



Development of Credit Rating Scales in Investment Industry Companies

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ABSTRACT

Knowledge about the credit status of the company helps users to make decisions with less risk. The ability and willingness to fulfill obligations indicates the credit status of companies, which is determined by the credit rating index. The company's credit rating shows an independent assessment of the company's ability to pay debts on time, and in fact, the main and appropriate task of credit rating is to help strengthen the efficiency and transparency of capital markets by reducing information asymmetry between borrowers and lenders. The purpose of the research is to develop credit rating scales for investment industry companies. In line with the above goal, the present study conducted interviews with experts and analysts according to the study of theoretical literature and the guidelines of Moody's rating agency and extracting the primary factors of credit rating of companies active in the investment industry, and using binomial and Friedman tests, the indicators The final credit ranking of pharmaceutical companies, prioritization and importance of these indicators were discussed.

Keywords: credit status, risk, investment



1. Introduction

Knowledge about the credit status of the company helps users to make decisions with less risk. The ability and willingness to fulfill obligations indicates the credit status of companies, which is determined by the credit rating index. The company's credit rating shows an independent assessment of the company's ability to pay debts on time, and in fact, the main and appropriate task of credit rating is to help strengthen the efficiency and transparency of capital markets by reducing information asymmetry between borrowers and lenders. Gray et al., 2006; Keller, 2005). The asymmetry of information has made lenders and borrowers make the right decisions regarding lending and borrowing, and credit rating can solve these problems by clarifying the status and desirability of the borrower's credit. The financial status of companies has a very high correlation with their ability to fulfill their obligations towards investors, creditors and other beneficiaries. The ranking of companies is a measure of financial status and helps users (especially investors) to make better decisions about their investment (Makhatab Rafei et al., 2012). The credit rating of companies by comparing their credit risk with each other makes it easier for investors to make a decision, on the other hand, the company's rating determines the cost that the company must pay in order to secure financing in the capital market.

Credit rating agencies are organizations that collect and analyze public and private information of companies and present the result of the test and inferential analysis in the form of a credit rating to users and applicants through rating models. In fact, this rating indicates the inherent risk of specific credit transactions with the lender (Kontor and Packer, 1994). The emergence of rating agencies dates back to the early 20th century. When the United States Railroad Company in 1860 announced its need for foreign financing to rebuild passenger and freight cars (Kamar and Haynes, 2003), there was a demand for third-party expert evaluations of Provide credit to borrowers. In order to meet this demand, John Moody published the first bond rating manual in 1909, providing accurate information to lenders as well as monitoring borrowers. This service was useful for investors, especially small investors who lacked time and knowledge, and during a decade after that, other companies were added to this field, the most important of which are S&P and Fitch, which are now with the

company. Moody's is recognized as one of the important components of financial and economic markets in the world (Fitch Rating, 2014). Rating agencies use various factors including quantitative information and qualitative information in their rating models, which are the basis of credit rating. These factors are mainly risk factors related to the company's credit rating, which consists of business risk, country risk, industry risk and industry characteristics, operating environment, profitability and comparison with competitors and financial risk including financial ratios and accounting methods, company management, adequacy cash flows and capital structure.

According to the recent conditions of the capital market in Iran, where we are witnessing the boom in investment activities, and on the other hand, according to the reports of the Central Bank, which indicate an increase in bank debts and the statistics of companies defaulting on their financial obligations, the Tehran Stock Exchange and Securities Organization issued instructions in 2016 The establishment of rating institutions in Iran shows the strong need of the Iranian capital market for credit rating and the elimination of information asymmetry in order to reduce the number of defaults and increase efficiency and effectiveness in investments.

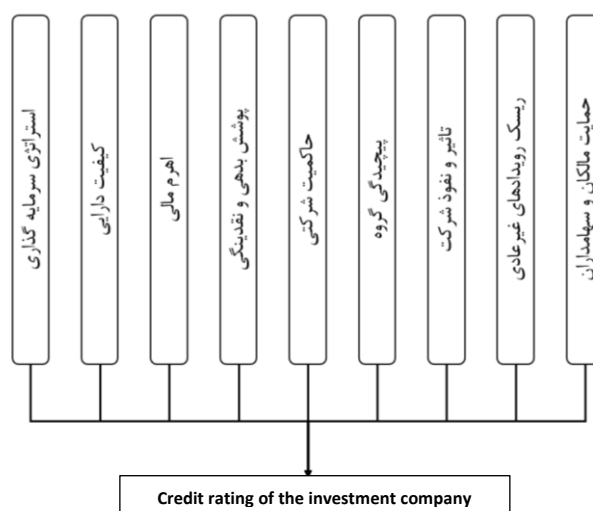
Following this instruction, during the years 2017 and 2018, only three companies started their activities in this field and were able to obtain the license for credit rating activities of companies and securities from the Securities and Exchange Organization. The purpose of this research is to develop credit rating scales for investment industry companies.

