



Determining a model to improve the performance of capital market specialists in the Tehran Stock Exchange using the fuzzy ANP method

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ABSTRACT

This research tries to determine and prioritize the effective factors on improving the performance of capital market specialists in Tehran Stock Exchange by studying market timing and strategy for investors to make correct and responsible decisions regarding their capital. The method of conducting this research is based on the results, practical; Objective-based, descriptive; Based on the amount of researcher control, non-experimental; based on data type, quantitative; And based on the research method, it is retrospective. The method of sampling was a purposeful judgment method among experts in the capital market, and finally 15 people were selected. In this research, the test of the normality of the distribution of the factors was done by using the absolute value of the skewness and kurtosis of the variables, and the results indicated the normality of the data. Bartlett's test (KMO) was used to check the adequacy of the sample size. Also, the Pearson correlation coefficient test was used for Investigating the type and degree of correlation between research variables has been used. According to the results, the prioritization of the effective criteria for determining a model for improving the performance of Tehran Stock Exchange capital market specialists was shown as follows: 1. Timing 2. Timing strategies and it was determined that all the timing components are effective on the performance of capital market specialists and in the comparison of the market timing strategy models, seasonal and date timing strategy, compared to the two strategies of moving average and Sai seasonal timing. Harding is more effective; But compared to Mark Walker's seasonal timing strategies and Hirsch's best six months timing (B.S.M), it has less efficiency.

Keywords: market timing, capital market experts, multi-criteria decision making, scenario design, "Fuzzy ANP

1. Introduction

The indicators considered in this research to improve financial performance include market timing and investment strategy. Considering that bourse companies must use appropriate investment strategies to improve their performance, they can formulate the best investment strategy for the company by using the intellectual capital of the organization so that the financial performance of the company grows. The ideal goal of the financial strategy, which is covered by the overall strategic goals of the organization, is to maintain and increase the long-term profitability of the enterprise and access to a sustainable competitive advantage (Abadi, 2010). Making a decision about investment (capital budgeting) makes the company's strategic direction clear, because it is necessary to consider expenses or costs first and then proceed to produce a new product or provide a new service or enter new markets (A'rabi and Razmjoei, 2008). Investment strategy is one of the subsets of financial strategy, which should be given special attention in companies, and with proper management and implementation, it will bring the company to the highest level of financial performance and lead to long-term profitability of the economic enterprise and achieve a sustainable competitive advantage. In previous researches, few studies have been done in the field of investment strategy and its effect on the financial performance of companies. In this study, two indicators of business risk and investment return have been used to measure the investment strategy. In recent years, financial strategy deals with the financial issues of the company and its strategic options and identifies and introduces the best actions in terms of their financial importance. Financial strategy basically includes funding strategies, investment strategies, profit distribution strategies, and working capital strategies. One of the investing problems is that investors start trading without a set of clear and specific rules and without having a trading strategy. They will not have much to succeed and it will not be easy. Having a disciplined approach to the market supports the investor against making decisions based solely on emotions and feelings, and inexperienced investors fall into the trap of overwhelming pressures that arise while investing. They jump from one investment to another and behave like a person who wants to chase two rabbits at the same time, either holding a losing position for a long time or they sell

the position of growth and winning ahead of time. They lose their patience and either gets greedy or after several failures, they get disappointed and leave the market and accept failure. The existence of research gaps to provide a model for improving the performance of capital market specialists through a trading strategy in the field of market timing, as well as related implementation methods to solve issues related to capital market timing, has been one of the reasons for conducting this research; In the way that in the past researches, a comprehensive look at the issue of market timing from the investor's point of view has not been done, and it can be considered as a necessity with an innovative view by identifying theories, patterns, methods and methods related to capital market timing strategies. A scientific perspective and presentation of a comprehensive model of market timing strategies in the form of executive methodology and scientific methodology using the combined method of multi-criteria decision-making, scenario design and fuzzy network analysis with the design of an applied trading system and the use of MATLAB software for implementation Creation in stock investment funds can be mentioned as the most important aspects of knowledge enhancement, novelty and innovation of research. This research aims to provide a comprehensive model for the development and improvement of capital market performance by studying the market timing and the strategy used by investors to make correct and responsible decisions for their capital and help the investor during the upward trends and prosperity. The market enters the market or exits the market by adopting a sell position and being in the cash position during wild bear markets.

Investment strategy

The term capital refers to long-term assets that are used in production, while a budget is a plan that shows a detailed description of anticipated inflows and outflows during a future period. Therefore, capital budget is a summary of planned investments in fixed assets and capital budgeting is the whole process of analyzing plans and deciding which one should be included in capital budgeting (Razmjoei, 2009).

From a general point of view, investing means using available money to get more money in the future. In other words, investment means postponing current consumption in order to achieve the possibility of more consumption in the future (Sharp et al., 1995).

One of the fundamental goals of managers is to maximize shareholder wealth in any decision they pursue. Investment decision is known as capital budgeting in financial theory and is one of the most important decisions of financial managers. Capital budgeting usually involves investing large amounts of money in long-term projects, and the time frame in which such investments are made is irreversible. Therefore, reasonable and acceptable methods seek to minimize the degree of error in making decisions that seek to maximize the wealth of shareholders (Toffer and Deco, 2015).

What most professors and academics consider as investment policy is more suitable for financial engineering. The results of technical engineering and marketing studies are processed to lead to a financial decision. This work is done in this way: after several processes, an investment solution is visualized. Estimates are made from actual cost, cash flow after tax deduction, useful life of its scrap value. Then its net present value is calculated using the adjusted discount rate, the contingent claim approach. If the calculated net present value is negative, the investment decision is rejected, and if the calculated net present value is positive, the corresponding option is added to the set of possible investment options. Then, as a part of possible investment options, it should be compared with other inconsistent investment options. In case of non-compliance with the investment logic, those possible investment options that is inconsistent, along with those that are not inconsistent but have a positive net present value, are selected for investment. If we follow the investment logic, we may need to solve a complex mathematical model to choose the best investment portfolio from investments with positive net present value. In the process, the role of the decision-maker in the field of investment has been reduced to that of a technician. It is generally a passive role in the company and the main job of the decision maker is to say yes or no. Participatory finance theory allows more than this. In the field of strategic investment, the financial manager can play an important role in determining the list of possible investments (A'rabi et al., 2005).

