

# ***A Review of Enterprise Management and Risk Assessment Methods in the Field of Corporate Finance in the Past Decade***

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**Abstract:** Over the past decade, enterprise management and risk assessment methods in the field of corporate finance have received extensive attention. Enterprises need to balance financial stability and sustainable development in a complex and changing economic environment. This article systematically combs the core theories of enterprise management (such as corporate governance, agency theory) and their practical applications in modern finance. The combination of literature research and case analysis, coupled with risk assessment methods such as data analysis technology, VaR model, and Monte Carlo simulation, enables a comprehensive investigation into the interrelationship between management practice and risk control. The research data is derived from the latest literature and integrates financial big data and artificial intelligence application cases, covering different types of assessment methods such as market risk and credit risk. The findings of the research demonstrate that effective enterprise management provides the fundamental basis for scientific risk assessment, and innovative assessment tools assist enterprises in effectively controlling risks in financial decision-making and achieving long-term value maximization.

**Keywords:** Corporate finance, Enterprise management, Risk assessment methods.

## **1. Introduction**

Over the past decade, enterprise management and risk assessment have garnered significant attention in the field of corporate finance. With the deepening of economic globalization and digital transformation, enterprises face increasing uncertainties. According to Qu Rong, risk assessment methods that only consider financial indicators while neglecting non-financial indicators often lead to partial and inaccurate evaluation results[1]. Particularly under the impact of unexpected events such as the COVID-19 pandemic, enterprises need to balance financial and non-financial data to establish a more comprehensive risk assessment system. Chen further emphasizes that financial accounting risk control and prevention mechanisms in modern enterprise management have profound implications for enterprises' stable operation and long-term development[2].

Currently, the global economic situation is complex and volatile, with intensifying geopolitical risks and emerging supply chain vulnerabilities, all of which pose new challenges to enterprise management. Traditional management methods and risk assessment tools have proven inadequate in addressing these emerging risks. Although technologies such as big data and artificial intelligence

have been gradually applied to risk assessment, research gaps still exist in multi-dimensional data integration and the adaptability of assessment tools. Particularly in new domains such as cross-border operations, digital transformation, and climate change, enterprises urgently need to establish more flexible and forward-looking management mechanisms.

This study focuses on the synergy between enterprise management and risk assessment in the field of corporate finance. Through literature research and case analysis, it explores how enterprise management promotes the development of risk assessment systems and how emerging technologies enhance risk identification and control capabilities. This research not only examines traditional financial risk indicators but also extends its perspective to multiple dimensions including operational risk, market risk, and credit risk, attempting to construct a more comprehensive and systematic analytical framework. Furthermore, this paper emphasizes how enterprises can leverage new technologies to enhance risk management capabilities in the digital era, thereby providing robust support for sustainable development.

## **2. Enterprise Management Overview**

### **2.1. Definition and Importance of Enterprise Management in Corporate Finance**

Enterprise management refers to the process of planning, organizing, leading, and controlling various resources including human, financial, material, information, and technology under the influence of internal and external business environments to achieve specific strategic and operational objectives. In modern enterprise operations, an effective management system not only relates to daily operational efficiency but also serves as a key guarantee for achieving strategic goals. Vasylyshyna et al. found that digital management significantly impacts enterprise financial risk; based on the coefficient of variation in financial ratios, they classified financial risks into five categories: minimum, low-permissible, critical, and catastrophic, providing more precise evaluation criteria for enterprise risk management[3].

In the context of globalization and digitalization, the connotation of enterprise management has further expanded to encompass sustainable development, social responsibility, and innovation management. This transformation is reflected not only in management concepts but also in specific management practices. Enterprises need to establish more agile and adaptive management systems to respond to rapidly changing market environments. Li et al. developed an enterprise financial risk early warning system using logistic regression algorithms under multiple uncertainty environments, capable of analyzing various risk factors both discrete and continuous, providing important references for enterprises' digital transformation[4]. This data-driven management approach signifies that enterprise management is evolving toward greater refinement and intelligence.

