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Applying Z Model in Vietnamese Commercial Banks to Measure Credit Risks in Industrial Companies' Loans

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***Abstract**:*
The main target of this paper is applying E.I. Altman Z-score model to measure credit risks that appear when commercial banks lend money to industrial companies listed on the stock exchange market of Vietnam. The research results are the principles to offer several solutions that apply Z model to enhancing credit risks management in terms of industrial companies' loans in Vietnamese commercial banks. Additionally, the research results could help industrial companies beware of spending loan money.

***Keyword**: Score-Z model*

1. Introduction

Score – Z model is introduced by E.I. Altman to grade the credit rating of US industrial companies. Z value is the measurement to classify the credit risks of debtor. Z value depends on: (i) debtor's financial index (X_j); (ii) the importance of these indexes in identifying the debtor's bankruptcy possibility in the past.

Z value is certified and applied by both academy and applied researchers. It is the most popular research tool in the world. Professor Edward I. Altman generated Z' and Z'' in order to apply the suitable model to the correspondent type and sector of company.

Specifically:

1.1. The Model No. 1: The Capitalized Manufacturing Companies

$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.64X_4 + 1.00X_5$

If $Z > 2.99$: The company is in the secure zone, no bankrupt possibility

If $1.81 < Z < 2.99$: The company is in the alert zone with the bankrupt possibility

If $Z < 1.81$: The company is in the dangerous zone, high bankrupt possibility.

1.2. The Model No. 2: The Non-Capitalized Manufacturing Companies.

$Z' = 0.17X_1 + 0.847X_2 + 3.107X_3 + 0.420X_4 + 0.998X_5$

If $Z' > 2.90$: The company is in the secure zone, no bankrupt possibility

If $1.23 < Z' < 2.90$: The company is in the alert zone with the bankrupt possibility

If $Z' < 1.23$: The company is in the dangerous zone, high bankrupt possibility.

1.3. The Model No. 3: The Other Companies

$Z'' = 6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4$

If $Z'' > 2.6$: The company is in the secure zone, no bankrupt possibility

If $1.2 < Z'' < 2.6$: The company is in the alert zone with the bankrupt possibility

If $Z'' < 1.1$: The company is in the dangerous zone, high bankrupt possibility.

Where:

X_1 = Working Capital/Total Assets;

X_2 = Retained Earnings/Total Assets

X_3 = EBIT/Total Assets

X_4 = Total Equity/Total Liabilities

X_5 = Sales/Total Assets

2. Research Objective and Methodology

The credit risk happens when one or all debtors cannot make a loan payment. In terms of commercial banks, the credit risks happen when the bank is not able to collect well enough the principal and interest payment. It also happens when the payment of principal and interest is not on time. Accordingly, the commercial bank will not face credit risks if the payment of principal and interest is done adequately on time. Conversely, the commercial bank has to face credit risks if the debtors fail to pay loans or plan to do that. In terms of debtors, the credit risks can be considered as their bankrupt possibility. Therefore, commercial banks should analyze the borrowing companies' bankrupt possibility. Then, banks can issue effective solutions to enhance their credit risk management level.

To analyze how effectively Z score works with industrial companies, researchers assemble data from 36 industrial companies listed on Vietnamese stock exchange market, including 12 out of 36 companies in mining industry, 15 out of 36 companies in manufacturing industry and 9 out of 36 companies in electricity, water and gas production and distribution. Data in the research are calculated and analyzed by math statistics tools with the support from Microsoft Excel software. Therefore, the selected model in this research is the model No. 1 that is applied for capitalized manufacturing companies.

3. Research Results and Discussion

3.1. Applying Z Model to Measure Credit Risks in Mining Companies

Based on the data showed in financial reports of 12 mining companies listed on Vietnam stock exchange market, the authors process the data relating to criteria used in Z-score model. Table No. 2 shows the results of measuring criteria used in Z-score model.

