Product Market Competition and Credit Risk

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ABSTRACT

The purpose of this research is to examine the correlation among Product market competition and credit risk of the listed companies in Tehran stock exchange. All listed companies in Tehran stock exchange were selected as statistical population of the research during 2008 to 2012 which finally 76 firms were picked up. In addition, number of active firms in an industry, size of firms in an industry, and credit risk were considered as independent and dependent variables of the study, respectively. Three control variables of financial leverage, age and return on assets are also applied. The findings suggested that there is a significant relation between number and size of active firms in an industry and credit risk of the listed companies in Tehran stock exchange.

KEY WORDS: Product market competition; Credit risk; Firm size.

INTRODUCTION

In economics, competition is done among vendors to achieve the goals such as growing interests, market share and sales volume through changing marketing elements: price, product, distribution and advertisement (Carona, 2007). Adam Smith in “wealth of nation” defined "competition" as allocation of productive resources to their most valuable applications (Nayama, 2006). Competitiveness is one of the most important concepts in the last two decades which has attracted the attention of many researchers, management investigators, economic and international business and there have been offered many definitions for it (Hey, 2011).

On the other hand, credit risk is one formed by default/failure of parties, or generally, by "incidental credit". Historically, this risk usually is true for bonds, as lenders were worried about refunds of given loans to a borrower. For this reason, this risk is occasionally called "default risk" (Pir Salehi, 1993). Credit risk arises from the fact that contracting party can't/won't act to obligations of the contract. The impact of this risk will be measured through cash replacement cost caused by default of contracting party. Losses from credit risk may occur before real default of a contracting party.

Generally, credit risk can be defined as possible loss caused by an incidental credit (Kazemi et al, 2008). This occurrence comes to realize when the ability of a contracting party changed during implementing his/her obligations. Credit risk is one of the most risk factors in banks and financial institutions. The risk arises from this perspective that borrowers are unable to refund payment of their debts to banks (Abzari et al, 2011). What we looking for in this research is investigation of the relation between competition on the product market and credit risk of the listed companies in Tehran stock exchange.

2- Research background:

Alimo (2012) investigated the relation between Product market competition, corporate governance and cash policy of firms. He found out that cash value positively depended on good corporate governance, but just for firms which are active in high-competitive environment. He also showed that high available cash may lead to decreased performance of firms which compete in high-competitive industries, even though good corporate governance decreased the negative impact of cash on performance.

Chow et al, (2013) examined the correlation among Product market competition and corporate governance and concluded that firms of competitive industries or of poor market power may have weak corporate governance structure. They had also suggested corporate governance quality significantly impact on
performance just when competition in product market is weak. Finally, they stated that competition is a control power on management formed by fear from dissolution.

Gani et al., (2013) in his research in China examined the relation among Product market competition and financing method of the listed companies in China stock exchange. Their results demonstrated that there is a non-linear (parabolic or cubic) relation between competition in a market and financing methods which depends on three factors of industry type, firm size and a firm's growth opportunities.

Michley et al., (2013) examined the relation among Product market competition and agency conflict. They showed that Product market competition would lower the agency cost. Firms which operate in low-competition industries have less efficiency than high-competitive firms. They also indicated that Product market competition is an alternative for corporate governance mechanisms and low-competition firms possibly apply vigorous corporate governance to aligning managements’ interests with other shareholders.

3- Research methodology:
3-1- Research hypotheses:
There is a significant relation between number of active firms in an industry and credit risk of the listed companies in Tehran stock exchange.

3-2- The research's statistical population:
The studied statistical population includes listed companies in Tehran stock exchange during 2008 to 2012. The selected firms should have three following conditions:
1- They should be listed in Tehran stock exchange before 2008.
2- Their fiscal year ends in 19/3/
3- Their information should be available.