Strategic reference points of financial strategy

In order to identify the points of the main types of financial strategy and its dimensions using financial strategic reference points, we have an overview of the types of financial decisions expressed by different Pundits . According to many Pundits, financial strategy deals with capital provision and allocation policies (Zing and Len, 2005; Pandey, 1999; Pierce and Robinson, 1998; David, 1999; Ming Hai, 2001; Bandar and Ward, 2005). Therefore, the two main tasks of financial managers are the allocation of funds (in short, the investment decision) and the acquisition of funds (in short, the financing decision). Also, many Pundits believe that the structure of the financial strategy consists of three related decisions, which in addition to the above two decisions, also includes the decision of profit sharing (David, 2014; Novo, 2011; Van Horn, 1982; Hunger and Willen, 2001; Bandar and Ward, 2005; Pandey, 1999; Pearce and Robinson, 1998). The profit sharing decision determines the ratio of dividend income to shareholders and the ratio of accumulated profit and its reinvestment in the company. Therefore, profit sharing is related to accumulated profit and is a part of financing decisions. Therefore, increasing the profit sharing by the company increases the need for financing from other methods and vice versa. There are experts who believe that in addition to the above three financial decisions, there is a fourth decision, which is the decisions related to working capital (Pandy, 1999; Pierce and Robinson, 1998; Japan Productivity Center, 1992; Chandara, 1986). In fact, decisions related to working capital are a part of investment and financing decisions, and its purpose is to make decisions about current assets along with current liabilities that form the upper part of the balance sheet (Abadi, 2010).

Financial Pundits believe that these decisions are interrelated and jointly affect the company's stock market value by risk and return; So that any action that has a higher risk will also require a higher return (Novo, 2012; Pandey, 1999; Prasana, 1986). Therefore, by examining the two dimensions of overall return and overall risk, analyzing and pondering the material of financial experts, it is clear that financial decisions are referred to as reference points for financial strategic implementation, which is shown in figure number one below. (Abadi, 2009)

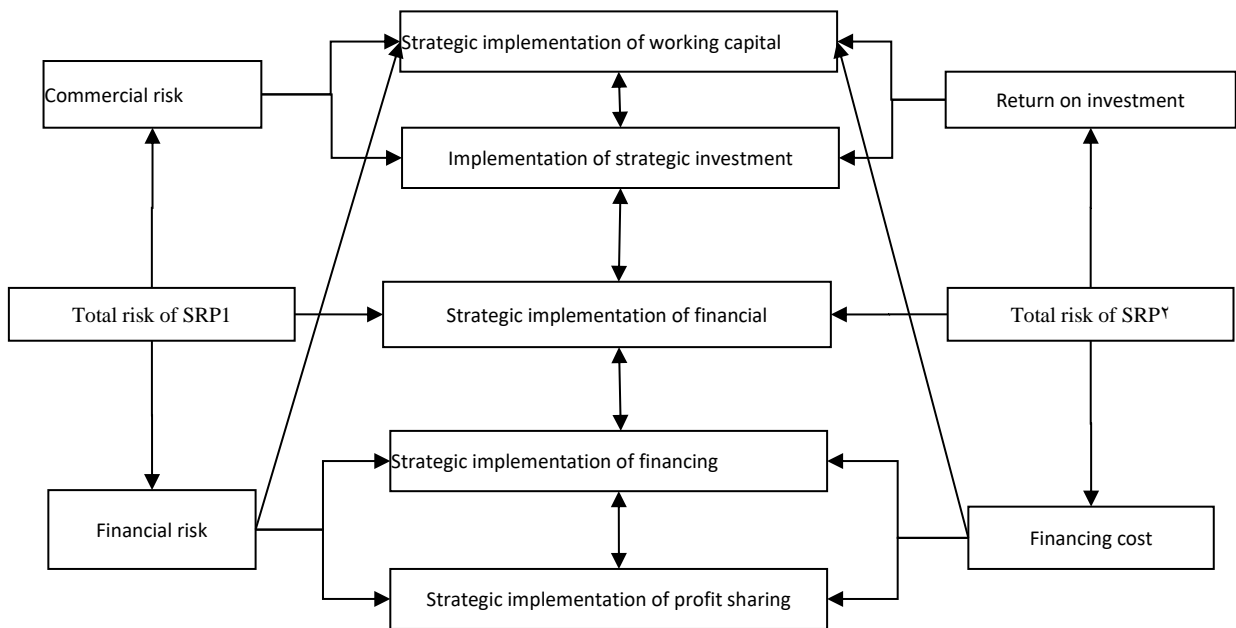


Figure 1: Financial strategic reference points (Abadi, 2009)

Investment strategy reference points

Total risk consists of two parts, which are business risk and financial risk. In investment decisions, the dimensions that are taken into consideration are business risk and investment return, which are referred

to as strategic investment reference points, and from the combination of these two dimensions, four types of investment strategies are obtained, which are shown in figure number two (Abadi, ۲۰۱۰).

	Low	Commercial Risk	High
Return on investment High	Type Three : Production: replacement of existing assets in order to increase quality. Marketing: investing in advertising and sales promotion in order to increase quality. Human resources: investing in human resources in order to promote quality. Research and development (R&D): Investing in R&D in order to increase quality.		Type Four: Production: Strategic investments. Marketing: investing in advertising and sales promotion in order to expand markets. Human resources: investing in human resources in order to expand markets. Research and development (R&D): Investing in R&D in order to expand markets.
Low	Type one : Production: replacement of existing assets in order to reduce costs. Marketing: investing in advertising and sales promotion in order to maintain market share. Human resources: investing in human resources in order to reduce waste and increase productivity. Research and development (R&D): Investing in R&D in order to reduce costs.		Type Two : Production: investment to develop production capacity. Marketing: investing in advertising and sales promotion in order to maintain market share. Human resources: investing in human resources in order to Capacity development. Research and development (R&D): Investing in R&D in order to Market growth.

Figure 2: Types of investment strategy based on strategic reference points (A'rabi, ۲۰۱۰)
Investment strategy model based on strategic reference points

Figure 3 show the model of investment strategies based on strategic reference points.

		Internal environment		External environment	
		Low	High	Low	High
intense The degree of control	flexible	Type Three Investing in functional units in order to increase quality		Type Four Investing in functional units in order to expand the market- new product	
	return	Type one Investing in functional units in order to reduce costs		Type Two Investing in functional units in order to expand the market- current product	
	Low				

Figure 3: Investment strategies model based on strategic reference points(A'rabi, ٢٠١٠)

Financial performance

Performance evaluation is one of the basic and necessary measures in the planning and targeting of managers, in fact, evaluation not only helps managers in choosing strategy and financial structure, but also shows how strategies and financial structure affect the stock market value. Therefore, measuring the performance of companies is an overall assessment of the financial situation and operation results in order to make rational decisions. Emphasis on the issue of evaluating and measuring performance can be seen from the distant past and at the same time as the formation of the first human societies. Managers and owners provide resources for the organization's activities, and on the other hand, organizational customers have expectations and demands. An organization will be successful when it can meet the demands of its stakeholders and cover the organizational goals with the correct use of resources. For this reason, the main mission of any performance evaluation system is to measure the success rate of the organization in achieving its goals.