Order	Companies	Z score 2015	Z score 2016	Compare Z score 2016 versus Z score 2015
01	Bac Can Mining Joint Stock Company	1.9712	2.4478	1.24
02	Hoa Binh Mining Joint Stock Company	3.4860	4.6006	1.32
03	Quang Nam Technology Mining Joint Stock Company	2.1988	2.2355	1.02
04	Ha Giang Machinery and Mining Joint Stock Company	4.9903	5.3787	1.08
05	Sai Gon – Quy Nhon Mining Joint Stock Company	4.8736	7.0519	1.45
06	Ha Nam Mining Export and Import Joint Stock Company	2.3356	2.8460	1.22
07	Ha Tu Coal Joint Stock Company – TKV	2.8142	3.0466	1.08
08	Cao Son Coal Joint Stock Company – TKV	2.5702	2.1974	0.85
09	Hoa An Joint Stock Company	8.3937	4.7802	0.57
10	Binh Duong Construction and Mining Joint Stock Company	2.7935	3.2174	1.15
11	Cavico VN Construction and Mining Joint Stock Company	1.0627	1.1411	1.07
12	Da Nui Nho Joint Stock Company	5.9303	5.9171	0.99

Table 1: The Results of Measuring Z score in Several Mining Companies
Source: 2016 Audited Financial Report and Authors' Calculation

In 2015, 6 out of 12 mining companies are in the alert zone with the bankrupt possibility, including: (i) Bac Can Mining Joint Stock Company (Z = 1.1912); (ii) Quang Nam Technology Mining Joint Stock Company (Z = 2.1988); (iii) Ha Nam Mining Export and Import Joint Stock Company (Z = 2.3356); (iv) Ha Tu Coal Joint Stock Company – TKV (Z = 2.8142; (v) Cao Son Coal Joint Stock Company – TKV (Z = 2.5702); (vi) Binh Duong Construction and Mining Joint Stock Company (Z = 2.7935). Especially, there is one company, Cavico VN Construction and Mining Joint Stock Company, has a high bankrupt possibility (Z = 1.0627). In 2015, 5 out of 12 mining companies are in the secure zone, no bankrupt possibility, including: Hoa Binh Mining Joint Stock Company (Z = 3.4860); (ii) Ha Giang Machinery and Mining Joint Stock Company (Z = 4.9903); (iii) Sai Gon – Quy Nhon Mining Joint Stock Company (Z = 4.8736); (iv) Hoa An Joint Stock Company (Z = 8.3937); (v) Da Nui Nho Joint Stock Company (Z = 5.9303).

In 2016, 4 out of 12 mining companies are in the alert zone with the bankrupt possibility, including: (i) Bac Can Mining Joint Stock Company (Z = 2.4478); (ii) Quang Nam Technology Mining Joint Stock Company (Z = 2.2355); (iii) Ha Nam Mining Export and Import Joint Stock Company (Z = 2.8460); (iv) Cao Son Coal Joint Stock Company – TKV (Z = 2.1974). In 2016, the financial status of Cavico VN Construction and Mining Joint Stock Company has got some improvements; however, the company is still in the dangerous zone with high bankrupt possibility (Z = 1.1411). In comparison with 2015, in 2016 the number of mining companies with financial improvements increases. Specifically, there are 7 out of 12 companies has the secure credit rating: (i) Hoa Binh Mining Joint Stock Company (Z = 4.6006); (ii) Ha Giang Machinery and Mining Joint Stock Company (Z = 5.3787); (iii) Sai Gon – Quy Nhon Mining Joint Stock Company (Z = 7.0519); (iv) Ha Tu Coal Joint Stock Company – TKV (Z = 3.0466); (v) Hoa An Joint Stock Company (Z = 4.7802); (vi) Binh Duong Construction and Mining Joint Stock Company (Z = 3.2174); (vii) Da Nui Nho Joint Stock Company (Z = 5.9171).

3.2. Applying Z Model to Measure Credit Risks in Manufacturing Companies

Based on the data showed in financial reports of 15 manufacturing companies listed on Vietnam stock exchange market in the period from 2015 to 2016, the authors process the data relating to criteria used in Z-score model. Table No. 3 shows the results of measuring criteria used in Z-score model.

Order	Companies	Z score 2015	Z score 2016	Compare Z score 2016 versus Z score 2015
01	An Giang Coffee Joint Stock Company	3.9941	2.3425	0.59
02	Bac Lieu Fisheries Joint Stock Company	1.1712	1.4870	1.27
03	Hai Duong Pump Manufacturing Joint Stock Company	2.8198	2.8730	1.02
04	Bien Hoa Concrete Joint Stock Company	2.7965	3.6224	1.29
05	Viet Tri Chemical Joint Stock Company	1.3263	3.9492	2.98
06	Thai Binh Cement Joint Stock Company	3.4712	1.8966	0.55
07	Ben Tre Pharmacy Joint Stock Company	2.2563	2.8270	1.25
08	Ha Long Canned Food Joint Stock Company	3.9917	4.0653	1.02
09	Thang Long Wine Joint Stock Company	1.6788	4.6039	0.36
10	Yen Son Hapaco Joint Stock Company	3.9820	3.0153	0.76
11	Sai Gon Garment Manufacturing and Trading Joint Stock Company	3.4370	1.7496	0.51
12	Ha Noi Milk Joint Stock Company	3.3100	2.9524	0.89
13	Da Nang Rubber Joint Stock Company	6.7185	2.1582	0.32
14	Duc Thanh Wood Manufacturing Joint Stock Company	2.7053	3.1340	1.16
15	Kinh Do Joint Stock Company	2.0042	6.7413	3.36