2. The Importance and Necessity of the Research

According to the official reports of the central bank regarding the increase in the defaults of banks' claims from customers due to the lack of credit rating and evaluation system of companies and according to the creation of special attention to the field of credit rating of companies in Iran which was achieved by the Tehran Stock Exchange Organization and also The actions of this organization regarding the issuance of licenses for the establishment of credit rating institutions in Iran in recent years, the need to develop the credit rating industry of companies in Iran is felt. According to the requirements of the Tehran Stock

Exchange Organization, obtaining a license to establish credit rating institutions requires that the institutions applying for the license must operate as a subsidiary or affiliated company of prominent foreign rating institutions. This is to emulate the methodology, model and operation of foreign rating agencies and increase reliability. This issue indicates the poverty of accounting knowledge in the field of credit rating of companies. In the field of research on credit rating models of companies in Iran, mainly the articles tested the models by implementing foreign credit rating models on domestic companies using simple regression models, and there are only a few researches that are identified as field and exploratory research. Paid credit rating models. This is despite the fact that these researches have either been carried out in the banking industry and the rating of banks, or they have done modeling for all companies in general and have

not made a difference between each industry, which from the point of view of the present research, the characteristics of companies in each industry can be very different from other industries, which requires providing specific ranking models of companies for each industry. Therefore, the current research aims to develop accounting knowledge in the field of credit rating of companies in Iran and remove the dependence on foreign models that are mostly unrelated to the prevailing conditions in our country, and also considering the importance of the investment industry in the capital market of Iran, to investigate and identify to discuss the variables of credit rating of companies active in the investment industry and for the first time in Iran, provide a credit rating model specifically for this industry. According to the topics discussed, the conceptual model of the research is as follows:



3. Research Background

Jiaol et al. (2019) investigated the effect of credit ratings provided by the National Credit Rating Institute of China on the reduction of information distortion in the Chinese market and concluded that the provided credit ratings effectively reduce information distortion in the Chinese securities market. Also, their findings show that credit ratings are an important factor in attracting financial resources and financing for companies. Blomoist et al. (2020) in research entitled credit rating and the life cycle of companies state that the need of companies for credit

rating during the life cycle of the company is U-shaped and the more companies gain reputation and find the need for information symmetry, they also need more credit ratings. In fact, when a company goes from the initial stage to the growth and maturity stage, the probability of needing a credit rating increases from 6.7% to 30%. Kadakis et al. (2021) in research titled multiple rating and liquidity creation addressed the issue of how much the credit rating of a company had an effect on the company's cash flow. By examining 486 banks from 71 countries, they examined whether the high number of credit rating inquiries received by

banks from companies had an effect on the creation of cash flows of companies. They concluded that the creation of liquidity has a negative relationship with the number of ratings obtained by the bank, and the adjusting variable of the company's capital can make this relationship positive. Aktas et al. (2021) in research entitled credit rating and equipment construction concluded that companies with a low credit rating can purchase more equipment without restrictions by increasing their credit rating. In fact, companies with a high credit rating are trying to maintain their credit rating and are worried about reducing their rating so that they can be highly productive in purchasing equipment and assets.

Mohammadi Khanqah et al. (2018) in research investigated the mediating effect of profit management on the relationship between the quality of corporate governance and credit rating. In this research, credit rating was measured through the emerging market score model and real profit management was measured through the Roy Choudhary model. The results of their research show that the quality of corporate governance has an inverse and significant effect on real profit management, and real profit management has a negative and significant effect on credit rating. Also, the results indicate that the quality of corporate governance has an effect on the credit rating indirectly through real profit management. The presence of strong corporate governance mechanisms leads to a decrease in the opportunistic behavior of managers, and in this way, it causes the credit rating to increase. In other words, the mediating role of real profit management in the relationship between the quality of corporate governance and credit rating is confirmed. Hajjha and Ghorbani (1400) have carried out research with the aim of investigating the effect of social responsibility on the credit rating of companies with regard to the moderating role of low to high fluctuations in stock returns. The results of the research hypotheses test show that social responsibility has a positive and significant effect on the company's credit rating. In other words, increasing the level of importance of the company to the category of social responsibility increases the credit rating of the company with creditors. Also, the results of the research showed that the fluctuation of stock returns has a negative and significant effect on the relationship between social responsibility and the company's credit rating. In this way, when companies have low to high

