

Research on the Impact of Artificial Intelligence on Enterprise Financial Risk

Ruoxi Chen^{1*}

¹ School of Economics and Management, Guangxi Normal University, Guilin, China

Email Address

1175648331@qq.com (Ruoxi Chen)

*Correspondence: 1175648331@qq.com

Received: 2 May 2025; Accepted: 31 May 2025; Published: 13 June 2025

Abstract:

This paper discusses the impact of artificial intelligence on enterprise financial risk, pointing out that with the development of high-performance chips, big data and cloud computing, artificial intelligence technology can be widely used. In the face of global economic integration and intensified market competition, corporate financial risk has increased significantly, and traditional financial analysis methods are difficult to meet the demand. The article overviews the role of artificial intelligence in enhancing the efficiency of financial data processing, predicting financial conditions, identifying potential risks and improving information asymmetry, and analyzes how artificial intelligence can reduce corporate financial risks by optimizing corporate governance. The study points out that the application of artificial intelligence technology can significantly improve the ability of corporate financial risk prevention and control, and provide strong support for the sound operation of enterprises.

Keywords:

Artificial Intelligence, Enterprise Financial Risk, Financial Data Processing, Information Asymmetry, Corporate Governance

1. Introduction

In recent years, thanks to the rapid progress of high-performance chip technology, the rapid growth of big data, and the widespread application of cloud computing, the cost of computing and storage has shown a significant downward trend, while the performance has also achieved significant improvement. This transformative development has laid a solid foundation for the in-depth research and wide application of artificial intelligence technology. With the continuous progress of technology and the emergence of innovative applications, the role of AI in promoting economic and social development is becoming increasingly significant [1].

With the acceleration of global economic integration and the increasingly fierce competition in the market, the financial risks faced by enterprises have shown a trend of significant growth [2]. Especially under the impact of the financial crisis, the internal and external environments of enterprises have become more complex and volatile, and the threat of financial risk has become more and more prominent. In this context, strengthening the financial risk management of enterprises and enhancing the

ability of financial risk prevention and control has become an indispensable key link in modern enterprise management [3]. However, when dealing with a large amount of data, the traditional manual analysis is obviously difficult to meet the high standards and strict requirements of financial risk early warning [4]. Therefore, the issue of how enterprises can significantly improve the efficiency and accuracy of financial data processing, quickly identify potential financial risks, and ensure the sound operation of corporate finance has received attention.

2. Literature Review and Theoretical Analysis

2.1. Artificial Intelligence

2.1.1. Connotation of Artificial Intelligence

Artificial intelligence is a technology that can correctly interpret external data and learn from it, and then realize specific goals and tasks with flexible adaptability. It covers a wide range of activities and concepts, including the use of diverse software and algorithms to support or perform tasks that previously required human cognitive abilities to accomplish [5].

2.1.2. Research on the impact of artificial intelligence

The existing literature shows that research on AI focuses on the innovative performance of firms, the market value of firms, the labor demand of firms, and the competitiveness of firms. Specifically, in terms of enterprise innovation performance, high-end manufacturing enterprises and automobile manufacturing enterprises can adopt a technology-supported development strategy, actively integrate AI technology into their technology system, thereby promoting manufacturing, R & D design and other key links to achieve a more efficient and smarter operation, and leading the entire technology system to the direction of digitization and intelligence[6], to further improve enterprise innovation performance. In terms of enterprise market value, the wide application of AI technology can significantly bring about the upgrading of the labor employment structure, the optimization of production costs, the positive improvement of internal and external expectations, as well as the significant enhancement of the innovation efficiency, and these multiple positive impacts on the enterprise, which contributes to the significant increase in its market value[7]. In terms of enterprise labor demand, AI not only promotes the rapid transformation and upgrading of enterprises in traditional industries, but also triggers a new round of changes in enterprise labor demand in the process, and it has a significant negative impact on the scale of enterprise labor demand [8]. In terms of enterprise competitiveness, through the integration of AI technology, we are able to empower the production and operation processes of manufacturing enterprises, and thus enhance the knowledge-based and intelligent level of manufacturing enterprises. This initiative enhances the overall competitiveness of high-tech enterprises and makes them stand out in the fierce market competition [2].