### **2.2. Main Theories of Enterprise Management in the Past Decade**

#### **2.2.1. Corporate Governance Theory**

Corporate governance represents a fundamental aspect of contemporary enterprise management, dedicated to balancing the rights and obligations of stakeholders including shareholders, management, and the board of directors. Effective corporate governance not only enhances operational efficiency but also strengthens market competitiveness. Research by Kwateng et al. demonstrates that improved corporate governance structure significantly correlates with information technology security levels, which has crucial implications for enterprise risk prevention[5]. Particularly in the digital economy era, information security has become an essential component of corporate governance, requiring enterprises to establish more comprehensive governance mechanisms to address various risk challenges.

### **2.2.2. Agency Theory**

The separation of ownership and management in modern enterprises has led to agency problems. This issue not only affects operational efficiency but may also introduce significant management risks. Lin et al. identified key indicators from financial risk metrics using association rule algorithms in the context of big data, providing data support for reducing agency costs[6]. Research indicates that establishing scientific assessment mechanisms and incentive systems can effectively reduce agency costs and improve management efficiency. Particularly in the big data era, the application of data analytics offers new approaches to resolving agency problems.

### **2.2.3. Resource Dependence Theory**

Resource dependence theory posits that enterprises cannot be entirely self-sufficient and must rely on key resources from the external environment. This dependency relationship necessitates the establishment of effective resource acquisition and allocation mechanisms. Hu and Muhamed proposed a risk conduction model comprising three elements: risk source, risk flow, and risk carrier, finding that risk transmission capabilities vary among different financial markets[7]. This discovery provides important insights into how enterprises can manage external resource dependencies and prevent and control related risks.

### **2.2.4. Other Related Theories**

Beyond mainstream theories, emerging management theories such as stakeholder theory also influence contemporary enterprise management practices. Gregor D et al.'s research demonstrates that corporate social responsibility is closely correlated with risk management levels [8].

## **2.3. Practical Applications of Enterprise Management**

### **2.3.1. Internal Control and Management Decision-making**

The internal control system plays an integral role in providing support for effective enterprise management. The objective of the internal control system is to standardise business activities within the enterprise and to prevent the occurrence of risk events by establishing supervision, management and control mechanisms. Luo et al. indicated that tax risk management has become an integral part of enterprise risk management, and establishing comprehensive internal control systems can effectively prevent various operational risks[9]. This systematic management approach not only enhances corporate compliance but also strengthens risk resistance capabilities.

### **2.3.2. Financial Management and Resource Allocation**

Financial management is central to enterprise management, with its importance manifested in resource allocation optimization and value creation. Xu and Kong proposed scientific risk assessment methods based on the Analytic Hierarchy Process (AHP) for evaluating enterprise financial risks, providing theoretical foundations for resource optimization[10]. This approach incorporates both quantitative analysis of financial indicators and qualitative factor assessment, making resource allocation decisions more scientific and rational.

### **2.3.3. Management Incentives and Risk Control**

The design of the management incentive mechanism should balance the motivation for performance enhancement and the prevention of moral hazard. An effective incentive system needs to align

management's interests with long-term enterprise value creation while maintaining appropriate risk control boundaries. This involves combining short-term performance metrics with long-term value indicators to prevent excessive risk-taking.

Lyudmila Kirina et al. emphasize the importance of impact assessment in financial risk management under the context of digitalized management [11]. Digital technologies enable more precise measurement of performance-risk relationships, while modern incentive systems increasingly incorporate risk-adjusted performance measures to encourage prudent decision-making and sustainable development.

### **3. Enterprise Financial Risk Assessment Methods and Models**

#### **3.1. Definition and Importance of Risk Assessment**

Risk assessment is the process of identifying, analyzing, and evaluating risks, aimed at providing a foundation for risk management decisions. In enterprise financial management, scientific risk assessment plays a crucial role in preventing potential losses and achieving stable operations. Xia Li emphasizes that enterprises must comprehensively implement the concept of enterprise value enhancement in financial management and establish a risk assessment system based on enterprise value maximization[12]. Such assessment systems should not only focus on maximizing current profits but also consider long-term profit growth, achieving sustainable development through risk minimization.

