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BANKRUPTCY AND PRODUCT MARKET COMPETITION: EVIDENCE FROM TEHRAN STOCK EXCHANGE

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Abstract:-In the past few years, thousands of companies have gone bankrupt and out of competition due to intense market competition and inefficient management. To assess bankruptcy cost most researchers have used direct expenses such as administrative expenses and indirect type like nonoperational expenses. Franks and Torous 1989, Thorburn 2000, Bebchuk 2002, Bris et al. 2006, Whited 2007). In economy arguments are based on that competition is an excellent mechanism for resource allocation in the market and has a disciplinary effect on managers' behavior and their insufficiency (Markarian and Santaló 2010). So Gyrvd and Mueller (2008 and 2009) discussed the issue of how corporate governance mechanisms will rush to their aid when markets are in danger of liquidation.

Keywords: Bankruptcy and Product Market, inefficient management, mechanisms.

INTRODUCTION

Moreover, in the absence of mechanisms of corporate governance, the sole competition force managers to try to maximize shareholder's wealth and thus avoid the risk of bankruptcy (Markarian and Santaló 2010). Odom and Sharda believe that the main reason for bankruptcy is mismanagement and inefficiency. When companies are working in a competitive market, they are more vulnerable to bankruptcy. In this case, managers need to enhance their efficiency to save the company from bankruptcy risk, because shareholders and stakeholders don't accept managers' mistakes and their inefficiency due to competition and the probability of bankruptcy. Company executives hide the bankruptcy and refuse to announce it officially till the last moment, when attempting to get rid of bankruptcy is futile. Based on what was said to prevent bankruptcy and wastage of resources, shareholders and beneficiaries become more cautious to managers' performances, because increasing the competitiveness of enterprises limited the resources and increases the probability of bankruptcy. (NabaviChahmi et al. 2011). Increasing established firms in the 1950s and complexity of the economic and trade relations, financial responsibilities have changed dramatically. Emphasis of governments on economic growth and development of the company and institution leads to complicate these responsibilities. On the other hand, improved technology and broader environmental changes caused increasing velocity of economy. Because of competition enhancement the profit is limited which leads to raising the risk of bankruptcy. Therefore, as the financial decisions become more strategic, managers have been forced to utilize the more advanced method of analysis and forecasting bankruptcy, having a long-term vision on this issue, and use an extended and more precise control method. (Kamjani and Saadatfar 2006).

2. PROBLEM STATEMENT

A lot of researches have been done on bankruptcy, like Bankruptcy impact on the survival of the company (Hotchkiss 1995). Return on equity (Jorion and Zhang 2009). Innovation (Acharya & Subramanian 2009). But in Iran, it is the first time that a study about the impact of competition in product market on bankruptcy is done. The main problem is that bankrupt firms experiencing financial distress in a competitive market may take hasty actions putting them in a deeper turmoil. The mentioned actions could include changes in strategic decisions, such as price, production capacity and find solutions to provide the needed cash to avoid bankruptcy. But sometimes hasty actions backfire and lead to deeper financial distress and make the bankruptcy

process faster.

3. OBJECTIVE OF STUDY

The objective of this study is:

Whether or not competition causes bankruptcy?

Whether competition effect on bankruptcy can be an appropriate guidance for listed firms in Tehran Stock Exchange?

4. CONCEPTUAL FRAMEWORK

Finance literature has a long history for the analysis of firms' bankruptcy, which includes the development of bankruptcy prediction models, bankruptcy cost assessment and analysis of the relationship between bankruptcy and macroeconomic conditions. Therefore, in nowadays competitive environment the risk of bankruptcy is rapidly increasing, that could be a turning point for firms in this circumstances to progress, or a factor leading to failure or bankruptcy. Hence, firms must attempt to work hard in this competitive market creating innovations. These actions provide opportunities for firms to show their ability to show their power in this environment. This is possible only if companies update their technology and take advantages of it. However, in this field they face operational risk affecting their performance. In this regard, if firms act poorly compare to their competitors, will go bankrupt, eliminating from the competition.