Table 2: The Results of Measuring Z Score In Several Manufacturing Companies
Unit: Time
Source: 2016 Audited Financial Report and Authors' Calculation

In 2015, in manufacturing industry there are 7 out of 15 companies having a good financial condition; 5 out of 15 companies in the alert zone with the bankrupt possibility and 3 out of 15 companies in the dangerous zone with high bankrupt possibility. The manufacturing companies in the alert zone with the bankrupt possibility are: (i) Hai Duong Pump Manufacturing Joint Stock Company (Z = 2.8198); (ii) Bien Hoa Concrete Joint Stock Company (Z = 2.7965); (iii) Ben Tre Pharmacy Joint Stock Company (Z = 2.2563); (iv) Duc Thanh Wood Manufacturing Joint Stock Company (Z = 2.7053); (v) Kinh Do Joint Stock Company (Z = 2.0042). The data shows that the number of companies with high bankrupt possibility is major, especially fisheries companies, including: (i) Bac Lieu Fisheries Joint Stock Company (Z = 1.1712); (ii) Viet Tri Chemical Joint Stock Company (Z = 1.3263); (iii) Thang Long Wine Joint Stock Company (Z = 1.6788). In 2015, there are 7 out of 15 manufacturing companies having bright financial status, including: (i) An Giang Coffee Joint Stock Company (Z = 3.9941); (ii) Thai Binh Cement Joint Stock Company (Z = 3.4712); (iii) Ha Long Canned Food Joint Stock Company (Z = 3.9917); (iv) Yen Son Hapaco Joint Stock Company (Z = 3.9820); (v) Sai Gon Garment Manufacturing and Trading Joint Stock Company (Z = 3.4370); (vi) Ha Noi Milk Joint Stock Company (Z = 3.3100); (vii) Da Nang Rubber Joint Stock Company (Z = 6.7185).

In 2016, 6 out of 15 manufacturing companies are in the alert zone with the bankrupt possibility, including (i) An Giang Coffee Joint Stock Company (Z = 2.3425); (ii) Hai Duong Pump Manufacturing Joint Stock Company (Z = 2.8730); (iii) Thai Binh Cement Joint Stock Company (Z = 1.8966); (iv) Ben Tre Pharmacy Joint Stock Company (Z = 2.8230); (v) Ha Noi Milk Joint Stock Company (Z = 2.9524); (vi) Da Nang Rubber Joint Stock Company (Z = 1.582). In 2016, 2 out of 15 manufacturing companies are in the dangerous zone with high bankrupt possibility, including: (i) Bac Lieu Fisheries Joint Stock Company (Z = 1.4870); (ii) Sai Gon Garment Manufacturing and Trading Joint Stock Company (Z = 1.7496). 7 out of 15 manufacturing companies have bright financial status, including: (i) Bien Hoa Concrete Joint Stock Company (Z = 3.6224); (ii) Viet Tri Chemical Joint Stock Company (Z = 3.9492); (iii) Ha Long Canned Food Joint Stock Company (Z = 4.0653); (iv) Thang Long Wine Joint Stock Company (Z = 4.6039); (v) Yen Son Hapaco Joint Stock Company (Z = 3.0153); (vi) Duc Thanh Wood Manufacturing Joint Stock Company (Z = 3.1340); (vii) Kinh Do Joint Stock Company (Z = 6.7413).

3.3. Applying Z Model to Measure Credit Risks In Electricity, Water and Gas Production and Distribution Companies

Based on the data showed in financial reports of 9 electricity, water and gas production and distribution companies listed on Vietnam stock exchange market in the period from 2015 to 2016, authors process the data relating to criteria used in Z-score model. Table No. 4 shows the results of measuring criteria used in Z-score model.