In addition, from the perspective of enterprise risk, it has been pointed out in the literature that knowledge graph, as a research focus in the field of artificial intelligence, provides powerful tools for enterprises and financial practitioners, and related scholars have successfully developed an intelligent question-and-answer robot based on the architecture of enterprise risk knowledge graph [9], which makes full use of the knowledge graph, and provides instant and accurate risk analysis answers and

decision support. As a kind of enterprise risk: enterprise financial risk, related scholars have conducted theoretical research and analysis on it, that is, in the context of the era of big data, the prevention and control of enterprise financial risk is facing unprecedented opportunities and challenges. In order to effectively deal with these challenges, artificial intelligence technology can be used to improve the efficiency and accuracy of enterprise financial risk prevention and control [10]. However, the research based on the perspective of enterprise financial risk only stays at the level of theoretical analysis, and the relationship between the two is not reasonably measured and evaluated.

2.2. Enterprise financial risk

2.2.1. Connotation of enterprise financial risk

Enterprise financial risk refers to the process of various financial activities in the enterprise, due to the encounter of a variety of factors that are difficult to predict or control, resulting in the uncertainty of the enterprise's financial situation, and then make the enterprise face the risk of possible economic losses [11]. Financial risk is an element that cannot be ignored in the process of enterprise operation. Therefore, the issue of financial risk has been highly concerned by the academic and practical circles.

2.2.2. Influencing factors of enterprise financial risk

Existing research literature mainly focuses on two major aspects, namely, internal factors and external factors, to explore the influencing factors of enterprise financial risk in depth.

The internal factors include board characteristics and equity structure. At the level of board characteristics, board governance efficiency [11], board independence level [12], internal control [13], and agency cost [14] can have an impact on corporate financial risk. At the level of equity structure, Yang Minzhi's (2010) study reveals that effective checks and balances of small and medium-sized shareholders on controlling shareholders can help to reduce the financial risk of enterprises [15]; the study finds that there is a significant negative correlation between the degree of equity mix of an enterprise and its financial risk [16].

Among the external factors of enterprises, regional legal environment [17], foreign exchange risk exposure [18] and the intensity of government intervention [19] have significant correlation. Currently there are also scholars from the perspective of digital transformation, digital financial development and other perspectives into, explore the enterprise financial risk factors and other related issues, such as the deepening of the digital transformation has brought significant information effects, scope and scale effects and empowerment effects, which significantly enhance the total factor productivity of enterprises, but also enhance the operational capacity of the enterprise, and further reduce the level of financial risk [20]. The rapid development of digital finance has a significant positive impact on alleviating liquidity constraints, easing corporate financing constraints, and thus reducing the level of corporate financial risk [21]. After a literature review, we found that the current research on the level of corporate financial risk from the perspective of artificial intelligence remains at the level of theoretical discussion, and the research on the level of corporate financial risk of the relevant technology is relatively broad, and not specific to what kind of technology. Therefore, this also provides a valuable research opportunity for this

paper, which is ready to conduct in-depth discussion on the level of enterprise financial risk from a more specific perspective of artificial intelligence.

2.3. Related research on the impact of artificial intelligence on enterprise financial risk

2.3.1. Artificial intelligence and enterprise financial risk

With the rapid development of Internet technology, the amount of financial data generated by enterprises has been growing explosively, and the traditional manual analysis has been difficult to respond effectively, especially in the key link of financial risk management, and its limitations are becoming more and more prominent. Therefore, in this context, the use of artificial intelligence technology to assist in financial risk management is particularly necessary. First of all, with the help of artificial intelligence technology, we can fully utilize the powerful computing power of computers to realize the real-time processing of financial data. Through the display of data images and recognition technology, artificial intelligence can accurately extract key financial data, thus greatly improving the efficiency of financial data verification [10], ensuring the accuracy and reliability of the data, so as to reduce the level of corporate financial risk. Second, by utilizing the powerful arithmetic power of machine learning algorithms, the system is able to automatically learn and analyze potential patterns or laws in financial data. This analytical capability enables machine learning to predict the future financial status of an enterprise and provide insight into the development trend of the entire industry [22]. Furthermore, deep learning models are able to dig deeper into the intrinsic information in financial data by simulating the structure and operating mechanism of the neural network of the human brain [22]. This highly complex model not only enhances the ability of data processing, but also accurately identifies potential financial risks and anomalies. Finally, the application of IoT technology enables us to efficiently collect and integrate financial data from multiple channels, thus realizing a comprehensive grasp of the financial status and risk status of the enterprise, and at the same time providing financial managers with richer data support to help them make more comprehensive and precise decisions [22].