Financial performance and performance evaluation methods

Some believe that there is no ideal index for measuring the performance of companies and there are different methods for measuring the performance and determining the value of the company. Each of them has fundamental disadvantages and if these methods are considered as a criterion for measuring the performance and determining the value of the company, certainly will not lead to determining the

real value of the company. Nevertheless, the evaluation of the company's performance is considered a necessity, and to do it, the accepted criteria should be used, which, as much as possible, takes into account different aspects in terms of limitations in activities and the possibility of benefiting from the facilities.

Financial performance evaluation models

During recent years, a lot of research has been done to achieve the appropriate criteria to evaluate the performance of companies and to make sure that the company's movement is aligned with the interests of actual investors and to provide a basis for making economic decisions of potential investors and creditors. The results obtained from these researches have presented four approaches regarding performance criteria as follows (Hejazi et al., 2012)

- Accounting approach: In this approach, from the figures included in the basic financial statements and the attached notes, components such as profit, profit per share, profit growth rate, operating cash flows, free cash flows, rate of return on assets and rate of return on equity to evaluate performance is used.
- Economic approach: based on this approach in which economic concepts are used, the performance of the business unit is evaluated by emphasizing the profitability of the company's assets and according to the rate of return and the cost of capital used. Economic added value, adjusted economic added value

and market added value are included in this group.

- **Integrated approach:** In this approach, a combination of accounting information and market information is used to evaluate performance, such as Q rate, Tobin and price-to-earnings ratios.
- **Financial management approach:** In accordance with this approach, financial management theories such as the pricing model of capital assets and the concepts of risk and return are often used. The main emphasis in this approach is on determining the additional return of each share.

Research background

Domestic background

A'rabi and Abedi (2010) examined an article titled the relationship between financial strategies, investment, financing, profit sharing and working capital with organizational performance. This paper presents a hybrid model for coordination between financial strategy and its subsystems, including investment strategy, financing strategy, profit sharing strategy and working capital strategy. In this research, based on the hybrid model, financial strategies and its subsystems were typified. Then the coordination between different types of the mentioned strategies was investigated. The results show that the performance of the company when the type of financial strategy of the company is moderate and tends to take risks is more than when the type of financial strategy is moderate and tends to be risk averse. Also, the results show that in the years when the coordination between the elements of financial strategies is more, the performance of the company is also better.

Rahmani et al. (2009) in an article entitled the relationship between institutional ownership and stock liquidity use the characteristics of the number of buyers, the number of transactions, the number of trading days, the volume of transactions, the number of traded shares and the amount of daily value, under the title of the liquidity rating criterion.

Azadvar (2009) has conducted a research titled the relationship between investment opportunities and company performance. The findings and results of this research indicate that there is a positive relationship

between investment opportunities and company performance according to the indicators considered.

A'rabi et al. (2005) wrote an article titled Review and Classification of Financial Strategies. In this article, they examined financial theories and strategies and analyzed the role of these strategies in the formation of the company's strategy. They came to the conclusion that financial strategies are aspects of the company's strategy that are in the scope of financial management and include decisions regarding investment, financing of these investments and profit sharing policies. In evaluating and choosing different strategies in each of these three areas, different internal and external factors of the company should be considered. This can help to know what financial strategies to use in different environmental conditions and in the presence of specific internal factors.

Namazi and Khajovi (2003), in an article called the usefulness of accounting variables in predicting the systematic risk of companies listed in the Tehran Stock Exchange, used a sequential selection method, called regression elimination, to determine the predictor variables of systematic risk. In this research, seven variables of net profit to sales ratio, financial leverage, operational leverage, profit variability coefficient, company size, sales growth and instantaneous ratio were identified as predictive factors.

Foreign background

Vengai Marawi and Margaretha Vander Pol (2012) conducted a similar survey on the use of capital budgeting methods in South Africa based on 132 responses from 500 companies. Their findings show that large companies tend to use more complex capital budgeting methods such as discounted cash flow techniques.

Marasevich and Babik (2011) in an article entitled "Two-stage multi-indicator model for choosing the optimal stock portfolio" used the idea of two-level analysis in Al-Badawi's article and used it with development in the compatibility of preference functions and also changed. They complete the combination of effective characteristics and implement it for the Croatian stock market. In this article, the authors use eight effective characteristics to compare industries and nine effective characteristics to compare companies.

Abor and Beckpin (2010) studied the effect of investment growth and financing on the policy of cash

payment of interest in 34 countries during the period of 1996 to 2006. The results showed that there is a negative and significant relationship between investment growth and the policy of cash payment of interest.

Kadoya et al.(2008), evaluated contrasting investment strategies using the technique of data envelopment analysis and while introducing traditional investment evaluation criteria such as book value to market price, using two old indices and data envelopment analysis for Evaluation is considered useful.

Al-Badawi and his colleagues (2007) in their article entitled "Decision making in stock transactions using the ANP method" uses a two-level model for ranking and selecting stocks of successful companies. In this article, firstly, the listed industries are compared by considering 13 basic characteristics and using the ANP method, and the best industries are selected. In the next stage, the companies classified in the top industries are evaluated according to 23 basic criteria and the selection is made among them.

Research methodology

The current research is applied in terms of purpose and descriptive and correlational in terms of data collection and analysis. In the current research, the implementation model of the multi-indicator decision-making and scenario analysis method is used. The appropriate multi-criteria decision making method was used to analyze the results of the fuzzy ANP method. In this expert system, the most suitable method is selected using a decision tree. This decision tree is designed according to the required criteria, and in order to identify valid methods for the decision making problem. Based on this, questions are asked to the user about the mandatory criteria and according to the answers received, the method or methods that meet these criteria are determined. In order to study the literature of the subject and examine the background of the research, the library method such as books, theses, internet and Persian and foreign articles were used, and the data and information of the research was done using MATLAB software. And by using the Delphi method, 15 experts and consultants of the mutual fund have been asked to cooperate with it in order to determine the trading system of the fund in the future period. For this purpose, it was announced to each of them that by referring to the Ayandeneqar.ir website,

they should announce their evaluation about the contents of the published documents. Also, in this site, in order to determine the possibility of changes in the effective factors, a mechanism for implementing the Delphi process has been considered. The spatial scope of the research is Tehran Stock Exchange Organization and the time scope of this research is from the beginning of 2010 to the end of 2018. The statistical population related to this research is all mutual investment funds active in the Tehran Stock Exchange that are currently operating.

Data analysis methods

Data analysis will be done in the following six sections:

step one - Feasibility of implementing the proposed trading system in the Tehran stock market: 15 experts and consultants of a mutual stock investment fund have been asked to cooperate in order to determine the trading system of the fund in the future period. At this stage, some steps were taken so that, as a result of specialist evaluations, the Ayandeneqar software was introduced for the conditions.