In 2105, 4 out of 9 electricity, water and gas production and distribution companies are in the alert zone with the bankrupt possibility, including: (i) Hai Phong Electric Machinery Joint Stock Company (Z = 1.8816); (ii) Khanh Hoa Electric Joint Stock Company (Z = 1.8854); (iii) Ry Ninh II Hydro Power Joint Stock Company (Z = 1.8477); (iv) Center Electro Mechanical Joint Stock Company (Z = 2.4307). Especially, 3 out of 9 companies are with high bankrupt possibility, including: (i) Nam Mu Hydro Power Joint Stock Company (Z = 0.4370); (ii) Song Ba Joint Stock Company (Z = 0.3134); (iii) Can Don Hydro Power Joint Stock Company (Z = 1.0716). 2 out of 9 companies are in the secure zone, no bankrupt possibility, including: Ninh Binh Thermal Power Joint Stock Company (Z = 5.2875); (ii) Na Loi Hydro Power Joint Stock Company (Z = 3.8641).

Order	Companies	Z score 2015	Z score 2016	Compare Z score 2016 versus Z score 2015
01	Hai Phong Electric Machinery Joint Stock Company	1.8816	1.4901	0.79
02	Nam Mu Hydro Power Joint Stock Company	0.4370	0.5455	1.25
03	Ninh Binh Thermal Power Joint Stock Company	5.2875	4.0221	0.76
04	Na Loi Hydro Power Joint Stock Company	3.8641	7.1809	1.86
05	Khanh Hoa Electric Joint Stock Company	1.8854	2.3776	1.26
06	Ry Ninh II Hydro Power Joint Stock Company	1.8477	1.0534	0.57
07	Song Ba Joint Stock Company	0.3134	1.1462	3.66
08	Can Don Hydro Power Joint Stock Company	1.0716	1.0536	0.98
09	Center Electro Mechanical Joint Stock Company	2.4307	2.5735	1.06

Table 3: The Results of Measuring Z Score In Some Electricity, Water and Gas Production and Distribution Companies
Unit: Time
Source: 2016 Audited Financial Report and Authors' Calculation

In 2016, 2 out of 9 electricity, water and gas production and distribution companies have bright financial status; 2 companies are in the alert zone with the bankrupt possibility and 5 companies have high bankrupt possibility. Therefore, in comparison with 2015 the number of companies in the alert zone with the bankrupt possibility increases to 5 companies from 4 companies. Specifically, they are: (i) Hai Phong Electric Machinery Joint Stock Company (Z = 1.4901); (ii) Nam Mu Hydro Power Joint Stock Company (Z = 0.5455); (iii) Ry Ninh II Hydro Power Joint Stock Company (Z = 1.0534); (iv) Song Ba Joint Stock Company (Z = 1.1462); (v) Can Don Hydro Power Joint Stock Company (Z = 1.0536). The industrial companies with bright financial status include (i) Ninh Binh Thermal Power Joint Stock Company (Z = 4.0221); (ii) Na Loi Hydro Power Joint Stock Company (Z = 7.1809). 2 out of 9 electricity, water and gas production and distribution companies are in the alert zone with the bankrupt possibility, including: (i) Khanh Hoa Electric Joint Stock Company (Z = 2.3776); (ii) Center Electro Mechanical Joint Stock Company (Z = 2.5735).

4. Conclusion and Recommendations

4.1. Conclusion

By using E.I.Altman's Z score model to measure credit rating of some industrial companies (36 companies) listing on the Vietnamese stock exchange market (Ho Chi Minh and Ha Noi stock exchange market), the research results in 2016 compared to 2015 show that: the number of companies with positive financial condition increases (39 % in 2015 compared to 44 % in 2016), the number of companies in the alert zone with the bankrupt possibility decreases (42% in 2015 compared to 33 % in 2016). However, the number of companies with the high bankrupt possibility increases (19% in 2015 compared to 23 % in 2016), specifically:

- In 2015, there are 14 out of 36 companies with no bankrupt possibility making up over 39 % of the total researched companies. At the same time, there are 15 out of 36 companies in the alert zone with the bankrupt possibility, making up 42 % of the total researched companies. There are 7 out of 36 companies with the high bankrupt possibility, making up 19 % of the total researched companies.
- In 2016, there are 16 out of 36 companies with no bankrupt possibility making up over 44 % of the total researched companies while there are 12 out of 36 companies in the alert zone with the bankrupt possibility, making up 33 % of the total researched companies. In terms of companies with the high bankrupt possibility, there are 8 out of 36 companies taking up 23 % of the total researched companies.