volatility of high stock returns, fulfilling the social responsibility clauses will not have much effect on the creditor's favorable opinion, and the creditor will lower the credit rating of the company. Daneshvar et al. (1400) in research entitled the role of profit quality in credit risk estimation compared four profit quality indicators that only use accounting data to determine the quality of profit and determine the extent of their influence on the degree of credit risk of companies admitted to the stock exchange. Bahadar Tehran paid. The relationship between the desired indicators and the credit rating of each company was also tested and confirmed. Also, four profit quality indicators were used, including stability and predictability, profit and cash relationship, accruals and finally profit reaction coefficient and adjusted profit reaction coefficient. First, the relationship between the financial indicators and the credit rating determined by the data coverage analysis method was confirmed in the form of a test regression model and the validity of the model. Then, the relationship between four profit quality indicators and the credit rating of each company was tested. From this research, it can be concluded that there is a significant relationship between the credit risk of companies listed in the Tehran Stock Exchange and the major indicators of their profit quality.

4. Methodology

In general, the current research is divided into two main phases. The first phase has a qualitative aspect and through the study of previous texts and literature, review of the guidelines of prominent rating institutions in the world and interviews with experts in the field of company rating in the investment companies' industry, it develops a conceptual framework and prepares a questionnaire. The method used in the first phase of the research is applied based on the purpose and exploratory based on the nature and qualitative based on the type of data. Also, in order to collect information and develop a questionnaire, the method of interview and study of texts and rating guidelines of Moody's Institute is used. The second phase of the research deals with the distribution and collection of questionnaires among experts, and in order to analyze the data, validity verification methods such as principal component analysis, reliability and validity are used. The method used in the second phase of the research is applied

based on the purpose and exploratory based on the nature and quantitative based on the type of data.

5. Binomial Test

In the present study, the data of the 5-point Likert scale are divided into two groups. The first group of variables that have values 1 to 3 in the Likert scale questionnaire (do not determine the credit rating) and the second group of variables that have values 4 and 5 in the Likert spectrum questionnaire (they determine the credit rating). Therefore, this test examines the following assumption:

Null hypothesis: does not determine the credit rating ($P \leq 0.6$)

Assumption one: it determines the credit rating ($P > 0.6$)

If the probability of the second group is greater than or equal to 0.6, the null hypothesis is confirmed, and that index is not considered a ranking factor according to experts.

6. Friedman Test

The indicators determining the credit rating according to experts were analyzed with the Friedman test. This test ranks their opinions about these indicators. The null hypothesis and its reciprocal hypothesis are as follows:

Zero hypothesis: indicators have the same priority.

Assumption one: at least two indicators have different priorities.

7. Statistical Population

The statistical population of the research for which the results of the research can be generalized are all the companies active in the investment industry of Iran. In the first phase of the research, the executive instructions and documentation of the models used in Moody's International Rating Institute and also domestic rating institutions will be reviewed, and then by using previous literature and research, as a

complement to the initial research studies from the community of experts. And investment industry analyst will be used. In the second phase of the research, after designing the conceptual models of credit rating for the investment industry and also designing the questionnaire of credit rating variables in the investment industry, again went to experts, experts and experts in the investment industry to evaluate the variables and identify Basic components play the main role. In this research, experts will be selected from the following groups:

- a) Capital market analysts who specialize in the investment industry in financial institutions and brokerages.
- b) Financial managers and CEOs of companies active in the investment industry.
- c) Risk managers of banks who are busy evaluating the credit risk of granting facilities to customers.
- d) Credit managers of banks who are busy evaluating the credit risk of granting facilities to customers.
- e) Managers and analysts of domestic rating institutions who are engaged in providing credit rating services.
- f) Faculty members of public universities in accounting, management and other related fields.

8. Findings

First, Moody's rating guidelines were studied, and then factors were extracted, which were used as the basis of interviews with experts and analysts of investment industry companies. After interviewing and surveying 10 experts in this industry, based on the nature and conditions governing the country's investment industry, some factors were removed and some factors were added to this list, which was compiled as described in the table below.