2.3.2. Artificial intelligence, information asymmetry and enterprise financial risk

The theory of information asymmetry points out that in the capital market, those subjects with more or faster access to information tend to occupy an advantageous position, and relatively speaking, subjects with less information or slower access to information are in a more disadvantaged position [23]. In the process of enterprise capital financing, it usually involves a clear principal-agent relationship, in which financial institutions such as banks and investors who finance capital play the role of the principal, while the financing enterprise acts as the agent. As the agent of financing activities, the financing enterprise has relatively comprehensive and in-depth information about the actual use of the financed funds, the utilization effect, the potential investment risk and the possibility of repayment. However, for the supplier of funds, i.e. the principal of the financing activity, their knowledge of such key information is relatively limited, and they are often in a more passive position. This imbalance in information acquisition, i.e., information asymmetry between the financing parties, is a common problem for enterprises in capital financing activities, and the problem is an important reason for the high level of financial risk [24]. Second, examined from the micro perspective of banks, the core cause of credit risk lies in information asymmetry and the agency conflict triggered by it. Prior to the

signing of a loan contract, banks are often at an information disadvantage. Specifically, it is difficult for the bank to fully and accurately grasp the detailed information of the borrowing enterprise in terms of the use of loan funds and the potential risk prediction, etc. This limitation of information can easily lead to miscalculation of the bank in loan decision-making, and thus lay a hidden danger of credit risk [25]. In contrast, the borrower enterprise in the flow of credit funds, expected returns and repayment probability and other aspects of the absolute information advantage. This unequal information status may lead to bias in the bank's assessment of the borrowing firm's credit rating, which increases the likelihood of default risk [26]. In addition, this may lead banks to increase the loan interest rate, reduce the loan amount, or even refuse the loan, thus increasing the financial risk of the enterprise.

With the strong support of cutting-edge technologies such as artificial intelligence, it is possible to efficiently process massive amounts of data at a very low cost and risk [27], which in turn leads to deeper mining of more comprehensive and detailed corporate credit information. These technologies not only enhance the authenticity and accuracy of information, but also significantly accelerate the flow of information, effectively improving the information asymmetry problem that has long existed in the financial market [28]. Therefore, artificial intelligence can provide enterprises with more accurate financial forecasts and decision-making support, reduce inefficient investment, and thus reduce the level of financial risk.

2.3.3. Artificial Intelligence, Corporate Governance and Corporate Financial Risks

From the level of corporate governance in-depth observation, the application of artificial intelligence technology is like a strong force of change, bringing significant management changes and decision-making environment optimization for enterprises [29]. In today's digital era, enterprises are faced with massive and complex data, and traditional data processing methods are gradually difficult to meet the needs of enterprise development in terms of efficiency and accuracy. The emergence of artificial intelligence technology, like a precise scalpel, greatly improves the computing efficiency and information processing capacity of massive data. It can quickly screen, analyze and integrate all kinds of data, dig out the hidden potential value behind the data, and provide strong support for enterprise decision-making. The application of this technology enables intelligent technology to effectively penetrate into all aspects of enterprise internal control activities. In enterprise internal control, from financial auditing to business process monitoring, from risk management to compliance checking, artificial intelligence can play an important role. Taking financial auditing as an example, traditional auditing methods often require a lot of labor and time, and are prone to human error. AI, however, can monitor and analyze financial data in real time through algorithmic models, quickly identifying unusual transactions and potential risk points, greatly improving the efficiency and accuracy of audits. In terms of business process monitoring, AI can track business execution in real time, discover loopholes and problems in the process in a timely manner, and put forward optimization proposals, thus optimizing the operational efficiency of the enterprise's internal control.