One of these innovations is the patent system. Patent system causes a direct relationship between technology and bankruptcy in competitive environment. As exclusive agency companies are able to complain their competitors in case of infringement. Rules prevent accused firms from taking any action regarding patent. This can be a disaster for the firms pushing them in a dire financial situation, and accelerates the bankruptcy process of competing firms. (Lanjouw & Lerner 2001). Moreover, the other implicit and explicit costs associated with patent litigation could seriously worsen the defendant's financial deterioration and irreparable blows to his entering. (Lerner 2005, Hall 2004). As Ciliberto and Schenone in 2012 stated, bankruptcy announcement reduces the production capacity and price of the product. They believe that while announcing bankruptcy the fixed costs are more effective than variable costs. In 2011 Eisdorfer and Hsu stated that patent is able to predict bankruptcy, because in technological firms patents accelerate bankruptcy process, therefore patent is positively associated with bankruptcy. It means as more technological a firm is, it is more vulnerable to bankruptcy. In this competitive world, technology has been recognized as a decisive factor in the dynamism of the industry. For example, Griliche and Pakes in 1984 and Pakes in 1985 revealed that Research and development and patent costs are having a significant impact on stock prices. Cuneo & Mairesse in 1984 and showed there is a strong relationship between productivity and investment in research and development cost of competing firms. Dierickx & Cool in 1989 claimed that R&D costs are prominent factor in competitive industries leading to a stronger stability of assets of that industry. In other words, the cost of research and development causes the survival of the firm in the competitive environment. In this case, invention is considered as a competitive advantage. Greenwood & Jovanovic (1999) and Hobijn & Jvanvyk (2001) stated that new technology led to the destruction and deformation of old firms. Garleanu et al. (2009) argued that innovation intensifies market competition and reduces profits in the short term but in the long term is an important factor in the survival and growth of the company.

5. LITERATURE REVIEW

5.1 Studies conducted in the field of bankruptcy

In 1968 Altman used multivariate bankruptcy prediction models. By applying the method of multiple discriminant analysis and using financial ratios as independent variables he was looking for predicting bankruptcy firms. He proposed the bankruptcy prediction model, known commercially as its Z-ranking model.

Springate in 1978 continued Altman studies and found a model with 92.5% correct bankruptcy prediction results.

Springate & Norton in 1979 used the multiple linear analysis model using stepwise method to predict bankruptcy. Their used ratios are cash flow to sales, cash flow to total assets, cash flow to value of total liabilities. Their results showed that operating cash flow to total assets and operating cash flow to total debt are the best indicators of predicting the bankruptcy three years before bankruptcy.

Ohlson in 1980 has used the method of logistic analysis to create his model. To test his model he used a sample of 105 bankrupt firms and 205 normal firms. He used 9 independent variables. His model achieved 85.1 correct prediction.

Zmijewski in 1984 to introduce his model has used financial, liquidity, performance and leverage ratios. Selection and applying these ratios was not theatrical, it was based on his experience. He used the ratios of net profit to total assets, total debt to total debt and current asset to current liability. This model is one of the simplest models of bankruptcy prediction in which the principle of less number of dependent variables has been satisfied.

In 1984 Blum used the discriminant analysis to assess and investigate about the model. He found that the model detect firms going to bankruptcy from stronger companies with an accuracy of approximately 94% in the first year before failure, 80 percent the second year and 70 percent during the third, fourth and fifth year before bankruptcy.

Blum in 1984 used discriminant analysis and found that this model is able to predict firms before going to bankruptcy

94% one year before bankruptcy, 80% two years before and 70% three, four and five years before bankruptcy.

In 1990 Odom and Sharda used bankruptcy prediction models. Their results show that neural network methods are more reliable and accurate than multivariate linear detection method. In this regard, Tom and Kiang in 1992 compared the neural networks method with linear detection analysis prediction, logistic regression, decision tree and the nearest neighbor analysis and got the same results as the Odom and Sharda. In 1998 Shirata after reviewing other studies found that due to limited number of samples, it is not possible to generalize the results to manufacturing firms with identical assets. He rendered a comprehensive model to predict bankruptcy for all types of firms (manufacturing, trade and services).

His model uses multiple discriminant analysis which is able to predict bankruptcy with 86.14% accuracy.

Wallace in 2004 applied the neural network approach using key financial ratios used in previous bankruptcy studies as the best ratios. His model's accuracy level was 94% which studied 65 different ratios.

In a study by Adnan Aziz and Dar in 2006 titled as bankruptcy prediction, the models of bankruptcy have been investigated one year before bankruptcy. Their results showed that in 60% of studies financial ratios have been used as descriptive variables, 7% of cashflow and 33% of a combination of financial ratios and other variables.

In 2007 Pindado et al. used econometrics, panel data and cross sectional analysis in their study and found that variables like profitability, financial expenses and retained earnings are same in significance. Their model rate of accuracy was 87% for different years.