Table 1: Conceptual definition of investment industry variables

Theoretical concept	Variable name	Row	Factor class
including transparency in the tenure of investments and the purpose of their acquisition	Conservative and transparent investment	1	Investment strategy
History of management performance in risky investments	Management experience	2	
Amount of liquid investments to total investments	Investment liquidity strategy	3	
The amount of foreign investments to total investments	share of the foreign market	4	

Theoretical concept	Variable name	Row	Factor class
The company's ability to make decisions in the executive affairs of investments	The degree of control and influence over investments	5	
The amount of investment in foreign exchange and export-oriented industries, including petrochemicals and mines	Presence in foreign exchange industries	6	
Indicates the size of the market value of investments	The market value of the assets of the companies subject to investment	7	
Diversifying the composition of assets and reducing the risk of asset concentration	Asset concentration	8	Asset quality
Diversity of investment in diverse geographical areas	Geographical diversity in investments	9	
Diversity of investment in diverse industries and investment topics	Business diversity in investments	10	
The amount of information disclosed and the transparency of investment matters	Investment portfolio transparency	11	
The ratio of total facilities received to total liabilities and the estimated market value of equity	Financial leverage based on estimated market value	12	Financial Leverage
The amount of debt coverage from registered capital	Debt to registered capital ratio	13	
The amount of debt coverage from operating cash flow	Ratio of operating cash flow to debt	14	
The amount of interest cost coverage from operating profit	Ratio of operating profit to interest expense	15	
The presence of company locations in less privileged areas or having knowledge-based characteristics	Potential to use cheap facilities	16	
Total liabilities to total assets	debt ratio	17	
Total equity to total assets	Proprietary ratio	18	
Total current assets to total current liabilities	current ratio	19	
The amount of debt that can be created in the company according to the level of operating income, cash flows and equity	Having debt capacity	20	
The amount of debt coverage from the company's cash balance	cash ratio	21	Debt coverage and liquidity
Total operating cash flow and interest expense divided by interest expense	Total operating cash flow and interest expense divided by interest expense	22	
How to allocate and use the operating cash of the company in different areas	Ability to manage cash	23	
Ability to manage the company against legal pressures and competitive challenges	Responding to competitive challenges and legal pressures	24	
The extent of the company's tax exemptions	Having tax exemptions	25	
The policy of dividing the accumulated profit or capital increase from its location	Dividend policy or capital increase	26	
Private or state or public ownership (management changes are more in the state)	Private or public or public ownership	27	Corporate governance
The flexibility of operating liquidity and the ability to respond to short-term liquidity needs	The degree of flexibility of operational liquidity	28	
The status of the audit committee in terms of members' expertise, the number of meetings held, etc	The state of the structure of internal controls	29	
Compliance of the internal control structure with the requirements of the stock exchange organization	The status of the internal audit committee	30	
Combination of ownership structure and their relationship with management and board members	Health and disclosure of transactions with related parties	31	Complexity of the group
Health and disclosure of transactions with related parties	Composition of ownership structure and their relationship with management	32	
Mutual participation of directors and board of directors among partnerships as an indicator of complexity	Mutual participation of directors and board of directors among partnerships	33	Complexity of the group
The amount of intragroup transactions among partnerships	The extent of intragroup	34	

Theoretical concept	Variable name	Row	Factor class
as an indicator of complexity	transactions among partnerships		
The participation of several companies and financial institutions in the holding's stock portfolio as an indicator of complexity	Participation of several companies and financial institutions in the portfolio of the holding	35	
Penetration rate and impact on investment: More penetration is associated with high asset concentration and less investment diversification	The degree of penetration and impact on investment	36	The impact and influence of the company
Unusual events include mergers and acquisitions, asset sales/auctions, capital restructuring programs, lawsuits and shareholder changes.	The probability of occurrence of unusual events	37	Risk of unusual events
Investigating the financial ability and strategic motives of company owners at the time of challenges, the credit rating of company owners	Investigating the financial ability and strategic motivations of company owners when challenges occur	38	Support of owners and shareholders
The share of financing from the group compared to financing from banks (supporting group companies)	The share of financing amount from the group	39	

9 .Descriptive Statistics of the Investment Industry

Table 2: Descriptive statistics of investment industry participants

Percent	Amount	Description
Gender		
80%	40	Man
20%	10	Woman
100%	50	Total
Age		
8%	4	30 to 35 years
56%	28	35 to 40 years
26%	13	40 to 45 years
10%	5	45 years and above
100%	50	Total
Education		
4%	2	Masters
74%	37	Masters
22%	11	PhD
100%	50	Total
Work Experience		
4%	2	5 to 10 years
42%	21	10 to 15 years
42%	21	15 to 20 years
12%	6	20 years and above
100%	50	Total
Organizational Category		
6%	3	Member of the board of directors of the organization
48%	24	Organizational expert
44%	22	Senior manager of the organization
2%	1	CEO of the organization
100%	50	Total