The introduction of artificial intelligence also enhances the ability of enterprise risk control. In the complex and volatile market environment, enterprises are faced with various risks, such as market risk, credit risk, operational risk and so on. Artificial intelligence can build a risk prediction model by analyzing a large amount of

historical data and real-time information, warn potential risks in advance, and help enterprises develop effective risk response strategies. At the same time, it is also able to monitor and evaluate risks in real time, adjust risk control measures in a timely manner, and ensure that enterprise risks are always within the controllable range, which in turn improves the effectiveness of internal control [30]. In addition, the technological information effects of AI applications have potentially positive effects, and these effects may significantly mitigate agency problems arising from management's self-interested behavior. In the traditional corporate governance structure, there is often information asymmetry between management and shareholders, and management may act in their own interest to the detriment of shareholders. And artificial intelligence improves the efficiency of information communication between enterprises and external investors. Through the intelligent information disclosure platform, enterprises can transmit their operational information to the market in a more timely, accurate, and comprehensive manner, enabling market stakeholders to access and pay attention to the operational status of enterprises in a more effective way [30].

This efficient information exchange not only enhances market transparency, but also brings higher market expectations and stricter market monitoring pressure [31]. When the operational information of firms is more transparent, investors are better able to assess the value and risk of firms, thus forming reasonable market expectations. At the same time, the supervisory power of the market will be enhanced, and investors, analysts, and the media will pay close attention to the behavior of enterprises. In this environment, management's self-interested behavior will be more strictly scrutinized and restrained. Once management misbehavior occurs, the market will react quickly and bring negative impact to the enterprise, thus forcing the management to act more cautiously and reducing the possibility of their self-interested behavior. From this point of view, AI applications can enhance corporate governance in multiple dimensions and become a key force in promoting the healthy and sustainable development of enterprises.

In the complex system of corporate governance, it is like an intricate picture, involving numerous and intertwined variables. Among them, board of directors' characteristics, executive incentives, and equity structure are the three most widely used key variables, just like the key colors in the picture [32]. These three variables play a crucial role in corporate governance, and they are like three pillars that support the edifice of corporate governance and influence the operation and development of enterprises. The existing literature mainly focuses on these three aspects to explore the relationship between the level of corporate governance and corporate financial risk, trying to unravel the mystery between them.

In terms of the characteristics of the board of directors, independent directors, as a key role in the corporate governance structure, are like the "guardians" within the enterprise. They are aware of the importance of their personal reputation, which is a valuable asset of their career. When financial fraud or other misconduct occurs in an enterprise, it is like dropping a boulder on a calm lake, which will stir up a thousand waves in the market and bring immeasurable negative impact on their personal reputation [33]. This negative impact may not only lead to the damage of their reputation in the industry, but may also affect their future career development and opportunities. At the same time, independent directors also recognize that if a company is in trouble due to business failure, they, as important participants in corporate governance, can hardly be left alone and may be implicated. Therefore,

independent boards of directors actively fulfill their supervisory duties with a high sense of responsibility and mission. They scrutinize an enterprise's financial statements, major decisions, etc., to ensure that its operations are legal and compliant. Their presence helps to enhance the internal supervision and control mechanism of the enterprise, just like installing a strong line of defense for the enterprise, thus reducing the level of financial risk of the enterprise [32].

In terms of executive incentives, appropriate compensation incentives are like a bridge connecting the interests of executives and shareholders. Under the traditional corporate governance model, there is often a divergence of interests between executives and shareholders, and executives may pay more attention to their own short-term interests while ignoring the long-term development and financial risks of the enterprise. However, appropriate compensation incentives can reduce this divergence to a certain extent. By linking executives' compensation to the performance of the enterprise, financial risk and other indicators, executives can be motivated to pay more attention to the financial risk of the enterprise. They will take the initiative to take measures, such as optimizing the capital structure of the enterprise and strengthening risk management, to reduce this risk. Because only when the financial risk of the enterprise is reduced and the performance is improved, they can get higher compensation. This incentive mechanism makes the interests of executives and shareholders converge and work together for the stable development of the enterprise.