The second step - Selecting successful industries: in this stage, the evaluations are related to the following three main issues:

Probability of noticeable changes in the effective factors: The matrix of the final results of the estimates in the Delphi process is as follows.

Relative importance of effective driving factors: The matrix of the results of the evaluations is as follows. In this matrix, the number of experts who evaluated the driving factor in each value category is determined.

Evaluations of industries in connection with positive changes in effective driving factors, in order to create a reference matrix: In order to evaluate industries in connection with effective factors, the following question must be answered.

The third step - Selecting successful companies : the evaluation of specialists related to the following two main topics is extracted from the database of the ayandeneqar.ir website and the results are specified as the input of Ayandeneqar software in the company. The evaluations are related to the following two main topics:

Determining the level of risk tolerance of fund managers: In the matrix below, the evaluation of fund

managers is determined by the relative importance of three parameters: return, risk and liquidity.

Determining the relative importance of the characteristics of the three sub-models of expected return, risk and liquidity: In the following matrix, the evaluation of the fund's experts shows the relative importance of the characteristics in the sub-model of expected return.

In the following matrix, the evaluation of the fund's experts shows the relative importance of the characteristics in the risk sub-model.

In the following matrix, the evaluation of the fund's experts shows the relative importance of the characteristics in the liquidity sub-model.

The evaluation results of the companies classified in successful industries by Ayandehnagar software: The results of the evaluation of the companies classified into two successful industries by Ayandehnagar software are obtained as follows. In this section, industries have been selected that have a positive score.

Table 1: Probability matrix of noticeable directional changes in effective factors

driving factor	reducing	stability	Increasing
exchange rate	0.7	0.1	0.2
International sanctions	0.1	0.3	0.6
American economic growth	0.3	0.2	0.5
Real estate construction process	0.4	0.2	0.4
Effective government support	0.6	0.2	0.2
Bank interest rate	0.4	0.2	0.4

Table 2: Matrix of evaluations related to the relative importance of effective driving factors

driving factor	Very low	low	medium	high	Very high
exchange rate	0	0	3	10	2
International sanctions	0	1	5	8	1
American economic growth	0	0	3	8	4
Effective government support	0	0	2	9	4

Table 3: Evaluation of six industries in noticeable positive changes in the exchange rate

driving factor	Very low	low	medium	high	Very high
basic metals	0	0	1	6	8
Banks	0	2	10	3	0
Telecommunications	0	2	11	2	0
Extraction of metal minerals	0	0	4	6	5
Cars and parts	7	8	0	0	0
Multidisciplinary industry	0	0	5	5	5

Table 4: Evaluation of six industries in noticeable positive changes in international sanctions

International sanctions	Very low	low	medium	high	Very high
basic metals	0	0	1	6	8
Banks	0	2	10	3	0
Telecommunications	0	2	11	2	0
Extraction of metal minerals	0	0	4	6	5
Cars and parts	7	8	0	0	0
Multidisciplinary industry	0	0	5	5	5

Table 5: Evaluation of the six industries in noticeable positive changes in the American economic growth

American economic growth	Very low	low	medium	high	Very high
basic metals	0	0	1	6	8
Banks	0	2	10	3	0
Telecommunications	0	2	11	2	0
Extraction of metal minerals	0	0	4	6	5
Cars and parts	7	8	0	0	0
Multidisciplinary industry	0	0	5	5	5

Table 6: Evaluation of six industries in noticeable positive changes in effective government support

Effective government support	Very low	low	medium	high	Very high
basic metals	0	0	1	6	8
Banks	0	2	10	3	0
Telecommunications	0	2	11	2	0
Extraction of metal minerals	0	0	4	6	5
Cars and parts	7	8	0	0	0
Multidisciplinary industry	0	0	5	5	5

• Evaluation results of six industries by Aindenagar software.

Table 7: Evaluation results of six industries by Aindenagar software

3	4	2	5	4	1	industry rank
Multi-discipline	car	Mineral extraction	telecommunications	bank	multidisciplinary	Industry name
-0.071	-0.081	0.124	-0.105	-0.103	0.237	point
0	0	0.4	0	0	0.6	Amount of allocation

Table 8: Evaluation of managers to determine the level of risk tolerance

	Very low	low	medium	high	Very high
Risk	0	0	1	6	8
Liquidity	0	2	10	3	0
Returns	0	0	2	8	5

Table 9: Determining the relative importance of the characteristics under the expected return model

Expected return	Very low	low	medium	high	Very high
current ratio	0	1	4	6	4
instantaneous ratio	0	0	5	7	3
Special profit on sale	0	0	0	7	8
Net profit on sale	0	0	0	5	10
Inventory turnover	0	0	3	4	8
Fixed asset turnover	0	0	8	4	3
return on assets	0	0	1	6	8
Return on equity	0	0	3	6	6
Price to profit	0	0	5	5	5
Expected return	0	1	4	6	4

Table 10: Determining the relative importance of the following characteristics of the risk model

risk	Very low	low	medium	high	Very high
Net profit on sale	0	0	4	6	5
Financial leverage	0	0	0	5	10
current ratio	0	0	1	6	8
Profit variability coefficient	0	0	4	5	6
Company capital	0	0	7	5	3
Sales growth	0	0	5	4	6
instantaneous ratio	0	0	2	6	7
Fixed asset turnover	0	0	4	5	6
Interest coverage ratio	0	0	2	6	7

Table 11: Determining the relative importance of the characteristics under the liquidity model

Liquidity	Very low	low	medium	high	Very high
Average daily share value	1	4	5	3	2
Turnover	0	1	6	5	3
Number of shares traded	0	1	5	5	4
Number of trading days	0	0	0	5	10
Number of transactions	0	0	1	6	8
Number of buyers	0	0	4	5	6

Table 12: The output of Ayandehnagar software for the top eight companies in the metal mineral extraction industry

company name	Chador-maloe	Gol Gohar	Development of zinc mines	Damavand mineral	Lead and metal mining	Bafagh Mine	Bama	magnesium mine
rank	1.941	3.551	3.568	3.941	5.178	5.627	6.000	6.195
risk score	0.065	0.069	-0.050	0.180	0.024	-0.051	-0.111	-0.126
Return score	0.258	0.304	0.143	-0.337	0.211	-0.193	-0.121	-0.265
Liquidity score	0.079	-0.013	0.000	-0.013	-0.013	-0.013	-0.013	-0.013
Amount of allocation	0.5	0.3	0.2	0	0	0	0	0