In a study by Fich and Slezak (2008) "Whether corporate governance can save helpless companies from bankruptcy?" they investigated the relationship between corporate governance and bankruptcy. Their findings suggest that the characteristics of the board of directors as corporate governance variables in bankruptcy prediction are effective.

Permachandra et al. in 2009 used envelopment analysis for bankruptcy prediction. They used seven financial ratios as input variables and two financial ratios as output variables. Accuracy rate for in-sample firms was 89% and for out-sample firms was 86%.

In a study by Darrat et al. in 2011 titled "the effect of board composition on risk", they investigated the relationship between bankruptcy and institutions. Their results indicate that board composition is able to reduce the risk of bankruptcy.

Alexeev and Kim in 2012 examined the relationship between bankruptcy and financial institution. They concluded that the retained earnings and ownership concentration are the decisive factors in the bankruptcy and insolvency has an inverse relationship to the quality of institutions.

In a study by Zhou in 2013 entitled as "Performance of corporate bankruptcy prediction models on imbalanced dataset: The effect of sampling methods", he investigated the models of bankruptcy. He concluded that the use of sampling in the development of bankruptcy prediction models depend on the number of insolvent companies.

In 2002 Rasoulzadeh used the data extracted from the financial statements of textile and basic metal industries in Tehran Stock Exchange (TSE). The bankruptcy group includes 16 firms which had been correctly predicted by Altman model with the accuracy of 81%. 25 Non-bankrupt firms also had been predicted by Altman model with 92% accuracy level.

Falahpour and Raei in 2005 in a study showed that in bankruptcy prediction neural network model is significantly more accurate than multiple discriminant analysis.

In 2006 Monsefi applied bankruptcy Shirataand Zmijewski model for textile and pharmaceutical industries of TSE. His results indicated the accuracy of 94.7% for Shirata model and 97.4% for Zmijewski.

A study by Dehkordi in 2008 showed that Genetic programming model of bankruptcy is able to predict 90% of bankruptcy cases though multiple discriminant analysis is able to predict 73%.

Chashmi et al. in 2011 used Logitmodel to predict bankruptcy. The level of accuracy for the bankruptcy year was 87.5%.

In 2012 Firouzyan et al. in a study entitled "Application of Genetic Algorithm in bankruptcy prediction model and compare it with the Altman Z-Score model for listed companies in Tehran Stock Exchange. "" tried to predict bankrupt firms. The results of the study were in bankruptcy prediction model, genetic algorithm model was more conservative than Altman Z-Score model.

Another study by Khajavi et al. in 2013 entitled as "The effect of board characteristics on Altman's bankruptcy prediction models and Ahlsen in Tehran Stock Exchange" says that there is no significant relationship between board characteristics and Altman and Ahlsen model.

5.2 Studied taken on the field of competition in market

Shleifer in 2004 examined the relationship of competition and earning management. The results showed that the competitive pressures of the market, increases the possibility of manipulating the company's profit.

Another study by Pant and Pattanayak in 2008 with the title of "Corporate Governance and Competition: The Case of India" investigated the effect of competition on corporate governance. They examined the independent and mutual effects of ownership and competition on productivity level. They used econometrics in their study and concluded that independent effect of ownership variables on productivity is negligible but the effect of ownership on competition is positive and significant.

Tinaikar and Xue in 2009 in a study entitled "Competition in the product market and earnings management" examined the relationship of competition and earning management. Their results show that completion decreases the profitability. So earning management is a factor to distort economic performance by directors.

Marciukaityte and Park in 2010 examined the relationship between competition and earning management and found that companies that manage their earnings, have the worst performance in a long-term stock market competition.

In a study by Giroud and Mueller in 2011 as Corporate governance, product market competition and the stock pricing, they attempted to examine the causes of inefficiency. They concluded that poor governance of firms is due to weak productivity of labor force and high entry costs.

Karuna et al. in 2012 in their study using competitive factors, such as product placement, market size and the cost of entering the industry examined the relationship between product market competition and earning management. Their results showed that industry factors have a more effecting role on earning managements. In other words their results indicate a significant and positive relationship between competition and earning management.

Byun et al. in 2012 in their study examined the interaction between product market competition and corporate governance and its impact on payment policy (a dividend policy and redemption of shares) of companies. They found that competition as an external control mechanism is a determining factor in relation to firm's payment policy.

In a study by Wen He in 2012 as "Agency Problems, Product Market Competition and Dividend Policies in Japan" he showed that competition in the market as one of the mechanisms of governance, reduce agency conflicts and force the company to pay a dividend.