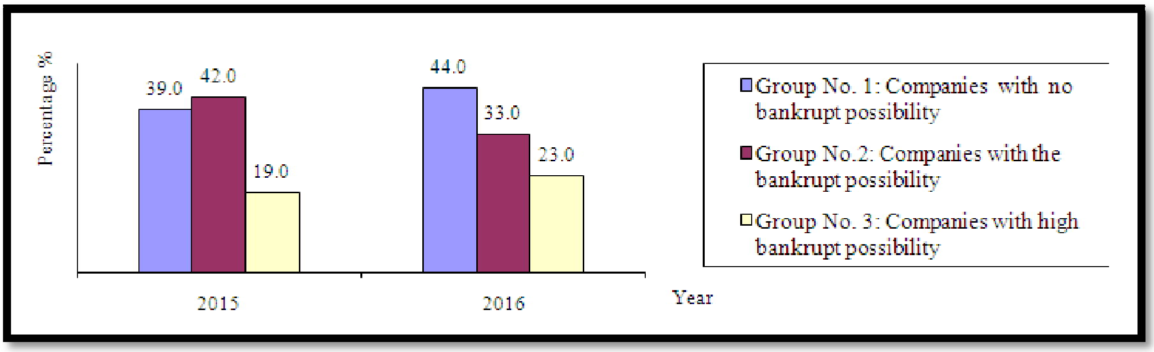

Figure 1: Credit Rating in Some Industrial Companies
Source: Assembled from Financial Reports of Researched Companies and Authors' Calculation

4.2. Recommendations

From the mentioned research results, the authors offer several recommendations to commercial banks in order to apply Z model to enhancing the credit risk management. In addition, the authors give some practical recommendations to companies, especially companies in mining, manufacturing, electricity, gas and water industry listing on Vietnamese stock exchange market in order to minimize the bankrupt possibility. Recommendations could be expressed as below:

5. Respect to Commercial Banks

5.1. Applying Z score Model before Making Credit Decision

Based on the research results, banks could use companies' Z score to classify companies into the safe zone without bankrupt possibility; the alert zone with bankrupt possibility; the dangerous zone with high bankrupt possibility. The classification could be the base for banks to issue the necessary credit limit for each type of companies. Therefore, bank managers could consider the Z score model as an effective tool that supports them to make an appropriate credit decision. To apply Z score model effectively in order to rate credit risks of general companies and industrial companies, commercial banks should add the step of measuring indexes X_1, X_2, X_3, X_4, X_5 and Z into the credit appraising procedures. Specifically:
After receiving and checking customers' application for credit facility enclosed with loan documents, credit consultant appraises the loan including customer's legal personality; customer's business and financial status; the feasibility of loan; customer's loan status. Then the credit consultant decides lending money methods and the interest rate, as well as calculates Z model's indexes based on the company's last 2-year financial reports. Next, the credit consultant composes credit appraisal report. The credit appraisal report includes the results of Z score model calculation of each company and credit offer referring to Z model quantification results with particular criteria. In some particular cases (depends on the banks' credit approving conditions), credit consultant sends application for credit facility and enclosed documents to risk management officers. Then risk management officer appraises documents individually and composes risk appraisal report. The report shows the credit risk level based on Z model and offers solutions to minimize credit risks.
The effectiveness of applying Z model depends strongly on inputs illustrated in companies' financial reports over periods. Therefore, if companies' financial reports sent to banks are not up to date or not accurate, the Z model results can be misguided. In the credit appraisal procedures, commercial banks should clarify the requirements for customers' financial reports. Specifically, these reports must be audited by a private legal auditing company. Apparently, the data showed in an audited financial report could improve the credibility of Z model results. It is exactly what commercial banks expect when they apply Z model in order to evaluate customers' credit risks.

5.1.1. Applying Flexible Credit Policies towards Industrial Companies

Based on the research results, almost all of companies in seafood manufacturing, mechanical, mining and wine production get involved in business risks and have bankrupt possibility. Therefore, banks should evaluate carefully those companies' financial status as well as bankrupt possibility before making credit decision towards those companies. However, with regard to customer capital supporting, banks should offer more flexible credit policies for those companies such as cutting down loan granting process, providing those companies loan with lower interest rate than normal interest rate.

Banks' customers in terms of industrial development and investment are companies operating in business expansion as well as green field investment in mining, manufacturing and water and gas production and distribution; especially companies in manufacturing industry. The aim for industrial development and investment loan is to reinforce companies supporting core industries, limit trade deficit, stabilize exchange rate and create more jobs. Hence, commercial banks should approach customers in three ways: (i) via big corporations in textile and garment industry, leather and shoes industry, mechanic and manufacturing industry in order to support industrial companies; (ii) via local industrial organizations (iii) via network of commercial banks' affiliates and offices in the whole country.

