On the Entity of Financial Market Activities from the Perspective of Artificial Intelligence

Huijuan Ma, Yihao Duan and Peng Nai*

Law School, Yunnan University of Finance and Economics, Kunming, Yunnan, China
**Corresponding Author*

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Abstract: Artificial intelligence, as an emerging technology, based on human thinking, adding algorithms, equations, programming languages, etc. to form a new operating system. It can solve problems more accurately and correctly without interference from external factors. This brings practical necessity for artificial intelligence to participate in the financial market as an activity subject. But if artificial intelligence enters to the financial market, as the main body participates in financial activities, the advantages and disadvantages coexist. The entry of artificial intelligence into the financial market enables efficient processing of information, scientific decision making, accurate and objective judgment of risk and forecast the funds and the stock market. But it also brings financial risks and loopholes that affect data security. The results of artificial intelligence processing financial activities are not so creative that financial markets are difficult to improve. At the same time, artificial intelligence as the subject to participate in the financial market is also likely to cause a large number of unemployment in the financial market. Therefore, we need to explore the development direction of artificial intelligence as the main body of financial market activities. The main methods are: developing data governance capabilities, improving the security of artificial intelligence to participate in financial markets, and increasing the financial specialization of artificial intelligence to serve the financial market better. Rationally adjust the relationship between artificial intelligence and traditional financial practitioners to prevent the sudden arrival of financial unemployment.

As an emerging technology, artificial intelligence is slowly entering the traditional industry and changing the trajectory of traditional industries. Financial markets are characterized by data and electronic. Artificial intelligence can play a role in customer data, risk assessment, payment methods, stock forecasting, and industry operations to promote the development of the entire financial market [1].

1. Concept, Generation and Development of Artificial Intelligence

AI, known in English as “Artificial Intelligence”, is a new technical science that studies and develops theories, methods, techniques, and applications for simulating, extending, and expanding human intelligence. Artificial intelligence is an emerging science that brings together sciences such

as computer science, logic, biology, psychology, and philosophy.

In 1955, at the “Learning Machine Symposium”, the famous scientists Alan Newell and Oliver Seyfrici proposed two research topics: chess and computer pattern recognition the emergence of artificial intelligence prototypes.

In 1962, Arthur Samuel wrote a set of checkers that could be played against humans in his “machine learning theory” and defeated the American checkers masters. Artificial intelligence began to attract people's attention.

In the 1970s, bionics began to become popular. The widespread use of BP algorithms made the neural network model hot, mainly using mathematical methods to simulate the neural network of the human. However, artificial intelligence also encountered a development downturn during this period, which was due to the deviation of scientific research personnel's estimation of the project in a certain scientific research process, which caused the failure of the advanced research plan. The incident made people pay attention to the artificial intelligence technology while questioning its development prospects.

In 1977, IBM's super-chess computer “Deep Blue” came out. It used the AIX system and had a speed of 200 million pieces per second. The surprising part of Deep Blue is that it can search and estimate the next 12 moves, while a good human chess player can estimate the next 10 moves. In the subsequent man-machine battle, Deep Blue defeated the chess master and coach David Bronstein, and lost to the chess world champion Kasparov. The following year, after the improvement, as the world's first chess player Kasparov eventually lost to the Deep Blue, it can be said that it is a historic scene in the human-machine war, let the development of artificial intelligence re-enter the public's vision and gained wide attention.

In 2016, AlphaGO defeated Li Shishi, the world's top Go player, as a Go artificial intelligence program. The main working principle is “deep learning”, which uses a multi-layered artificial neural network and training methods to form a neural network “brain” for accurate and complex processing. The development of artificial intelligence has entered a new stage of vigorous development.

In summary, although the development time of artificial intelligence is not long, it has a rich experience. Based on this, artificial intelligence can achieve integration with many fields, and realize the two-way development of artificial intelligence technology and traditional industries. The integration of artificial intelligence and the financial industry is necessary because of the characteristics of artificial intelligence and the financial industry.