Table 13: Output of Ayandehnagar software for the top eight companies in the basic metals industry

company name	National Copper Industries	Calcimine	Mineral processing	Lead and metal mining	Yazd alloy steel	Iranian Ferrosilis	Alumrad	Amirkabir Steel
rank	2.000	5.059	5.076	6.492	6.762	7.449	9.551	10.330
risk score	0.214	0.143	0.173	0.074	0.083	0.181	0.029	0.219
Return score	0.366	0.292	0.023	0.320	0.002	-0.068	0.261	-0.296
Liquidity score	0.178	0.075	0.188	0.036	0.152	0.128	-0.011	0.103
Amount of allocation	0.5	0.2	0.3	0	0	0	0	0

The fourth step - Technical analysis execution: The input of the technical analysis module is the names of the successful companies specified in the company selection module. When calling this module, the latest data in the price text files are checked for buy and sell signals caused by double long-term moving average, double short-term moving average and RSI indicators, and if there is a warning in the share price of a company, the name of that company and the warning indicator symbol are displayed in a table. Also, by clicking on the name of one of the companies included in this module in the list menu, you can see price charts, double long-term moving average, double short-term moving average and its RSI. These two possibilities help the user to make a decision to make a transaction. The text files of the prices used in this module are the outputs of the Rahavarad Novin

software. Therefore, by updating the text files, new charts and alerts are created for the latest data. The acceptable format for the Futurist software is as follows.

The fifth step - Analyzing the sensitivity of the model to the parameters : In the previous part, for the hypothetical scenario, the model was solved and its results were shown. The hypothetical scenario includes specialist evaluations of model parameters at two levels of industries and companies. Now, in this part, the sensitivity of the results of the scoring and ranking systems to the values of the parameters at the level of industries and companies are examined in such a way that by changing the value of one parameter, the changes in the results of the model as well as the rest of the parameters are evaluated.

Table 14: Acceptable format for "Ayandenagar" software in the technical analysis section

<Openint>	<Vol>	<Close>	<Low>	<High>	<Open>	<TIME>	<DTYYYYMMDD>	<Per>	<Ticker>
0	283781	567.53	563.11	573.87	570.88	0	20040119	d	SarMelli

Analysis of the effect of changing the weight of the effective driving characteristics

In the defined hypothetical scenario, four variables of exchange rate, the trend of international sanctions, the economic growth of the United States and effective government support were selected as the characteristics of the effective stimulus in the industry model. Then, the values of the relative importance of

the characteristics were calculated using specialist evaluations and the model was solved with these values, and finally the industry score was obtained. Now, we want to examine the changes in the scores of industries by changing the weight values of the characteristics. Since the algebraic sum of the weight of the characteristics is equal to one, a change in the weight of one characteristic causes a change in the

weight of the rest of the criteria. Therefore, the weight of the characteristics in this case should be re-allocated. Suppose a δ_1 change is considered for the weight of the first feature, so the new weight $w_1^* = w_1 - \delta_1$ will be for the first feature. After applying the change, the weights of the characteristics should be normalized again; the normalized weights are obtained according to the set of relations below.

$$w_1 = \frac{w_1^*}{w_1^* + w_2 + w_3 + w_4}$$

After changing the weight of each criteria and solving the model, the answer is obtained in Table 15. Such a table was also prepared for the other variables.

In order to check the accuracy of the results, it is necessary to pay attention to the mechanism of solving the model. The positive reference matrix is a comparison of the behavior of industries against the significant increase of the driving factors, and the negative reference matrix is defined in opposite conditions to the positive matrix. Now, if we obtain the difference in the values of the corresponding amounts in the two matrices, we can identify the alignment of the industries' behavior with the effective

factors. In this way, the industry is aligned with the driving factor if a positive number is obtained from the difference of the positive and negative reference matrix for that factor. This issue has shown itself in the process of the obtained results in such a way that by changing the factors in the tables, the same behavior is observed in the case of industries that are aligned with each other. In order to be able to check the results, the difference matrix is given in Table 16.

Analysis of the effect of changing the probability of directional changes

In the industry selection model, by examining the probability of changes in the effective factors, the effective driving factors are identified. For this purpose, the Delphi process and the opinions of experts are used, then according to the results of the Delphi process, the industry selection model is solved and scoring is done. Now, we want to examine the sensitivity of the selection model to the possibility of changes in the factors in such a way that by applying changes in the probability of significant increase and decrease in the factors, we obtain the points of the industries and analyze the result. An example of this analysis can be seen in Table 17.

Table 15: Changes in the answer to changes in the weight of the exchange rate standard

Multi-discipline	car	Mineral extraction	telecommunications	bank	Basic metals	
-0.04299	-0.15164	0.153988	-0.13795	-0.10269	0.281276	-0.1
-0.04921	-0.13649	0.14764	-0.13091	-0.1028	0.271767	-0.05
-0.07159	-0.08196	0.124786	-0.10554	-0.10322	0.237531	0.242
-0.08062	-0.05996	0.115564	-0.09531	-0.10339	0.223717	+0.05
-0.09065	-0.03552	0.105318	-0.08394	-0.10358	0.208368	+0.1

Table 16: Difference matrix of positive and negative references

	exchange rate	International sanctions	American economic growth	construction process	Effective government support	Bank interest rate
basic metals	0.687879	-0.69565	0.318033	0	0.189091	0
Bank	0.008467	-0.18478	-0.05948	0	-0.53333	0
Telecommunications	-0.01381	-0.04348	-0.54286	0	-0.43879	0
Extraction of minerals	0.475045	-0.64783	0.243326	0	0.106667	0
Car	-0.7	0.665	-0.4815	0	0.290909	0
Multidisciplinary	0.452763	0.191522	0.10726	0	-0.12121	0

Table 17: Changes in the answer to changes in the probability of an increase in the exchange rate

Multi-discipline	Car	Mineral extraction	telecommunications	bank	Basic metals	decrease	increase
-0.07159	-0.08196	0.124786	-0.10554	-0.10322	0.237531	0.2	0.7

Multi-discipline	Car	Mineral extraction	telecommunications	bank	Basic metals	decrease	increase
-0.08126	-0.0336	0.095768	-0.07652	-0.09355	0.189169	0.3	0.6
-0.09093	0.014761	0.066751	-0.04751	-0.08388	0.140806	0.4	0.5
-0.1006	0.063123	0.037733	-0.01849	-0.07421	0.092443	0.5	0.4
-0.11028	0.111486	0.008715	0.010529	-0.06453	0.044081	0.6	0.3
-0.11995	0.159849	-0.0203	0.039547	-0.05486	-0.00428	0.7	0.2

Analyzing the sensitivity of the company selection model to the parameters

In this part, we would like to examine the sensitivity of the result of the rating score of the companies to the level of risk tolerance of the investor. For this purpose, for each of the three parameters of risk, liquidity and expected return, we change the relative importance of the parameter in the model and get the results of the companies' scores. In this part, the sensitivity of the model to the investor's risk tolerance is shown for the metal mineral extraction industry by showing the percentage of changes in the rating score of the companies compared to the base state.