#### **3.2. Main Risk Assessment Methods and Models**

##### **3.2.1. VaR Model (Value at Risk)**

The Value at Risk (VaR) model is a commonly used financial risk measurement method that expresses potential maximum losses of financial assets or portfolios within a specific future period at a given confidence level through a single value. This model considers the volatility of risk factors such as market prices, interest rates, and exchange rates, enabling better quantification of market risks. However, the VaR model has certain limitations, such as insufficient description of extreme scenarios and high requirements for data quality. Therefore, in practical applications, enterprises often need to combine it with other assessment methods to construct more comprehensive risk assessment systems.

##### **3.2.2. Monte Carlo Simulation**

Monte Carlo simulation estimates numerical solutions to complex problems through random sampling experiments. In financial risk assessment, it simulates future return distributions of asset portfolios by randomly generating paths of risk factor changes. This method offers considerable flexibility and can handle various non-linear and non-normal distribution situations. Particularly in dealing with complex financial products and investment portfolios, Monte Carlo simulation can provide more comprehensive and accurate risk assessment results. However, it should be noted that this method has high computational complexity, requiring a balance between efficiency and precision in practical applications.

##### **3.2.3. Scenario Analysis**

Scenario analysis examines the risks and potential losses faced by enterprises under a series of possible future scenarios. These scenarios typically include baseline, optimistic, and pessimistic scenarios, with each representing different market conditions and risk factor combinations. The

analysis process involves developing detailed assumptions and evaluating potential financial impacts under each scenario.

The advantages of scenario analysis lie in its intuitiveness and comprehensibility, along with its ability to incorporate both quantitative and qualitative analysis. It helps management visualize different future states and prepare corresponding response strategies. However, scenario setting tends to be subjective and may overlook low-probability events with significant impact, known as "black swan" events. The effectiveness of this method heavily depends on the quality of scenario design and the reasonableness of underlying assumptions.

#### **3.2.4. Sensitivity Analysis**

Sensitivity analysis serves as a crucial quantitative method for gauging the impact of risk factor changes on enterprise financial conditions. The basic approach involves systematically changing the value of a risk variable while keeping other variables constant and observing the response of dependent variables. The implementation typically focuses on key risk variables such as interest rates, exchange rates, commodity prices, or operational metrics.

Sun W et al.'s research demonstrates that sensitivity analysis can effectively identify key risk factors and provide direction for enterprise risk management [13]. Through both single-factor and multi-factor approaches, enterprises can better understand which factors have the most significant influence on their financial outcomes, thereby enhancing management prioritize risk control measures and develop more targeted mitigation strategies.

### **3.3. Emerging Technologies in Risk Assessment**

#### **3.3.1. Big Data and Risk Assessment**

The development of big data technology has revolutionized enterprise risk assessment by introducing more sophisticated and comprehensive analytical approaches. Through the "4V" characteristics of big data (Volume, Velocity, Variety, and Veracity), enterprises can now process and analyze massive amounts of structured and unstructured data in real-time. The collection and analysis of large-scale datasets enable enterprises to identify risk factors more comprehensively and describe risk event patterns more accurately.

Specifically, big data technology enhances risk assessment in several key aspects. First, it enables real-time monitoring of various risk indicators, allowing enterprises to detect potential risks at their earliest stages. Second, through advanced data mining techniques, enterprises can uncover hidden correlations between different risk factors, providing deeper insights into risk formation mechanisms. Third, the integration of external data sources (such as market trends, social media sentiment, and macroeconomic indicators) with internal operational data creates a more holistic view of the enterprise's risk landscape.

#### **3.3.2. Application of Artificial Intelligence in Risk Prediction**

Machine learning, deep learning, and other artificial intelligence technologies demonstrate tremendous potential in financial risk prediction. These algorithms can independently learn risk patterns from massive historical data and construct more sophisticated prediction models. The AI-driven approach enables real-time risk monitoring and early warning capabilities through continuous data analysis and pattern recognition.