In terms of shareholding structure, state-controlled enterprises usually show a relatively low level of financial risk, which has a profound reason behind. Local governments have special support for local state-owned enterprises, which mainly stems from the consideration of the economic interests of the region. As an important part of the local economy, the stable operation of state-owned enterprises is crucial to the development of the local economy. Therefore, local governments tend to give state-owned enterprises more inclination and support in terms of funds and policies. When state-controlled enterprises face difficulties, the government often has a strong motivation and willingness to provide the necessary assistance to ensure the stable operation of the enterprise. This government intervention and support undoubtedly provides additional protection for the enterprises, as if holding a protective umbrella for them, thus significantly reducing their financial risk level [32].

3. Conclusions

The research in this paper shows that artificial intelligence technology has significant advantages in improving the efficiency of enterprise financial data processing, predicting financial conditions, accurately identifying potential financial risks and improving information asymmetry, etc. It can effectively reduce the enterprise financial risk by optimizing the corporate governance mechanism, provide a strong guarantee for the sound operation of enterprise finance, and is an important tool for modern enterprises to cope with the complex and changeable market environment and to improve the level of financial management.

Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

Funding

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

References

- [1] Makridakis, S. The forthcoming artificial intelligence(AI)revolution.its impact on society and firms. *Futures*, 2017, 90(6), 46-60.
- [2] Du, C.Z.;Cao, X.X.; Liu, S.T. Artificial intelligence and the competitiveness of high-tech enterprises: mechanisms and effects. *Business Economics and Management*, 2024, 02, 30-49.
- [3] Chen, J.X. Artificial Intelligence-Driven Supply Chain Transformation-Platform Reconstruction, Ecological Remodeling and Advantage Reconstruction. *Contemporary Economic Management*, 2023, 45(05), 50-63.
- [4] Zhang, D.Y.; Han, Q.Y. Application of Artificial Intelligence in Enterprise Financial Risk Early Warning under the Background of Big Data. *China township enterprise accounting*, 2023(11), 169-171.
- [5] Li, X.H.; Li, J.Z. The application of artificial intelligence in organizational management: an analysis based on the perspective of empowerment and gain. *Contemporary Economic Management*, 2023, 45(04), 20-30.
- [6] Sun, L.W.; Li, S.S. Research on the impact path of artificial intelligence empowerment on innovation performance - based on fuzzy qualitative comparative analysis. *Science and Technology Management Research*, 2021, 41(23), 11-19.
- [7] Wu, F.; Yang, X.S. Application of Artificial Intelligence Technology and Market Value of Listed Companies. *Modern Economic Discussion*, 2022, 11, 77-92.
- [8] Feng, X.L.; Qiu, Y. Can Artificial Intelligence Technology Innovation Boost Enterprise Labor Demand? *Journal of Beijing Technology and Business University (Social Science Edition)*, 2023, 38(02), 15-27.
- [9] Chen, X.J.; Xiang,Y. Construction and application of enterprise risk knowledge mapping. *Computer Science*, 2020, 47(11), 237-243.
- [10]Li, X.D. Application of Artificial Intelligence in Enterprise Financial Risk Prevention and Control-Based on Big Data Environment. *Finance and accounting newsletter*, 2021, 22, 137-142.
- [11]Huang, J.K.; Kisgen, D.J. Gender And Corporate Finance:Are Male Executives Overconfident Relative To Female Executives? *Economics*, 2013, 108(3), 822-839.
- [12]Du, X.Q.; Zhou, Z.G. Accounting information quality and corporate governance:Further empirical evidence based on the Chinese capital market. *Finance and Economics*, 2007, 03, 71-79.
- [13]Yuan, X.B. Internal Controls and Financial Risks-Empirical Evidence from Chinese Listed Manufacturing Companies in Shanghai. *Economic and Management Research*, 2010, 05, 60-68.