10. Reliability Test of Research Variables

Findings of the reliability test are as follows:

Table 3. The results of the reliability test of investment industry variables

Cronbach's alpha	Index class	Row
0.889	Investment strategy	1
0.853	Asset quality	2
0.897	Financial Leverage	2
0.826	Debt coverage and liquidity	3
0.794	Corporate governance	4
0.798	Complexity of the group	5
-	The impact and influence of the company	6
-	Risk of unusual events	7
0.777	Support of owners and shareholders	8

11. Validity Test of Research Variables

The findings of the validity test are as follows:

The results of Bartlett and KMO test as indicators of sampling adequacy show that the values of both indicators are at a favorable level. The KMO standard value for all variables and larger dimensions is equal to 0.5 and the significance value of Bartlett's test is less than 0.05. Based on this, it is possible to ensure the suitability of the sample size for factor analysis. Regarding the confirmatory factor analysis (construct

validity) test, according to the results obtained from the category of investment strategy index, management experience variable (0.018), from the category of financial leverage indicators, the variable potential of using low-cost facilities (0.148) and the ratio Current (0.051) is removed because the test values are less than 0.2 and other variables show that they have good construct validity. Therefore, out of 37 variables, 3 variables are removed in this step and the remaining variables reach 34 variables.

Figure 4. The results of the construct validity test of investment industry companies

Bartlett's level of significance	KMO index	Result	Construct validity	Item description	Row	Factor class
0.000	0.661	confirmation	0.207	Conservative and transparent investment	1	Investment strategy
		rejection	0.018	Management experience	2	
		confirmation	0.609	Investment liquidity strategy	3	
		confirmation	0.729	The degree of control and influence over investments	4	
		confirmation	0.609	Presence in foreign exchange industries	5	
		confirmation	0.550	The market value of the assets of the companies subject to investment	6	
0.000	0.772	confirmation	0.680	Asset concentration	7	Asset quality
		confirmation	0.787	Geographical diversity in investments	8	
		confirmation	0.797	Business diversity in investments	9	
		confirmation	0.598	Investment portfolio transparency	10	
0.000	0.822	confirmation	0.621	Financial leverage based on estimated market value	11	Financial Leverage
		confirmation	0.385	Debt to registered capital ratio	12	

Bartlett's level of significance	KMO index	Result	Construct validity	Item description	Row	Factor class
0.000	0.756	confirmation	0.602	Ratio of operating cash flow to debt	13	Debt coverage and liquidity
		confirmation	0.735	Ratio of operating profit to interest expense	14	
		rejection	0.148	Potential to use cheap facilities	15	
		confirmation	0.510	debt ratio	16	
		confirmation	0.600	Proprietary ratio	17	
		rejection	0.051	current ratio	18	
		confirmation	0.359	Having debt capacity	19	
0.000	0.692	confirmation	0.504	cash ratio	20	Debt coverage and liquidity
		confirmation	0.423	Total operating cash flow and interest expense divided by interest expense	21	
		confirmation	0.538	Responding to competitive challenges and legal pressures	22	
		confirmation	0.469	Having tax exemptions	23	
		confirmation	0.666	Dividend policy or capital increase	24	
		confirmation	0.529	Private or public or public ownership	25	
0.000	0.688	confirmation	0.513	The degree of flexibility of operational liquidity	26	Corporate governance
		confirmation	0.676	The state of the structure of internal controls	27	
		confirmation	0.585	The status of the internal audit committee	28	
		confirmation	0.699	Health and disclosure of transactions with related parties	29	
0.000	0.688	confirmation	0.515	Composition of ownership structure and their relationship with management	30	Complexity of the group
		confirmation	0.777	Mutual participation of directors and board of directors among partnerships	31	
		confirmation	0.729	The extent of intragroup transactions among partnerships	32	
-	-	confirmation	0.637	Participation of several companies and financial institutions in the portfolio of the holding	33	The impact and influence of the company
-	-	confirmation	-	The degree of penetration and impact on investment	34	
-	-	confirmation	-	The probability of occurrence of unusual events	35	Risk of unusual events
0.023	0.500	confirmation	0.657	Investigating the financial ability and strategic motivations of company owners when challenges occur	36	Support of owners and shareholders
		confirmation	0.657	The share of financing amount from the group	37	

12. Binomial test

The findings of the two-sentence test are presented as follows:

The results of the binomial test in the investment industry show that all 34 variables have an effect in determining the ranking and are significant and confirmed from the point of view of the binomial test.

