market. The results indicate that the senior manager and institutional ownership reduces the agency costs level. Also the small size of the Board of directors reduces the agency costs[15].

Asma Khan et al studied on how Pakistan manufacturing sector reduced the agency costs of free cash flow by using financial leverage in 54 manufacturing companies for the period of 2006 to 2010. To measure the agency cost, the free cash flow criteria has been used. The firm leverage is measured by using two ratios including the debt ratio to equity and long-term debts (liabilities). The results of the study indicate that the financial leverage plays an important role in reducing the costs of the firm through reducing the free cash flow, which is under the control of the management. This result is consistent with the theory of free cash flow[16].

Research hypothesis:
First hypothesis: There is a relationship between assets turnover ratio and operational leverage.
Second hypothesis: there is a relationship between costs ratio to income and operational leverage.
Third hypothesis: there is a relationship between the agency costs and operational leverage.

MATERIALS AND METHODS

This research was a type of correlation research, due to the nature of the subject, which is a subset of descriptive research (non-testable). This research explores the relationship between the ratio of total assets turnover, the ratio of costs to income and agency costs as an independent variable and operational leverage as a dependent variable.
Statistical population, sampling method and sample size:
Considering the nature of the research among the companies accepted in Tehran Stock Exchange, considering the following conditions, a number of 32 companies have been selected for 4 years (128 firm years).
1) Accepted in Stock Exchange before the year 2008.
2. Their fiscal period leading to the end of March.
3) Do not have any fiscal year change or operational discontinuation during 2008 to 2012.
4) Financial statements and explanatory notes along with the firm during the period afore-mentioned should be fully available in the Stock Exchange website.

Research variables:
Independent variable: 1- Assets turnover ratio 2- Operation expenses ratio to sales 3- Agency costs
Dependent variable: 1- Operational leverage

Independent variable:
Similar to Aung et al and Wang et al. in this research also the efficiency ratios, i.e. 1- Ratio for measuring assets turnover costs, (total sales to total assets of the firm), 2- The operation expenses ratio to sales of the agency have been used [17].
3. Agency costs: It is obtained from the interaction between assets turnover ratio and operation expenses to sale.

Dependent variable: the operational leverage is a criterion of operational risk and it is resulted from the operational fixed costs, and it represents the operational profit impressibility of the firm affecting by the change in the volume of sale, which is obtained from the following ratio [18].

Operational leverage rate = \frac{Percent\ of\ changes\ in\ sales}{Percent\ of\ changes\ in\ profit}
The statistical model below has been used to test the hypothesis:
Dos = B_0 + B_1 \text{assets turnover ratio} + B_2 \text{Ratio of operation expenses to sales} + B_3 \text{Agency cost} + \epsilon
Dos: Operational leverage

Data analysis method:
For the analysis of hypothesis and accepting or rejecting them, we must first determine whether there is a linear relationship between the independent variables and the dependent variables or not? Since the objective of this research is to specify the relationship between the operational leverage and assets turnover ratio, the ratio of operational expenses to sales and agency costs, first we write the proper linear model, and by using the method of Panel Least Squares for panel data, the regression coefficient is estimated and tested. To test the assumptions here, test T and F has been used. After collecting the companies’ information, first the descriptive statistics and supporting information, with the help of Excel and SPSS software have been obtained and finally data analysis has been carried out by Eviews software.

Results:
Descriptive statistics of the variables discussed is in figure 1-5 and table 1-4

![Fig. 1: Point distribution chart of total firm assets separated by years](image)
Fig. 2: Point distribution chart of the cost ratio to income separated by years

Fig. 3: Point distribution chart of the agency cost of the companies separated by years

Fig. 4: Point distribution chart of operational leverage of the companies separated by years
Table 1: Research descriptive statics

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Standard deviation</th>
<th>Average</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation expenses to sales</td>
<td>0.000</td>
<td>0.294946</td>
<td>0.10627</td>
<td>3.102817</td>
</tr>
<tr>
<td>Assets turn over</td>
<td>0.518039</td>
<td>0.6429321</td>
<td>1.34702</td>
<td>8.237913</td>
</tr>
<tr>
<td>Agency costs</td>
<td>0.000</td>
<td>0.424027</td>
<td>0.15661</td>
<td>1.140507</td>
</tr>
<tr>
<td>Operational leverage</td>
<td>-1.140507</td>
<td>0.733249</td>
<td>0.24267</td>
<td>5.294657</td>
</tr>
</tbody>
</table>

Results of testing the hypothesis:

First hypothesis: There is a relationship between the ratio of total assets turnover and operational leverage.

Independent variable: assets turnover ratio
Dependent variable: Operational leverage

Statistical method: Panel Least Squares:

Table 2: Results obtained from the first hypothesis test

<table>
<thead>
<tr>
<th></th>
<th>Standard deviation</th>
<th>t statistics</th>
<th>Coefficients</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>C(1)</td>
<td>0.1387</td>
<td>2.35</td>
<td>0.3275</td>
<td>0.0196</td>
</tr>
<tr>
<td>C(2) Assets turnover ratio</td>
<td>0.092</td>
<td>-0.64</td>
<td>-0.060</td>
<td>0.516</td>
</tr>
<tr>
<td>Determination coefficient</td>
<td>Modified determination coefficient</td>
<td>0.0028</td>
<td>0.0038</td>
<td></td>
</tr>
<tr>
<td>F statistics</td>
<td>-P value</td>
<td>0.42</td>
<td>0.5168</td>
<td></td>
</tr>
<tr>
<td>Durbin Watson Statistics</td>
<td>1.24</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As it can be seen in the above table, considering F and P statistics and the amount corresponding to it (the value - p>0.05), the above model is not statistically meaningful, so it results in the lack of meaningful relationship between the ratio of total assets turnover and operational leverage. Also –P, the amount for C (2) coefficient is equal to 0.516, which shows the relationship coefficient between two variables do not have a meaningful difference with zero.