Compared to traditional statistical models, intelligent algorithms show distinct advantages in risk prediction. They can process unstructured data (such as news articles, social media content, and market sentiment), automatically capture complex relationships between various risk factors, and

continuously self-iterate and optimize their prediction accuracy. This dynamic learning capability makes AI particularly valuable in identifying emerging risks and adapting to changing market conditions, ultimately providing enterprises with more proactive and precise risk management solutions.

#### **4. Relationship Analysis between Enterprise Management and Risk Assessment**

##### **4.1. Influence Mechanism of Enterprise Management on Risk Assessment**

###### **4.1.1. Corporate Governance Structure and Risk Control**

Corporate governance structure represents the foundational level of enterprise management, serving as the institutional framework for risk control and decision-making processes. Effective governance structures help balance stakeholder demands, control agency costs, and improve risk management efficiency through systematic institutional arrangements and clear accountability mechanisms.

As the primary responsible body for corporate governance, the board of directors' professional capabilities, independence, and internal checks and balances directly affect the formulation and execution of enterprise risk management strategies. The board's composition, particularly the proportion of independent directors and the establishment of specialized committees (such as risk management committee and audit committee), plays a crucial role in enhancing risk oversight effectiveness. These committees provide professional guidance and supervision in their respective areas, ensuring comprehensive risk assessment and timely response measures.

###### **4.1.2. Management Decision-making and Risk Identification**

Management decision-making spans multiple aspects including strategy formulation, resource allocation, and business execution. Each decision contains potential risks, and management's risk awareness, decision-making style, and information processing capabilities directly influence enterprise risk identification and response. This is particularly important when expanding into new markets or making major investment decisions, ensuring decisions are based on comprehensive risk understanding.

###### **4.1.3. Financial Control and Risk Response**

Financial control is a crucial component of enterprise management, aiming to reasonably allocate capital resources, improve capital utilization efficiency, and control financial risks. Comprehensive budget management, cost control, investment and financing management, and other financial control measures can timely identify potential financial risks and adopt corresponding risk avoidance, transfer, or hedging strategies. Meanwhile, implementing prudent financial policies, including moderate debt levels and adequate cash reserves, is an important tool for responding to external shocks and maintaining financial stability.

##### **4.2. Synergy between Enterprise Management and Risk Assessment in Corporate Finance**

Corporate finance represents the core of modern enterprise operations, with enterprise management and risk assessment forming its two pillars. From a corporate finance perspective, high-level enterprise management is the foundation of corporate financial decision-making. Scientific strategic planning, efficient organizational operations, and sound financial management provide directional guidance and institutional guarantees for enterprise investment and financing decisions, capital operations, mergers and acquisitions, and other financial activities. Good enterprise management



helps improve the quality of corporate financial decisions, reduce decision-making risks, and establish a positive image in the capital market.

Effective risk assessment provides reliable guidance for enterprise financial decisions. Through comprehensive identification and scientific evaluation of market risks, credit risks, operational risks, and other risks faced by enterprises, it provides a basis for management to weigh risks and returns in financial decisions. Risk assessment results reveal the risk characteristics and potential impacts of different financial decision options, helping management make prudent choices.

## 5. Conclusion

This article summarizes the research progress of enterprise management and risk assessment in the field of corporate finance within the past decade. Theories such as corporate governance, agency cost, and resource dependence provide a theoretical basis for the relationship between the two. The internal control system, financial risk management, and incentive mechanism are the key points of management practice. With the popularization of big data and artificial intelligence, enterprise risk assessment is gradually becoming intelligent and is gradually achieving organic integration with enterprise management, providing accurate support for management decisions.

The limitation of this research lies in that it mainly focuses on the internal management mechanism and risk assessment methods of enterprises, and the analysis of the external macro environment and industry characteristics is relatively limited. Future research can be extended to external environmental factors and deepen the discussion in subdivided fields. Further research should be conducted on the trend of risk assessment driven by technology. Big data, blockchain, and artificial intelligence will make the assessment more real-time and refined, providing comprehensive support for decision-making. At the same time, enterprise management and risk assessment may be integrated to form a collaborative governance structure. In addition, the role of ESG (environment, society, governance) factors in risk management is becoming increasingly prominent, and incorporating them into the assessment system will help improve enterprise competitiveness and social trust.

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