3-3- The research's statistical sample:
Statistical sample of this research includes 93 firms, regarding population volume and the following equation is used:

\[
n = \frac{N(Z_1 - \frac{a}{2})^2 \sigma^2}{(N + 1)d^2 + (Z_1 - \frac{a}{2})^2 \sigma^2}
\]

Z1: Confidence in 95% level
N: Population volume
d: Sampling error
\(\sigma^2\): Population variance

3-4- Operational definition:
Credit risk: In this research, we use Logit model to measure this variable.
Number of firms: The number of active firms in an industry is calculated through natural logarithm of number of active firms in an industry. The greater the number of active firms in an industry, the companies faces more competition (Rostami et al., 2013).
Firm age: Number of listed years in Tehran stock exchange (Khorrami, 2013).
Firm Size: Natural logarithm of book value of active firms' total assets (Rostami et al., 2013).
Levit: It is calculated by total debt to total assets ratio (Yeganeh, 2008).
ROAit: It is calculated by net income to total assets ratio (heidari et al, 2012).

3-5- Data analysis method:
In this investigation, we firstly examine descriptive statistics of the research's variables based on index of dispersion and central indices. Kolmogorov-Smirnov (K-S) test is used to examine the normality of data; finally simple linear regression test is applied for examining the research's hypotheses.

4- Results:
4-1- Data normality:

<table>
<thead>
<tr>
<th>Table 1-1: Kolmogorov-Smirnov test for examining data normality.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
</tr>
<tr>
<td>Credit risk</td>
</tr>
<tr>
<td>Number of active firms in an industry</td>
</tr>
<tr>
<td>Size of active Firms in an Industry</td>
</tr>
<tr>
<td>Firm age</td>
</tr>
</tbody>
</table>
Regarding table 1-1, due to significance level of the variables is more than 0.05, H0 (normality of data) is confirmed for the variables of credit risk, number and size of active firms in an industry, firm age, financial leverage and ROA.

4-2. The hypothesis test:

<table>
<thead>
<tr>
<th>Variables’ name</th>
<th>Non-standardized estimated coefficients</th>
<th>Standardized estimated coefficients</th>
<th>t-statistics</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed</td>
<td>0.417</td>
<td>0.142</td>
<td>5.124</td>
<td>*0.005</td>
</tr>
<tr>
<td>Number of active firms in an Industry</td>
<td>1.263</td>
<td>0.263</td>
<td>4.226</td>
<td>*0.015</td>
</tr>
<tr>
<td>Firm age</td>
<td>1.002</td>
<td>0.205</td>
<td>3.254</td>
<td>*0.032</td>
</tr>
<tr>
<td>ROA</td>
<td>0.629</td>
<td>0.415</td>
<td>6.316</td>
<td>*0.000</td>
</tr>
</tbody>
</table>

Regarding the table 3-1, since Durbin-Watson statistic test value is determined among 1.5 to 2.5, there is no correlation between errors and regression can be used. The adjusted coefficient of determination is 0.814; indicating 81.4% of all credit risk changes depend on the independent variable. On the other hand, due to significance level of F-test (81.524) in error level less than 0.01, it can be concluded that the regression model is a suitable model and the independent variable are able to describe credit risk changes. Standardized impact factor of active firms' numbers in an industry on credit risk is 0.552, suggesting number of active firms’ variable positively and directly impacts on credit risk. Also, due to significance level of t-statistics, number of active firms’ in an industry on credit risk is 0.000, H0 is rejected in 5% error level with 95% confidence level. It can be stated that there is a significant relation between number of active firms in an industry and credit risk of the listed companies in Tehran stock exchange.

5. Conclusion and Suggestions:

The result of the first hypothesis indicated that there is a significant relation between the numbers of active firms in an industry and credit risk of the listed companies in Tehran stock exchange. This result was consistent with the findings of Setayesh & Kagar Fard Jahromi (2011), Chow et al., (2013), Ghorbani et al., (2013), Heshmat Zadeh et al., (2013), Gani et al., (2013) and was inconsistent with Gonzales (2007), Khadami Pour & Barzaei (2013). The result of the second hypothesis suggested that there is a significant correlation among the size of active firms in an industry and credit risk of the listed companies in Tehran stock exchange. These findings were consistent with Ghorbani et al., (2013), Ebrahimi & Darya Bar (2012), Sun & Chang (2012), Chow et al., (2013) and Michley et al., (2013) and were inconsistent with the results of Pasiras (2010), Khosh Sima & Shahiki Tash (2012). Regarding to the impact of Product market competition on firms’ credit risks, it is recommended to investors to don’t solely rely on firms profitability and focus on other factors such as place of that firm in the related industry, condition of that firm in the product market, market capability and firm’s market share.

REFERENCES