It can also be considered that the expressed contribution ratio to the total distribution (determination coefficient) is too small. To be more precise, just 0.002 dependent variable changes can be explained by the total assets turnover ratio. Therefore, the above result is not far from the expected.

Durbin Watson statistics also represents the rate of the autocorrelation between model errors, which shows errors have almost very little correlation. (If Durbin Watson statistics is between 1.5 and 2.5, the assumption of non-autocorrelation is not rejected).

Second hypothesis: there is a relationship between ratio of costs to income and operational leverage.

Independent variable: the ratio of operation expenses to sales
Dependent variable: Operational leverage

Statistical methods: Panel Least Squares:

Table 3: Results table obtained from second hypothesis test

<table>
<thead>
<tr>
<th></th>
<th>Statistics t</th>
<th>Standard deviation</th>
<th>Coefficients</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>C(1)</td>
<td>4.18</td>
<td>0.064</td>
<td>0.27</td>
<td>0.000</td>
</tr>
<tr>
<td>C(2) Ratio of operational expenses to sales</td>
<td>0.82</td>
<td>0.204</td>
<td>-0.16</td>
<td>0.411</td>
</tr>
</tbody>
</table>

Modified determination coefficient | 0.004 |
As it can be seen in the above table, considering \(-P\) and \(-F\) statistics, the amount associated with it (amount \(-p<0.05\)), the above model is not statistically meaningful. Therefore, it results lack of meaningful relationship between the ratio of costs to income and operational leverage. Also \(-P\) is the amount for coefficient \(C (2)\) is equal to 0.4115, which shows that the relationship coefficient between two variables do not have a meaningful difference with zero.

It can also be considered that the expressed distribution ratio to the total distribution (determination coefficient) is too small. To be more precise, just 0.002 dependent variable changes can be explained by the total assets turnover ratio. Therefore, the above result is not far from the expected.

Durbin Watson statistics also represents the rate of the auto-correlation between the errors of the model, which shows errors have almost very little correlation. (If Durbin Watson statistics is between 1.5 and 2.5, the assumption of non-autocorrelation is not rejected).

**Third hypothesis**: there is a relationship between Agency costs and operational leverage.

Independent variable: Agency costs
Dependent variable: Operational leverage
Statistics method: Panel Least Squares

<table>
<thead>
<tr>
<th>Table 4: of the results obtained from the third hypothesis test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard deviation</strong></td>
</tr>
<tr>
<td>------------------------</td>
</tr>
<tr>
<td>(C(1))</td>
</tr>
<tr>
<td>(C(2))</td>
</tr>
<tr>
<td>Agency costs</td>
</tr>
<tr>
<td>Determination coefficient</td>
</tr>
<tr>
<td>(-F) statics</td>
</tr>
<tr>
<td>Durbin Watson Statistics</td>
</tr>
</tbody>
</table>

As it can be seen in the above table, considering \(-P\) and \(-F\) statistics, the amount associated with it (amount \(-p<0.05\)), the above model is not statistically meaningful. Therefore, it results lack of meaningful relationship between the ratio of agency costs and operational leverage. Also \(-P\) is the amount for coefficient \(C (2)\) is equal to 0.2699, which shows that the relationship coefficient between two variables does not have a meaningful difference with zero.

It can also be considered that the expressed distribution ratio to the total distribution (determination coefficient) is too small. To be more precise, just 0.008 dependent variable changes can be explained by the agency costs. Therefore, the above result is not far from the expected.

Durbin Watson statistics also represents the rate of the auto-correlation between errors in the model, which shows errors have almost very little correlation. (If Durbin Watson statistics is between 1.5 and 2.5, the assumption of non-autocorrelation is not rejected).

**Conclusion:**

Through the formation of agency cost relationship, agency cost because of both parties’ conflict of interests is created between both parties. Agency costs are a kind of internal costs, which should be paid to an agency (Agent) on behalf of management. Agency costs arise from the issues such as conflict of interests between the shareholders and managers. Shareholders request the managers to run the firm in such a way that increases the value of the shares. But it is possible that management wishes to increase personal power and wealth, which may be the best interest for the shareholders. Minimizing the cost of supervising agency has become a factor to create incentive (economic) for managers. So that they report the accounting results to the owners in a way, which is reliable. That motivation arises from the fact that at least the managers are judged partly based on the ways that they report and they are rewarded.
Providing good report enhances the reputation of a manager and good reputation leads to higher salaries and bonuses, because if the owners think in such a way, the audit reports will be reliable and the supervising costs will reach the least. The purpose of this research is to study the relationship between operational leverage and agency costs in Tehran Stock Exchange. The results obtained from the first hypothesis indicate that there is no meaningful relationship between the ratio of the assets turnover and operational leverage. The results obtained from analysis of the second hypothesis also showed that there is no meaningful relationship between the ratios of operational expenses to the sale with the operational leverage and ultimately, the results obtained from the third hypothesis indicated that there is no meaningful relationship between the agency costs and the operational leverage.

REFERENCES