2. The Practical Necessity of Artificial Intelligence Entering Financial Market

As an emerging technology, artificial intelligence is compatible with the financial market. The essence of the financial industry is datalization, which turns all information into data. Everything is directly and objectively with less personal analysis and ideas. The rules and objectives of the financial market are clear. All the data related to finance, stocks, funds and futures are the key information, as well as the objective analysis of the fit information. As a technical science, artificial intelligence is the sum of theories, methods, technologies and application systems for researching and developing intelligence for simulating, extending and expanding people. Although it becomes “artificial” intelligence, its operation is based on human thinking. Based on human thinking, adding algorithms, equations, programming languages, etc. to form a new operating system, although it comes from human thinking, transcends human thinking is more objective, precise and rational. It simulates the thinking of the human brain, but because it is not restricted by human functions, it surpasses the limits of the human brain and can solve problems more accurately and correctly, without interference from external factors [2].

Based on the characteristics of artificial intelligence, in the face of the characteristics of financial market data, artificial intelligence can perform better than traditional methods in data analysis, risk assessment, and big data collection, because its technology level is higher and its application is higher. The method is more scientific and the capacity to carry data is larger.

For artificial intelligence to enter the financial market, as a subject to participate in financial activities, advantages and disadvantages coexist.

2.1 Advantages of artificial intelligence entering financial markets

2.1.1 Efficiently process information and make decisions scientifically

Now it is the era of big data. The information that appears every moment may be more than the history of the millennium in ancient society. In the face of the current situation of data explosion, how to store data, classify data, analyze and use data becomes a problem. Non-computer processing methods obviously cannot meet this requirement, and artificial intelligence can be used in information processing because of its machined properties, superior computing power and storage space. So in order to make the most of data information in the era of big data, artificial intelligence is the best choice.

2.1.2 Accurate and objective judgment of risk

Artificial intelligence is not affected by subjective thoughts and emotions. It is only faithful to algorithms and data. In the face of risk, it can make the most objective and rational analysis without being restricted by human weakness. Artificial intelligence is highly rigorous and logical, avoiding the thinking patterns and personal tendencies that humans are prone to. In addition to its existence in the financial market, artificial intelligence has made outstanding contributions to weather prediction and geological disaster prediction. Its accuracy and rigorousness have become more and more popular.

2.1.3 Using programs and algorithms to predict funds and stocks

It is mentioned above that artificial intelligence can store a large amount of data, and it is excellent in data analysis and application. It records relevant information of funds and stock market, especially the historical trend and influencing factors formed over a long period of time. Artificial intelligence is based on human thinking. Therefore, there is a certain cognitive ability that can play a role in the financial fields such as funds and stock markets. For example, the Rebellion Research, a financial firm in New York, launched the first pure AI investment fund, which successfully predicted the stock market crash in 2008. Another example is the hedge fund Cerebellum, which controls 900 billion US dollars. Because it has been using artificial intelligence technology, the fund has never experienced a loss since 2009; Aidyia, a Hong Kong company, has created a hedge fund that does not require human intervention, but uses artificial intelligence to trade stocks.

2.2 Disadvantages of artificial intelligence entering financial markets

2.2.1 Affect data security

In the era of big data, all walks of life pay attention to data security, fear of privacy leakage, and violation of interests. The characteristics of financial market data are particularly obvious. Once information security such as customer data and capital flow is leaked, the corresponding stocks and funds will face the risk of losing funds and cause heavy losses. Therefore, it is important to improve the function of artificial intelligence to ensure data security. As an emerging technology, artificial intelligence is excellent in information processing, but it is vulnerable in information protection and vulnerable to hacking, resulting in leakage of user privacy and capital data [3].

2.2.2 The processing results are not creative and the financial market is difficult to improve

Artificial intelligence has fixed its algorithms and running steps, so theoretically the output will be the same if the original information entered is the same. But any industry needs to be innovative. If it is only mechanically based on data and computing results, although the risk is small, but the same, lack of creativity, in the long run, the industry is difficult to develop. The same is true for the financial industry. If we are faced with rigid data and no reasonable predictions and analysis, then the financial market will move slowly and lack vitality. In the long run, the participation of financial practitioners in financial activities has declined, and the enthusiasm for financial undertakings has also declined. The financial industry is just a cold data analysis and a step-by-step capital flow.