Since the algebraic sum of the relative importance of the parameters is equal to one, a change in the weight of one parameter causes a change in the weight of the rest of the parameters. Therefore, the weight of the parameters in this case should be re-allocated. After changing the weight of each parameter and solving the model, the answer (for example: as shown in Table 18) is obtained.

As can be seen, rating changes increase with increasing changes in risk tolerance.

The sixth step- Measuring the tendencies of capital market specialists : According to the mentioned basics, to measure the capital market experts we used the information of trading volume (TURN), dividend bonus ($PD - ND$), returns on the first day of initial public offerings (RIPO), Number of initial public offerings (NIPO) and issued shares of the company in total Issued capital is used by the corporation (S). Because in the emergence of each of the above indicators, different factors with different dimensions and in different areas are effective. Therefore, each of the propensity indices includes components related to

capital market specialists and not related to the propensities of capital market specialists, here, after obtaining the indices representing capital market specialists, using the method of principal component analysis (PCA), We obtain the structure of correlation of the variables with capital market specialists. The method of principal component analysis (PCA) reduces the dimensions of all observations based on the combined index of the classification of similar observations. In this method, the variables in a correlated multi-state space are summarized into a set of uncorrelated components, each of which is a linear combination of the original variable. The obtained uncorrelated components are called principal components (PC), which are obtained from the eigenvectors of the covariance matrix or the correlation matrix of the main variables. For the homogeneity of the data set, the variables of trading volume (TURN), dividend bonus (PD-ND), returns on the first day of initial public offerings (RIPO), the Number of initial public offerings (NIPO) and the issued shares of the company to the total capital issued by the company (S) annually and in the form of an index for the period from 2010 to 2018 and in soft EVIEWS software is used. Table No.19 shows the correlation matrix of the data set. The results of Bartlett's test in table number 20 show that the null hypothesis (absence of correlation) is rejected for the mentioned data set, that is, there is a strong relationship between the variables. According to this degree of correlation, by using the basic component analysis method by reducing the number of variables, a composite index called the Capital Market Experts Index can be presented.

Table 18: Changes in the answer to changes in the relative importance of the risk parameter

Average percentage of changes	The amount of change in the weight of the parameter	Chador-maloe	Gol Gohar	Development of zinc mines	Damavand mineral	Lead and metal mining	Bafagh Mine	Bama	magnesium mine
		1.94	3.55	3.57	3.94	5.18	5.63	6.00	6.19
0.017	+0.05	1.99	3.48	3.64	3.80	5.12	5.64	6.05	6.28

Average percentage of changes	The amount of change in the weight of the parameter	Chador-maloe	Gol Gohar	Development of zinc mines	Damavand mineral	Lead and metal mining	Bafagh Mine	Bama	magnesium mine
0.031	+0.1	2.04	3.41	3.67	3.70	5.07	5.66	6.09	6.36
0.048	+0.15	2.08	3.35	3.75	3.56	5.02	5.68	6.13	6.43

Table 19: Correlation matrix of propensity indices

		NIPO	RIPO	TURN	S	PD – ND
NIPO	Correlation	1/000	0/034	-0/236	-0/340	0/371
	Sig.(2-tailed)		0/447	0/173	0/083	0/065
RIPO	Correlation	0/034	1/000	0/443	0/272	0/117
	Sig.(2-tailed)	0/447		0/033	0/138	0/322
TURN	Correlation	-0/236	0/443	1/000	0/702	0/129
	Sig.(2-tailed)	0/173	0/033		0/001	0/304
S	Correlation	-0/340	0/272	0/702	1/000	-0/202
	Sig.(2-tailed)	0/083	0/138	0/001		0/210
PD – ND	Correlation	0/371	0/117	0/129	-0/202	1/000
	Sig.(2-tailed)	0/065	0/322	0/304	0/210	
NIPO	The number of initial deliveries in a year					
RIPO	The return on the first trading day of stocks that are traded for the first time on the stock exchange.					
TURN	The volume of transactions is the logarithm of ratio of the volume of traded shares at the end of each year to the average number of shares published in the stock exchange, which is equalized by the average volume of transactions at the end of the four quarters of the year.					
S	Issued shares of the company to the total capital issued by the company					
PD – ND	Dividend bonus which is equal to the difference between the average book value to market ratio of companies that are distributed their profits more than 0.09 percent of book value and companies that distributed their profits less than 0.09 percent of book value.					

Table 20: Bartlett's test matrix

KMO and Bartlett's Test	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	
	0/521
Bartlett's Test of Sphericity	Approx. Chi-Square
	20/093
	Df
	10
	Sig.
	0/028

Table 21 shows the eigen value and variance corresponding to the factors. In the Initial Eigenvalues column, the initial eigenvalues for each factor are estimated in the form of the total explained variance. The explained variance is a percentage of the total variance and a cumulative percentage. The eigenvalue of each factor is a ratio of the total variance of the variables that is explained by that factor. The eigenvalue can be calculated through the sum of the squared factor loadings of all the variables in that factor. Therefore, the eigenvalues show the exploratory importance of the factors in relation to the variables. If this value is low for a factor, it means that that factor had a small role in explaining the variance of the variables. In the Extraction sums of Squared

Loadings column, the explained variance of factors whose eigenvalues are greater than one are presented.

As can be seen, according to Table 22, the number of extractable components is equal to 2 and because the eigenvalue of the first component is greater than one and it tells about 41.887 percent of the dispersion of the data set; the first component is the best choice. In table number 22, the calculated coefficients of the variables for the first and second components are presented.

According to the results presented in the table 22, capital market specialists can be measured according to the linear combination of the first component, which is as follows:

$$\begin{aligned} \text{Sentiment} = & -0/(502\text{NIPO}_t) + 0/(536\text{RIPO}_t) \\ & + 0/(836\text{TURN}_t) \\ & + 0/(878\text{S}_t) - 0/(173 \text{ [PD} \\ & - \text{ND] } _t) \end{aligned}$$

The basis of the quantitative analysis of the present model in this article is based on the interpretation and analysis of the data collected from the community of experts under study, in the form of quantitative and qualitative analytical statistics. So that the data related to each of these variables, which was obtained from the answers of experts, was obtained by the qualitative method of fuzzy ANP in 2 stages, based on the principles of quantitative research method and fuzzy network analysis method (ANP) are analyzed.

Fuzzy network analysis (ANP): In the fuzzy ANP method, the geometric mean of experts' evaluation will be calculated first. Then, using the Gogos and Boucher method, the consistency of the matrices will be calculated at the level of each relationship between each component and its sub-components. For this purpose, according to the standard of the network analysis method, in order to achieve the goal of the present quantitative method, questionnaires of paired comparisons based on the proposed and confirmed model in the mentioned qualitative method were designed and distributed among experts. According to the fuzzy approach, verbal expressions and fuzzy numbers listed in table 23 have been used.