Table 5. The results of the construct validity test of investment industry companies

Result	Significance level	Probability of observation	Number of views	group	Item description	Row	Factor class
confirmation	0.000	0	0	≤ 3	Conservative and transparent investment	1	Investment strategy
		1	52	> 3			
confirmation	0.000	0	0	≤ 3	Investment liquidity strategy	2	
		1	52	> 3			
confirmation	0.000	0	0	≤ 3	The degree of control and influence over investments	3	
		1	52	> 3			
confirmation	0.000	0	0	≤ 3	Presence in foreign exchange industries	4	
		1	52	> 3			
confirmation	0.000	0	0	≤ 3	The market value of the assets of the companies subject to investment	5	
		1	52	> 3			
confirmation	0.000	0.02	1	≤ 3	Asset concentration	6	
		0.98	51	> 3			
confirmation	0.000	0.06	3	≤ 3	Geographical diversity in investments	7	
		0.94	49	> 3			
confirmation	0.000	0.04	2	≤ 3	Business diversity in investments	8	
		0.96	50	> 3			
confirmation	0.000	0	0	≤ 3	Investment portfolio transparency	9	
		1	52	> 3			
confirmation	0.000	0	0	≤ 3	Financial leverage based on estimated market value	10	
		1	52	> 3			
confirmation	0.000	0	0	≤ 3	Debt to registered capital ratio	11	
		1	52	> 3			
confirmation	0.000	0	0	≤ 3	Ratio of operating cash flow to debt	12	
		1	52	> 3			
confirmation	0.000	0.02	1	≤ 3	Ratio of operating profit to interest expense	13	
		0.98	51	> 3			
confirmation	0.000	0	0	≤ 3	debt ratio	14	
		1	52	> 3			
confirmation	0.000	0	0	≤ 3	Proprietary ratio	15	
		1	52	> 3			
confirmation	0.000	0	0	≤ 3	Having debt capacity	16	
		1	52	> 3			
confirmation	0.000	0	0	≤ 3	cash ratio	17	
		1	52	> 3			
confirmation	0.000	0	0	≤ 3	Total operating cash flow and interest expense divided by interest	18	
		1	52	> 3			

Result	Significance level	Probability of observation	Number of views	group	Item description	Row	Factor class
					expense		
confirmation	0.000	0.15	8	≤ 3	Responding to competitive challenges and legal pressures	19	Corporate governance
		0.85	44	> 3			
confirmation	0.000	0.17	9	≤ 3	Having tax exemptions	20	
		0.83	43	> 3			
confirmation	0.000	0.02	1	≤ 3	Dividend policy or capital increase	21	
		0.98	51	> 3			
confirmation	0.000	0	0	≤ 3	Private or public or public ownership	22	
		1	52	> 3			
confirmation	0.000	0	0	≤ 3	The degree of flexibility of operational liquidity	23	
		1	52	> 3			
confirmation	0.000	0.02	1	≤ 3	The state of the structure of internal controls	24	
		0.98	51	> 3			
confirmation	0.000	0.02	1	≤ 3	The status of the internal audit committee	25	
		0.98	51	> 3			
confirmation	0.000	0.02	1	≤ 3	Health and disclosure of transactions with related parties	26	
		0.98	51	> 3			
confirmation	0.000	0	0	≤ 3	Composition of ownership structure and their relationship with management	27	
		1	52	> 3			
confirmation	0.000	0.02	1	≤ 3	Mutual participation of directors and board of directors among partnerships	28	
		0.98	51	> 3			
confirmation	0.000	0	0	≤ 3	The extent of intragroup transactions among partnerships	29	Complexity of the group
		1	52	> 3			
confirmation	0.000	0	0	≤ 3	Participation of several companies and financial institutions in the portfolio of the holding	30	
		1	52	> 3			
confirmation	0.000	0	0	≤ 3	The degree of penetration and impact on investment	31	The impact and influence of the company
		1	52	> 3			
confirmation	0.000	0	0	≤ 3	The probability of occurrence of unusual events	32	Risk of unusual events
		1	52	> 3			
confirmation	0.000	0	0	≤ 3	Investigating the financial ability and strategic motivations of company owners when challenges occur	33	Support of owners and shareholders
		1	52	> 3			