- [14] Yu, J.L.; Tong, M.H.; Zhu, Z.J. The Impact of Corporate Financialization on Financial Risk - A Study on the Moderating Effect Based on Economic Policy Uncertainty. *International Finance Research*, 2021, 10, 88-96.
- [15] Yang, M.Z. Equity Structure, Financial Risk and Cost of Debt Funding: A Study on the Transmission Effect of Mediating Variables. *Economic Issues*, 2010, 09, 104-108.
- [16] Liu, H.M. The mechanism of equity mixing affecting the level of financial risk--The mediation effect test based on inefficient investment. *Journal of Chongqing University of Technology (Social Science)*, 2019, 33(05), 89-100.
- [17] Su, K.; Zhang, J.R.; Yang, S. Ultimate control, legal environment and corporate financial risk-Evidence from private listed companies in China. *Contemporary Economic Science*, 2010, 32(05), 80-87+127.
- [18] Lei, Z.; Gong, G.M.; Xu, L.P. Foreign Exchange Exposure, Equity Concentration and Financial Risk-An Empirical Study Based on Listed Export Companies. *Finance and Economics Theory and Practice*, 2017, 38(05), 79-85.
- [19] Lv, X.J.; Chen, Z.B.; Li, D.Y. et al. Government regulation and corporate financial risk-Empirical evidence from Chinese A-share listed companies. *Accounting and Economic Research*, 2020, 34(05), 56-67.
- [20] Zhao, N.; Song, Z.X.; Li, P. et al. Impact of digital transformation on corporate financial risk. *Scientific Decision Making*, 2022, 12, 21-36.
- [21] Jin, D.; Pang, X.H. The impact of digital finance on corporate financial risk--Based on the empirical data of A-share listed companies in China. *Wuhan Finance*, 2023, 08, 80-88.
- [22] Luo, L.Q. Exploration on the application of artificial intelligence in enterprise financial risk prevention and control under big data environment. *Shanghai Business*, 2023, 11, 147-149.
- [23] Yu, M.T.; Gang, H. Digital transformation and corporate off-site mergers and acquisitions - A perspective based on financing constraints and information asymmetry. *Wuhan Finance*, 2023, 09, 53-61.
- [24] Zhang, A.P. Information Asymmetry:Theoretical Analysis and Policy Path of Financing Risks of Small and Medium-sized Foreign Trade Enterprises. *Finance and Economy*, 2010, 10, 22-25.
- [25] Yin, Z.C.; Gan, L. Information asymmetry, firm heterogeneity and credit risk. *Economic Research*, 2011, 46(09), 121-132.
- [26] Wang, L.; Zhang, X.L.; Chi, G.H. The impact of internal control on bank credit risk-the mediating effect of information asymmetry and agency cost. *Financial Forum*, 2019, 24(11), 14-23+54.
- [27] Gomber, P.; Kauffman, R.J.; Parker, C. et al. On the fintech revolution: Interpreting the forces of innovation,disruption,and transformation in financial services. *Journal of Management Information Systems*, 2018, 35(1), 220-265
- [28] Xu, F.; He, J. Digital Finance Development and Corporate Financial Risk-Based on Financing Constraints and Information Asymmetry Perspective. *Research on Technical Economy and Management*, 2022, 07, 60-65.

- [29] Xu, P.; Xu, X.Y. Logic and analytical framework of enterprise management change in the era of artificial intelligence. *Management World*, 2020, 36(01), 122-129+238.
- [30] Yao, Y.F.; He, X.Y. The corporate governance role of artificial intelligence application - based on financial restatement perspective. *Industrial Technology and Economics*, 2023, 42(03), 125-134.
- [31] Wu, F.; Hu, H.Z.; Lin, H.Y. et al. Corporate digital transformation and capital market performance-empirical evidence from stock liquidity. *Management World*, 2021, 37(07), 130-144+10.
- [32] Yu, F.S.; Zhang, M.; Jiang, F.X. et al. Does corporate governance affect corporate financial risk? *Accounting Research*, 2008, 10, 52-59+97.
- [33] Srinivasan, S. Consequences of financial reporting failure for outside directors:evidence from accounting restatements and audit committee members. *Journal of Accounting Research*, 2005, 43, 291-315.



© 2025 by the author(s); licensee International Technology and Science Publications (ITS), this work for open access publication is under the Creative Commons Attribution International License (CC BY 4.0). (<http://creativecommons.org/licenses/by/4.0/>)