According to table number 24 , which was obtained through interviews and experts' opinions and is based on the approved components and sub-components of the fuzzy Delphi qualitative method, in the first step, in the path of obtaining the results of FANP, the average of paired comparisons of the studied criteria, is displayed in the form of table 25. In the table below, in the first step, the main components affecting the performance of capital market specialists have been examined and analyzed, and according to the standard of the fuzzy network analysis method, the fuzzy geometric mean of these components has been calculated.

Now, in the form of Table No. 26, the average comparisons in measuring the identified sub-criteria will be discussed:

In the third step, the geometric means calculated in the previous step are normalized. In this step, the values obtained from the second step are normalized. The

values Z_i for each matrix are normalized with the sum of Z_i .

$$\tilde{r}_{ij} = \tilde{w}_i = \frac{z_i}{\sum_{i=1}^n z_i}$$

If these normalized weights are related to the

comparison of options, it is called \tilde{r}_{ij} (the weight of the i-th option in relation to the j-th criterion) and if it is related to the comparison of criteria, it is called W_i . The following table shows these normalized values in the measurement of the 5 main components.

Fourth stage- De-fuzzing: In this step, the obtained fuzzy weights will be de-fuzzed according to the following relationship.

$$\text{Crisp}(\tilde{U}) = \frac{(u_l + 2 \times u_m + u_r)}{4}$$

In this equation $\tilde{U} = (u_l, u_m, u_r)$ and $\text{Crisp}(\tilde{U})$ is de-phased \tilde{U} . By performing these calculations, the final weights will be obtained respectively. In this way, according to the results of de-phasing the output of the third, it is possible to prioritize the main components and related sub-components.

Prioritizing the criteria and sub-criteria of the research model:

According to the results of the fuzzy network analysis calculations and the output obtained in the majority of the mentioned sections, the overall prioritization of the components in their main criteria group and at the level of the criteria as a whole can be displayed as follows (in order of highest priority to the lowest):

The above table shows the final weight matrix of the main criteria. According to the results, the order and prioritization of these criteria in influencing the effective components on determining a model for improving the performance of capital market specialists can be shown as follows (in order from the highest priority to the lowest) : 1. Timing dimension 2. Timing strategies .

Now that the final weights of the main research criteria have been determined, we will measure and evaluate the final weights of the sub-criteria related to each of these two components and the main criteria (Table 29):

Table 21: Percentage of variance and specific values of different factors

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	Variance%	Cumulative %	Total	Variance%	Cumulative %
1	2/094	41/877	41/877	2/094	41/877	41/877
2	1/434	28/673	70/549	1/434	28/673	70/549
3	0/699	13/986	84/535			
4	0/561	11/214	95/749			
5	0/213	4/251	100/000			

Extraction Method: Principal Component Analysis.

Table 22: Calculated coefficients of the first and second components for propensity indices

Component Matrix ^a	Component	NIPO	RIPO	TURN	S	PD – ND
		1	-0/502	0/536	0/868	0/878
	2	0/640	0/519	0/294	-0/081	0/813

Table 23: Qualitative words and their corresponding fuzzy numbers in the fuzzy network analysis method (FANP)

Verbal phrases	fuzzy number
Equal importance	(1,1,1)
Equal to weak importance	(1,1,5,1,5)
Weak significance	(1,2,2)
Weak to strong significance	(3,3,5,4)
Strong significance	(3,4,4,5)
Strong to very strong significance	(3,4,5,5)
Very strong importance	(5,5,5,6)
Very strong to absolute significance	(5,6,7)
Absolute importance	(5,7,9)

Table 24: The studied components and sub-components

NO	Component		Subcomponent	symbol
1	Capital market timing	A	change of month	a1
2			Vacation	a2
3			Election cycle	a3
4			Using the moving average strategy	a4
5	Timing strategy	B	Timing strategy using moving average	b1
6			Mark Walker's Seasonal Timing Strategy	b2
7			Cy Harding Seasonal Timing Strategy	b3
8			Hirsch's Best Six Month Timing Strategy	B4

Table 25: Average pairwise comparisons of the main criteria affecting the determination of a model for improving the performance of capital market specialists

Criteria	A			B			Geometric mean		
	l	m	u	l	m	u	l	m	u
A	1	1	1	0.9	1.1	1.1	1.2672	1.08848	1.477
B	0.9	1	1.09	1	1	1	1.0921	0.87322	1.907
	CR ^m =0.025 CR ^g =0.069 Compatible								

Table 26: Average pairwise comparisons of components and sub-components affecting the performance of specialists

omponents (indices)	Subcomponents	symbol	Geometric mean			Compatibil ity rate	compatibility status
			l	m	U		
Capital market timing (A)	change of month	a1	1.24187	1.42655	1.56086	CR _g =0.10 CR _m =0.03	Compatible
	Vacation	a2	1.29986	1.61835	2.13092		
	Election cycle	a3	1.16818	2.37278	2.52291		
	Using the moving average strategy	a4	1.31125	1.97692	1.89823		
Timing strategy (B)	Timing strategy using moving average	b1	1.12065	0.93140	1.44802	CR _g =0.033 CR _m =0.012	Compatible
	Mark Walker's Seasonal Timing Strategy	b2	1.20235	1.01912	2.02821		
	Cy Harding Seasonal Timing Strategy	b3	1.98606	1.47530	2.36785		
	Hirsch's Best Six Month Timing Strategy	B4	8.69328	8.05480	10.5177		

Table 27: Normalized geometric mean of main criteria

Criteria	symbol	Normalized geometric mean		
		l	M	u
timing	A	0.187835	0.18089	0.164538
Strategies	B	0.161872	0.145117	0.212523

Table 28: Matrix of final weights of criteria

component		The final deterministic weight of the components	Rank
Timing	A	0.279939	1
strategy	B	0.273991	2

Table 29- The final weight under the criteria of the 2 main components

Criteria	Symbol	Sub-components	De-phased final weights	The final internal rank of the subcomponents
timing	A1	change of month	0.122141	4
	A2	Vacation	0.143398	3
	A3	Election cycle	0.182118	1
	A4	Using the moving average strategy	0.155025	2
Timing strategy	B1	Timing strategy using moving average	0.124463	2
	B2	Mark Walker's Seasonal Timing Strategy	0.146048	1
	B3	Cy Harding Seasonal Timing Strategy	0.204977	3
	B4	Hirsch's Best Six Month Timing Strategy	0.124463	3