Ammann et al. in 2013 in a study as "Product market competition, corporate governance and firm value: Evidence from the EU-area" indicated that corporate governance can significantly increase the firm value of non-competitive companies.

In 2013 Ma et al. conducted a Research on the relationship between product market competition and cash holding. They found that cash holding and R&D rate increases with the advantage of winning and decreases with the cost of employment. Also, it results in a better understanding of the company's cash policy, taking into account the strategic role of cash on product market competition.

6. HYPOTHESIS OF STUDY

This research seeks to answer the following questions:

Is there a significant relationship between the competitiveness of the product market and the bankruptcy of the listed firms in Tehran Stock Exchange? In order to answer the research question and the theoretical background of the study, the following hypotheses have been designed:

The main hypothesis: There is a significant relationship between the competition structure of the product market and corporate bankruptcy.

Alternative Hypotheses:

1. There is a significant relationship between Herfindahl-Hirschman Index and firms' bankruptcy risk.
2. There is a significant relationship between Lerner index and firms' bankruptcy risk.
3. There is a significant relationship between adjusted Lerner index and firms' bankruptcy risk.

7. METHODOLOGY

This study is a quantitative type and uses the scientific and empirical proof, and is conducted based on predefined hypotheses and research projects. This category is used when the research data measurement is quantitative and statistical techniques are used to extract results (Namazi 2004). The method of data collection was library method. Data collection sources include books, journals, and databases. Data has been analyzed by Excel and SPSS.

8. SAMPLING

The sampling of the study is judgmental (based on the conditions mentioned in limitation of the study) and includes 67 firms from Tehran Stock Exchange. Data has been collected from their financial statements during 8 years from 2004 to 2012.

9. SCOPE AND LIMITATION

The period of the study is 8 years from 2004 to 2012, and the data collected in this period is based on financial statements of listed firms in TSE. Due to some inconsistency between community members, sampling has taken place under below conditions:

- 1) The end of fiscal year is March 19th.
- 2) During the period of study any firm has not changed the fiscal year date.

- 3) Data is available during this period.
 4) Every firm of sample should be listed in TSE till the end of 2002.
 5) Sample of study does not include any firm from banks or financial institution.
 According to abovementioned limitation 67 firms have been selected.

10. TESTING OF HYPOTHESIS

This part describes testing of hypothesis of the study. Below regression function has been used for testing of hypothesis:

$$BR_{it} = \alpha_0 + \alpha_1(PMC_{it}) + X_{it} + \epsilon_{it} \quad (1)$$

BR_{it} = The bankruptcy criterion of firm i in year t .

PMC_{it} = Competition criterion in the product market of firm i in year t .

X_{it} = Vector of control variables including firm size (natural log of sales), industry and the life of the firm.

11. OPERATIONAL DEFINITION

11-1. Independent Variables

With regards to the objective and testing of hypothesis, competition in product market has been considered as the independent variable of the study. In this study three indices includes Herfindahl-Hirschman Index, Lerner index and adjusted Lerner index, are used as criteria for measuring product market competition. The calculation of each index is described below:

11-1-1. Herfindahl-Hirschman Index

Herfindahl-Hirschman Index is obtained of the sum of squared market shares of all corporations in the industry:

$$HHI = \sum_{i=1}^k S_i^2 \quad (1)$$

HHI = Herfindahl-Hirschman Index

K = The number of corporations in the market

S_i = Market share of firm i

S_i is computed by:

$$S_i = X_j / \sum_{j=1}^n X_j \quad (2)$$

X_j = Sale of firm i .

L = Type of industry.

Herfindahl-Hirschman Index measures the industry concentration. The larger the index is, the concentration is higher and there is less competition in the industry and vice versa.

11-1-2. Lerner Index

Lerner index equals to price minus the marginal cost of production. This index directly shows the characteristics of market power, the ability of firm to incorporate a price greater than marginal cost. The challenge of this index is that the marginal cost is not visible. So researcher estimate this index by marginal price-cost (21. Booth, L., & J. Zhou 2009). Following Gasper and Massa (2006), Kale and Loon (2011) and Zhou and Booth (2009), Lerner index is computed as operating profit divided by sale. This index is computed by following equation:

$$LI = (Sale - Cogs - SG \& A) / Sale \quad (3)$$

LI = Lerner Index

Cogs = Cost of Goods sold.

SG&A = Selling, General & Administrative Expense.