5.1.2. Establish Framework for Credit Risk Management

In order to apply effectively Z model to enhancing risk management in general as well as risk management in industrial investment and development, commercial banks should establish credit risk management framework and credit risk department's responsibilities. It is a principal solution to enhance credit risk management in commercial banks based on Basel Commission's 17 principles, including: (i) transferring information about mission, vision, guidelines and methods in terms of credit; (ii) indentifying curent risks as well as potential risks in credit activities and products; (iii) setting up and achieving credit policies clearly; (iv) checking and supervising credit teachnically so as to indentify credit risk; (v) setting up functions related to credit including resposibilities, roles and reporting channels; (vi) being responsible to credit quality by setting up an appropriate credit appraising and awarding system; (vii) buiding up a rigorous credit appraising procedure including credit risk grading system and individual credit checking function.

5.1.3. Respect to Industrial Companies

General and industrial companies should actively grasp the way commercial banks apply Z model to appraise their bankrupt possibility. Moreover, companies have to audit their financial reports and send banks the auditing report when they ask for loan. In addition, companies have to improve their business productivity, promptly limit business risks, conserve and increase their capital. Those are practical solutions to improve companies' financial status as well as to consolidate the banks' belief. With a nice financial status, companies are confident to know that banks use Z model to evaluate their bankrupt possibility. Some solutions to minimize business risks in general companies as well as industrial companies and to apply effectively Z model in commercial banks could be listed as following:

5.1.4. Actively Seizing Changes In Government Policy

Vietnam law system is on the way of fulfillment and could have some changes; therefore, it may create some legal risks for companies. Companies should eagerly limit those risks by researching and gripping changes in law system and government policies in order to adjust their business plans. Additionally, companies should try to limit other legal risks such as risks in business contract by consulting lawyers as well as legal specialists on related issues.

5.1.5. Managing and Using Effectively Company's Assets

The research results show that Z criterion depends on company's total assets. Therefore, managing and using effectively company's assets can minimize company's bankrupt possibility. Companies with bankrupt possibility have to classify and identify non-operating assets that do not directly or indirectly contribute to the ongoing operations of a business. And companies should liquidate those assets immediately because it helps transform fixed assets into short-term assets. That transaction makes X_1 increase. Besides, the transaction makes depreciation cost decrease, thus makes profit ratio rise. It means that X_2 and X_3 grow consequently and Z grows next, specifically bankrupt possibility reduces.

5.1.6. Financial Reorganizing by Rising Owners' Equity

Research results show that the ratio of liabilities occupies a large part in companies' capital structure. Using huge financial leverage covers repayment risks when companies get involved in business troubles and cannot make revenue as well as profit in order to repay for loans due to date. Movements in the interest rate market show that the interest rate tends to rise although it is under State Bank's control. The rise of interest rate makes cost increase and cut down company's business productivity. To lessen these risks, general companies as well as industrial companies have to reorganize capital flow by rising owners' equity. It could be easy for capitalized companies listed on stock exchange market to obtain that target by attracting private investment capital.

5.1.7.Improving Companies' Operations

In order to exist and develop in such an extremely competitive market, companies have to build up a long-term plan to enhance their competitive ability by following solutions, including (i) continually innovate technology, advance workers' productivity to reduce cost, save inputs then cut down product price; (ii) invest more and increase company's productivity in order to achieve economies of scale; (iii) strengthen the function of distribution channel so as to emphasize a strong brand to customers; (iv) paying attention to research & development, forecast and planning jobs in order to follow up market changes, then increase using capital effectiveness; (v) enhance company managing quality by cutting down company managing cost.

5.2. Respect to Government and State Administrative Offices

In order to enhance management ability in commercial banks' loan for industrial investment and development by using Z model effectively, Vietnam government and state administrative offices should achieve following issues:

- Continually accomplishing general policies especially industry developing policies. Establishing rigorous and complete legal procedures that clarify administrative offices' duty and authority from local level to state level in terms of attracting, using and controlling investment capital.
- Executing sufficiently Enterprise Law and Law on Promotion of Domestic Investment so as to raise private capital maximum. Simplifying administrative procedures and reducing overlaps among different offices in order to improve investment environment.
- Bettering the quality of investment plans as well as investment appraisal, check-up and supervision. Setting up a rigid link among ministries, sectors, local areas and territories in terms of investment and development planning. Combining adequately related projects in the same area.

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