2.2.3 A large number of unemployed people in the financial market

The entry of artificial intelligence into financial markets has become a trend in place of other practitioners. As a high-efficiency industry, the financial industry is more inclined to use artificial intelligence jobs because of the large amount of data support required for investment advisors, risk estimates, and personal credit ratings. This move will inevitably lead to a large number of unemployed workers in the financial industry, which will confuse the originally stable social employment situation. In addition to the artificial intelligence completely replacing the practitioners, there are cases where the two coexist. As an emerging technology, artificial intelligence requires high technical level, and people who can master and use it have high requirements in programming, mathematics, logic, etc., but the original financial market practitioners do not have such knowledge and technology. It is more difficult, and it is a waste of artificial intelligence resources caused by translation. It does not help to improve the efficiency of work. The demand for artificial intelligence to use talents will also bring challenges to the entire financial industry. It takes a lot of time to solve this problem, mainly from the talent training, which is also a big social cost [4].

3. The Development Direction of Artificial Intelligence as the Main Body of Financial Market Activities

The above contents analyze the advantages and disadvantages of artificial intelligence participating in financial market activities. Although advantages and disadvantages coexist, artificial intelligence participates in the financial market and becomes the main body of financial market activities. Today, there are many trends, although there are many shortcomings. With these shortcomings, we should develop a scientific and feasible strategy to improve the artificial intelligence as a way to participate in financial activities, mainly in the following aspects:

3.1 Develop data governance capabilities and improve the security of artificial intelligence in financial markets

Today, companies have strong requirements for comprehensive data governance. In order to more clearly understand the data in the financial market, the data can be effectively controlled; the assets can be clarified, and the complex data can be simple and organized to manage the financial market more efficiently. As the main body of financial activities, artificial intelligence, in addition to recognizing the importance of data, how to control data after obtaining data, classifying data, and analyzing data, especially to ensure that data is not used by illegal people, it is more important to endanger financial market security weight [5].

In the process of artificial intelligence participating in financial market activities, ensuring data quality and data security is the most basic guarantee. Therefore, in the process of artificial intelligence entering the financial market, in addition to developing artificial intelligence systems and applications, financial market managers must think more. How to promote data quality and

security?

For this, we can adopt a series of data security protection methods, encrypt data management, conduct risk assessment on important customer information and capital flow information, add data monitoring procedures in the system of artificial intelligence operation, and regularly keep confidential. The financial data is checked. The two technologies of data security and artificial intelligence should promote each other and develop together in the process of artificial intelligence entering the financial market.

3.2 Increase the financial specialization of artificial intelligence to make it more specialized and better serve the financial market

Artificial intelligence is more like a “universal plaster” in today's society, and it has its uses in all walks of life. As a highly professional field, the financial market has requirements for the financial knowledge and skills of the participating entities. The participants are required to have different value orientations and risk assessments according to their own identity in financial activities, and judge the cost and benefit. The standards are also different. As an entity, artificial intelligence participates in the financial market, and it must play different roles in its subdivided parts. This requires financial managers to mainly differ in different positions in the development process, and different requirements for financial knowledge and skills to develop labor. Smart corresponding technology makes artificial intelligence more specialized in the role of the financial market and better serves the financial market.

3.3 Rationally adjust the relationship between artificial intelligence and traditional financial practitioners to prevent the sudden arrival of financial unemployment

The popular phrase is “Artificial intelligence is coming for your work. In order to protect your career, it is best to do work that machines are not good at.” Because it has almost no IQ (however, the latest research shows that artificial intelligence has the ability to think independently.) Human intelligence is necessary to accomplish complex goals, and can not be simply quantified by data. Therefore, modern workers should choose those jobs that are unpredictable or require creativity. However, in the financial market, many positions are highly procedural, such as credit analysts, bookkeepers, tax accountants, etc. Their work is usually more procedural and requires less room for thinking, so it is easier to be replaced by artificial intelligence. Therefore, in the process of artificial intelligence entering the financial market, we must consider the overall environment of the financial industry market. It must not be replaced by all financial positions because of the efficiency and efficiency of artificial intelligence, but it should be considered as a long-term flow. The combination of the two reduces the threshold for artificial intelligence to enter the corresponding financial positions, and the related development costs are also reduced. On the other hand, the integration and collaboration between the two is the combination of creativity and efficiency. The promotion has a positive impact, which makes the entire financial market more dynamic due to the addition of new subjects [6].

4. Conclusion

It is a general trend for artificial intelligence to participate in various industries as an emerging technology. Although participating in the financial market as a main body of financial market has advantages in data processing, risk assessment, and forecasting of the stock market, its defects also exist, requiring financial market managers and labor. Intelligent developers work together to make artificial intelligence participate in the financial market as one of the models of artificial intelligence integration into various industries.

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