11-1-3. Adjusted Lerner Index

Although Lerner index is used to determine the market power of the company's product but this measure doesn't

separate company-specific factors such as the impact of product market pricing power from industry level factors. Hence in this study like the study of Sharma (2010), Pires (2010), Gasper and Masa (2006) and Namazi and Ebrahimi (2012) the adjusted version of Lerner index has been used.

The adjusted Lerner index is computed as below:

$$LI_{IA} = LI_i - \sum_{i=1}^N \omega_i LI_i \quad (4)$$

LI_{IA} = Adjusted Lerner index.

LI_i = Lerner index of I firm.

ω_i = Firm i sale / total industry sale.

11-2. Dependent Variables

Prediction models of Altman, Zimski, Shirata are based on tertiary indicators and determine the probability of bankruptcy by financial statement analysis and comparing firms. These models are divided into two categories, univariate and multivariate. In financial reporting applied research only one financial ratio is used in case of univariate model to predict bankruptcy, but in case of multivariate two or more financial ratios are used. Since these models predict that the company will go bankrupt in the future if certain conditions were established, so when those conditions appear directors come to know that the firm is going to bankruptcy.

In this study Altman Z-Score has been applied. It is computed as below:

$$Z' = 0.717x_1 + 0.847x_2 + 3.107x_3 + 0.420x_4 + 0.998x_5$$

Z' = Differentiating index (differentiating bankrupt firms from non-bankrupt)

X_1 = Working capital to total assets ratio.

X_2 = Ratio of retained earnings to total assets.

X_3 = Earnings before interest and taxes to total assets ratio.

X_4 = Ratio of book value of firm stock to book value of total debt.

X_5 = Ratio of sale to total asset.

In this model as the Z' is less the degree of firm crisis is less. So that firms having Z' above 2.9 is non-bankrupt and less than 1.23 is bankrupt. The distance between these two limits is questionable and should be interpreted with caution (Altman 1986).

10-3. Control Variables

Industry: In bankruptcy prediction the type of industry in which the firm is running is effective. (Chava and Jarrow (2004), Fadaeenezhad and Skandari 2012, Firuzyan et al. 2012).

Life of firm: The bankruptcy rate of young firms is more than older firms (2006 Fadaeenezhad and Skandari 2012).

Firm size: There is a negative relationship between bankruptcy risk and firm size (2006 Fadaeenezhad and Skandari 2012).

12. FINDINGS

To achieve the objectives of the study the hypothesis of the study were tested and the results have been presented in tables 1 to 5.

12-1. Descriptive Statistics

In order to analyze the raw data, descriptive statistics for the variables used in the regression analysis are presented in Table 1. Table 1 presents average, maximum, minimum and standard deviation. As you can see the greatest amount of dispersion among variables is related to insolvency risk variable. Moreover average statistics indicate that the average life of bankrupt firms in TSE is almost 35 years.

Table 1. Descriptive statistics of variables

Variables	Statistics	Average	Standard Deviation	Maximum	Minimum
Herfindahl-Hirschman Index		0.2	0.23	1	0
Lerner Index		0.17	0.22	0.96	1.41
Adjusted Lerner Index		0.05	0.21	0.78	-1.23
Bankruptcy Risk		12.86	14.78	85.23	-0.2
Firm Size		24.62	1.22	27.32	20.94
Firm Life		35.91	6.61	54	4

12-2. Inferences Statistics

In this part after investigating data and normality testing, the hypothesis has been tested by multiple regression analysis.

First Alternative hypothesis: Table 2 summarizes the results of first alternative hypothesis. Given the amount of F statistics contained in Table 2, in which all companies with 107.187 indicates the significance of model at 95%. Also Durbin–Watson statistic given in table 2 at all companies level which equals to 1.666 don't show any disturbance for the existence of serial autocorrelation in the regression. As the R^2_{adj} is .0373, therefore 37.3% of dependent variable variability could be predicted by explanatory variable.

Table 2. Results of first alternative hypothesis

	Coefficients	Standard Error	t statistics	Level of sig.
Constant	-168.304	12.207	-13.788	0.0005
Herfindahl-Hirschman Index	7.682	2.274	3.378	0.001
Firm size	6.673	0.444	15.026	0.0005
Firm life	0.208	0.077	2.709	0.007
R^2	R^2_{adj}	Durbin–Watson statistic	F statistics	Level of Sig.
0.377	.0373	1.666	107.187	0.0005

In table 2 the coefficients of regression model of first sub-hypothesis and their level of significance has been provided. According to the table there is a positive and significant relationship between Herfindahl-Hirschman Index and bankruptcy risk. Results pertaining to explanatory variables show that there is a negative and significant relationship between life and size with bankruptcy risk.