Result	Significance level	Probability of observation	Number of views	group	Item description	Row	Factor class
confirmation	0.000	0	0	<= 3	The share of financing amount from the group	34	
		1	52	> 3			

13. Friedman Test

The results of the Friedman test are presented as follows:

Considering that the significance level is less than 5%, the indicators do not have the same priority in

determining the credit rating, and the higher the average rating of each indicator, the more important it is in determining the credit rating. The ranking results of the Friedman test are presented in the following table:

Table 6. The results of comparing the level of importance of investment industry indicators using Friedman's test

52	Number
758/306	The value of the chi-square statistic
33	Degrees of freedom
0.0000	Significance level

Table 7. The results of the Friedman test of investment industry variables

rank	Item description	Row	rank	Item description	Row
63/18	The degree of flexibility of operational liquidity	18	92/19	Investment liquidity strategy	1
53/18	Geographical diversity in investments	19	91/19	Ratio of operating cash flow to debt	2
30/18	Presence in foreign exchange industries	20	91/19	Participation of several companies and financial institutions in the portfolio of the holding	3
29/18	Ratio of operating profit to interest expense	21	63/19	The degree of penetration and impact on investment	4
03/18	Mutual participation of directors and board of directors among partnerships	22	62/19	cash ratio	5
96/17	Business diversity in investments	23	59/19	Investment portfolio transparency	6
17/95	The extent of intragroup transactions among partnerships	24	55/19	Asset concentration	7
72/17	Health and disclosure of transactions with related parties	25	27/19	Investigating the financial ability and strategic motivations of company owners when challenges occur	8
04/17	Debt to registered capital ratio	26	25/19	The degree of control and influence over investments	9
37/16	Conservative and transparent investment	27	25/19	The probability of occurrence of unusual events	10
08/15	debt ratio	28	24/19	The market value of the assets of the companies subject to investment	11
85/14	The state of the structure of internal controls	29	96/18	Proprietary ratio	12
76/14	Dividend policy or capital increase	30	18/95	Total operating cash flow and interest expense divided by interest expense	13
28/12	Responding to competitive challenges and legal pressures	31	66/18	Composition of ownership structure and their relationship with management	14
57/11	The status of the internal audit committee	32	63/18	Financial leverage based on estimated market value	15
54/10	The share of financing amount from the group	33	63/18	Having debt capacity	16
52/9	Having tax exemptions	34	63/18	Private or public or public ownership	17

14. Discussion and Conclusion

In developed and advanced countries, it can be seen that most of these countries have rating institutions at

the national level, which model and determine according to the conditions and characteristics specific to the same country and with special attention to the conditions governing the industry of the rated

company. The coefficient of influence of each of the mentioned factors in determining the credit rating of companies. For example, S&P Group, which is considered the largest business services group in Greece, started working in 2007 and based on rating models based on quantitative variables derived from empirical observations and field research, as well as additional information on qualitative variables. The credit of economic units is based on the conditions and characteristics of the country, industry and their operational environment. (S&P Group, 2011). These institutions mainly use a combination of quantitative information and qualitative information, which have assigned more weight to quantitative information. Quantitative information includes financial ratios and capital structure and accounting methods, by examining them, it can be seen that accounting knowledge is the main pillar of quantitative information in credit rating models of companies. In terms of qualitative information, factors such as the risk governing the country's conditions, the operational environment, the risk governing the market and industry conditions, the risks related to import and export restrictions, and currency issues have been considered.

As mentioned, the most important advantage and superiority of the world's leading rating agencies, including Moody's rating agency, is that for the credit rating of companies, each company is examined according to the characteristics specific to its own industry, and it has different models for each industry. This is despite the fact that the industry of credit rating of companies in Iran is very new and young and few institutions are active in this field, fundamental flaws can be introduced to their operation and credit rating models. The few companies that are working as credit rating agencies in Iran, because they lack the knowledge of credit rating modeling, they are working as a subsidiary and affiliated company of prominent foreign rating agencies, and the methodology, model and They have inherited their performance basis for evaluating economic units from foreign rating institutions. For example, Pars Kian credit rating agency in Iran is affiliated to Pakistan Credit Rating Agency (PAKRA). Pakra Institute is the first credit rating institute established in Pakistan in 1994 and one of its major shareholders is Fitch Institute. Also, Burhan Credit Rating Institute is operating in Iran based on memorandums with the American Duff