Research findings

The aim of the present research was to design a practical trading system for implementation in stock investment funds, which is suitable for implementation in the Tehran Stock Exchange market; And for this, with an innovative method, a trading system consisting of six steps: measuring the feasibility of implementing the proposed trading system in the Tehran stock market, selecting successful industries, selecting successful companies, performing technical analysis, analyzing the model's sensitivity to parameters, measuring The tendencies of capital market specialists

were designed and implemented, and the results were analyzed with the method of fuzzy network analysis and showed the prioritization of the effective criteria on determining a model for improving the performance of capital market specialists as follows: 1. Timing 2. Timing strategies. The forward limitations that can be stated for the design of this system is that it should provide a mechanism to determine the four vital components of trading systems, which are: What industries and companies should we buy? How many percent of the total portfolio should we allocate to each share? And when should we buy? When should we sell? In order to create a trading system, taking into

account the mentioned limitations, the following measures were taken:

- Designing and providing a mechanism for selecting successful industries in an uncertain environment using the combined method of scenario planning and ANP: The combined mechanism presented at this stage is used in the trading system to select successful industries. This mechanism allows the system to include the opinions of fund specialists about the future of the economy and capital markets developments in the selection process.

- Designing and providing a mechanism for selecting successful companies with a fundamental approach, implementation using the ANP method: The mechanism presented at this stage is used in the trading system to select successful companies that are among the selected industries. Among the features of this mechanism, compared to previous studies in the application of multi-indicator decision-making in the selection of successful companies, it can be mentioned that by creating three sub-models of risk, expected return and liquidity, the characteristics in each sub-model according to Their concept and effect are categorized and evaluated, and in this mechanism, by examining the level of risk tolerance of the investor, it is included in the company's proposal. In the three designed sub-models, the characteristics have been used whose effectiveness has been examined by specialists in previous articles for the Iranian stock market.

- Designing and presenting a capital allocation optimization model with a fundamental approach: the proposed multi-objective optimization model is used to determine the amount of capital allocation to companies. Among the advantages of using this model, the following two items can be mentioned. This model is completely consistent with the selection stage in this article. In this way, the scores obtained in the fundamental analysis are also used in determining the amount of capital allocation to the companies, and another advantage of this model is compared to the models based on Markowitz's theory in unstructured capital markets such as the real estate market. It is well defined. Because in these markets there is no price information in abundance and in a regular manner, therefore, the methods created based on the existence of time series are not effective in these markets. By using the optimization model with a basic approach, it is possible to create a basic allocation to determine the

amount of capital for each project without getting involved with price information.

- Proposing a step strategy in technical analysis for the purpose of application in investment funds: This strategy is proposed in order to apply technical analysis in investment funds. One of the advantages of this mechanism is that performing transactions in a step-by-step manner causes their volume to be reduced in each presentation, which reduces the irritation caused by buy and sell orders by funds, and step-by-step orders cause many units of The desired purchase and sale should be done in conditions where the analyst has gained more confidence in the correctness of his prediction.

- Creation of futurist software using MATLAB, in order to implement the trading system: In the trading system presented in this article, many methods and analyzes have been used in the fields of finance, decision making and optimization. In order to implement this trading system, it should be done in such a way that there is the least need for experts to understand the stages of system design. For this purpose, a software platform including three modules of industry selection, company selection and technical analysis was designed. The design of this platform is such that it is possible to adjust its parameters for the fund's experts, and it also involves them in the analysis steps in such a way that they can trust the system's proposed results. In the current research, knowing the mentioned cases, an attempt was made to create a system that can be considered in the real world; For this purpose, the measures taken to solve the problem can be mentioned:

- The use of scenario analysis in the industry selection section allows system users to include their estimates of the future of the economy in the model.
- The creation of a mechanism for evaluating the user's risk tolerance increases the possibility of matching the results with the user's needs.
- The use of fundamental and technical approaches at the same time in the right place gives users the assurance that the available information has been used in the best way in making decisions.
- The existence of an interactive mechanism in evaluating the importance of the characteristics of decision-making models convinces users that their opinions and experiences have been included in the obtained results.

- Creating a step strategy in technical analysis makes it clear to the user that the creators of the trading system have accepted the possibility of a flaw in their analysis and have considered it in their proposals.
- Designing a complete trading system with its four main components eliminates the need for additional analysis.
- The creation of the futurist software and the complete implementation of the trading system in it gives users the opportunity to have the results of the system without the need to understand the complexities of the model and perform calculations.
- The possibility of developing the selection and optimization mechanism presented in this article for the real estate market.
- The possibility of replacing technical analysis with meta-innovative methods in the stage of determining the trading time.
- The possibility of developing a step strategy in meta-initiative methods to determine the right time for transactions.
- Due to the impossibility of accessing the data and information of many companies and investment funds due to the confidentiality and policies of the companies, the violated and manipulated information and the lack of usability and citation, with this method, it is possible to foresee And designing the scenario and determining the important and effective criteria and indicators on the performance of specialists helped to improve the performance of investors.
- Many researches are conducted with standard and pre-designed questionnaires, most of which are taken from the books of experts from other countries, which are different from our country in terms of economic, political, economic, and social conditions. And this model is dynamic and evaluates the performance of specialists with existing and real conditions.
- By designing this trading system and using MATLAB application software, it is possible to have quick access and willingness to cooperate with experts and Pundits active in the capital market, and to save time and money to evaluate the performance of market experts. and have high accuracy evaluation results. In the end, with regard to statistical research and data analysis, we have shown in this research that the market timing strategy can be fruitful and the use of a successful timing system can be used to invest during upward trends or during Downtrends are selling and being in a liquid state, and each person should make a

decision according to their individual characteristics and desires, and control their emotions and emotions in transactions and reduce them to the lowest level.

This research showed that it is possible to provide a comprehensive model of "time measurement" for the capital market and improve the performance of market specialists, and it is effective in predicting the future of the market and making appropriate decisions in the market, and that in the market, the facts are not the monopoly of anyone. The advice of others should be considered carefully, and by putting together the possibilities, better and more satisfactory results can be obtained during several cycles of the booming market and the declining market. Finally, it is suggested to use market timing and adopt appropriate strategies according to capital market conditions and identifying political risks, economic situation, interest rate, inflation, business cycles, election cycles, etc. They can use this strategy for all kinds of investments such as stocks, futures contracts, bonds, option contracts. Due to the volume of liquidity that is exchanged in the financial markets, these markets have always attracted the attention of many experts and analysts. Researchers in academic environments and universities have not been exempted from this and many efforts have been made to apply different sciences in forecasting and analyzing financial markets. And that the existence of research gaps to provide a model for improving the performance of capital market specialists through a trading strategy in the field of market timing as well as related implementation methods to solve problems related to capital market timing with an innovative method, is one of the reasons for dealing with This research has been; In the way that in the past researches, there has not been a comprehensive look at the issue of market timing from the investor's point of view.

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