Second alternative hypothesis: Table 3 summarizes the results of second alternative hypothesis. Given the amount of F statistics contained in Table 3, in which all companies with 106.210 indicates the significance of model at 95%. Also Durbin–Watson statistic given in table 3 at all companies level which equals to 1.624 don't show any disturbance for the existence of serial autocorrelation in the regression. As the R^2_{adj} is .0371, therefore 37.1% of dependent variable variability could be predicted by explanatory variable.

Table 3. Results of first alternative hypothesis

	Coefficients	Standard Error	t statistics	Level of sig.
Constant	-177.254	11.804	-15.017	0.0005
Lerner Index	-7.175	2.323	-3.090	0.002
Firm size	7.034	.0418	16.812	0.0005
Firm life	0.247	0.079	3.138	0.002
R^2	R^2_{adj}	Durbin–Watson statistic	F statistics	Level of Sig.
0.375	0.371	1.624	106.210	0.0005

In table 3 the coefficients of regression model of second sub-hypothesis and their level of significance has been

provided. According to the table there is a negative and significant relationship between Lerner Index and bankruptcy risk. Results pertaining to explanatory variables show that there is a positive and significant relationship between life and size with bankruptcy risk.

Third alternative hypothesis: Table 4 summarizes the results of third alternative hypothesis. Given the amount of F statistics contained in Table 4, in which all companies with 104.685 indicates the significance of model at 95%. Also Durbin–Watson statistic given in table 4 at all companies level which equals to 1.621 don't show any disturbance for the existence of serial autocorrelation in the regression. As the R^2_{adj} is .0.368, therefore 36.8% of dependent variable variability could be predicted by explanatory variable.

Table 4. Results of first alternative hypothesis

	Coefficients	Standard Error	t statistics	Level of sig.
Constant	-178.798	11.819	-15.128	0.0005
Adjusted Lerner Index	-6.327	2.466	-2.566	0.011
Firm size	7.084	0.419	16.925	0.0005
Firm life	0.238	0.079	3.022	0.003
R^2	R^2_{adj}	Durbin–Watson statistic	F statistics	Level of Sig.
0.371	0.368	1.621	104.658	0.0005

In table 4 the coefficients of regression model of third sub-hypothesis and their level of significance has been provided. According to the table there is a negative and significant relationship between djusted Lerner Index and bankruptcy risk. Results pertaining to explanatory variables show that there is a positive and significant relationship between life and size with bankruptcy risk.

13. CONCLUSION AND RECOMMENDATION

The research leads to identification of a new and important dimension in the bankruptcy literature by linking product market competition and level of corporate failures. Statistical analysis of data collected from 67 firms of TSE during 2004 to 2012 shows that generally with increasing competition in the overall market (Herfindahl-Hirschman index, Lerner and Adjusted Lerner) corporate bankruptcy rate increases.

In other words present study supports the idea of market competitive power industry being as one of the increasing factors of bankruptcy rates. Results show product market competition increases the bankruptcy which is in line with Ciliberto, F. & C. Schenon (2012). Overall, associated results with control variables indicate a positive and significant relationship between size and life of firm and bankruptcy risk of firm. In other words, the larger the company and more number of years the company be in competitive market, the risk of bankruptcy is less, so the firm will be more secure and more competitive in the market, surviving for a longer time and vice versa. Given that corporate managers seek to enhance their own interests and their interests depend on interests of the shareholders, therefore they try to raise their performance to satisfy their shareholders and get the most benefit. The results showed that the rate of failure in competitive industry is high, thus it is suggested to legislators and government agencies to implement strategies to increase managers' efficiency in Iranian local and international product market. Given the importance of issue it is recommended to other researchers to conduct similar studies using different indices to measure competition in product market (such as Q Tobin, N firm concentration ratio and the number of active firms in industry) to increase the validity of present study.

Finally, due to the unavailability of financial information relating to active companies in the industry but not yet listed in TSE, to generalize the results it is needed to observe caution.

FUTURE STUDIES RECOMMENDATIONS:

Considering background and literature following topics can be considered for future studies:

- Investigation of product market competition effect on cash dividend.
- Investigation of product market competition effect on executive remuneration plans.
- Investigation of product market competition effect on Audit fees.
- Investigation of product market competition effect on earning management.

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