Credit Rating Institute, the Japanese Credit Rating Institute and the Malaysian Ram Credit Rating Institute, and based on their expertise, experience and knowledge, they carry out credit evaluation of economic units. Iranian. The credit rating models used by these institutions are based on the knowledge and experience of foreign rating institutions, which have been determined and explained according to the characteristics and conditions governing the same countries. Regarding the credit rating models of companies and predicting their bankruptcy and helplessness, by examining the previous researches mentioned below, we find that the primary models presented by researchers such as Altman, Springit and Zimsky are possible because they were designed in other economic environments. In Iran's economic environment, they do not provide correct forecasts and there is a need for adjustments in them (Qadiri, Gholampour and Nasirzadeh, 2018; Kurdestani, 2013; Khajovi, 2011; Shahrokhi and Mashaikh, 2015). Based on this, it can be claimed that Iranian credit rating institutions that use foreign credit rating knowledge and models to evaluate Iranian economic units may not provide a correct forecast and we need to rate the companies based on the prevailing conditions. The industry itself will be examined and credit rating. For example, the economic and political conditions governing the companies active in the Iranian petrochemical industry are different from the economic and political conditions of the petrochemical industry in other countries, and it cannot be expected that the credit rating models designed in other environments will be used in the Iranian environment. Therefore, the current research aims to take an effective and efficient action in creating information transparency and credit rating of companies in a specific industry by determining the credit rating model of companies in a specific industry based on the characteristics of that industry. On the other hand, considering the systematic and unsystematic risks in the Iranian capital market and recent developments, the role of investment companies in the capital market is of particular importance. This means that the aforementioned companies, as professionals and investment managers in the field of capital market, can provide a great help in resolving the uncertainties regarding the future of Iran's capital market in the future with a professional perspective and proper planning. Because one of their most important tasks is

to receive market information about the conditions governing the society's economy, analyze and process it, and finally make logical transactions in the stock market. This issue can somehow attract the attention of other institutions active in the market and increase the efficiency of capital market activities. Therefore, considering the high importance of investment companies in Iran, the purpose of this research is to determine the credit rating model of companies active in the investment industry in Iran.

- Classification of Investment Strategy Factors

In this category of factors, the investment liquidity strategy variable is considered the most important factor in the investment industry, because investments that have the possibility of slow and long-term liquidity can face the company with fundamental limitations when the company is in dire need of liquidity. Therefore, a company that follows the strategy of liquidity of investments has a higher credit rating from the perspective of investment strategies. The second most important variable in this category of factors is the variable of control and influence on investments. When the company invests in issues that can have control and influence on strategic decisions and its direction, it can benefit more from the investment and finally have a higher credit rating. The variable of presence in foreign exchange industries is also considered as one of the important factors in this industry. Because investing in export-oriented and currency-earning industries, including petrochemicals and basic metal mines, can protect the company's assets from the risk of currency fluctuations and even turn it into a growth opportunity. Therefore, a company that has targeted export-oriented and foreign exchange industries in its investment strategies can be said to have a higher credit rating. The amount of disclosure of the details of the investments made along with their subjects in the notes of the financial statements, as well as the conservatism of the investments, indicate the transparency and health of the company's investments, which can affect the company's credit rating.

- Classification of Group Complexity Factors

The participation variable of several companies and financial institutions in the holding's stock portfolio is the most important variable of this group of factors. These variable states whether the company has

invested alone or in a major way in any subject it has invested in, or whether it has participated in that investment subject with other investment companies and financial institutions. This issue can express the level of complexity of the group of investors and determine the credit rating of the company from the perspective of the complexity factors of the group. Also, the variable of mutual participation of managers and board of directors among partnerships is also one of the important variables in this industry.

- Classification of Asset Quality Factors

Some investment companies try to create a lack of transparency for the company's stakeholders by creating a lack of transparency in the disclosure of investment information, but creating transparency of the investment portfolio and providing the details and dimensions of the investment is considered as one of the important variables in determining the credit rating of investment companies. . Also, the diversity of investments, including the geographical diversity of investments, the diversity of businesses in investments, and the lack of concentration of assets and investments are among the most important factors affecting the credit rating of investment companies from the perspective of asset quality. The variable of the amount of intra-group transactions among partnerships is also among the variables that have distinguished the ranking of this industry from other industries. In other words, the amount of transactions within the group can increase the complexity of the group and affect the credit rating of the investment company from the perspective of the complexity of the group.

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