

Research on Accounting Treatment of Data Assets

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Abstract: In 2024, Chinese enterprises officially implemented the "Interim Provisions on Accounting Treatment Related to Enterprise Data Resources". The inclusion of data resources in financial statements prompts enterprises to pay attention to the recognition, measurement, recording, and reporting of data resources. However, there are issues such as unclear institutional norms, inconsistent interpretations of regulations, inadequate transparency in information disclosure, and imperfect regulatory mechanisms. Corresponding improvement suggestions and further research directions are proposed, aiming to provide a reference for enterprises and relevant departments to improve the accounting treatment of data assets and support the steady development of enterprises in the wave of the digital economy.

1. Introduction

In the digital economy era, data, as a critical production factor, has increasingly demonstrated its value and become a vital component of an enterprise's core competitiveness, playing a key role in strategic decision-making, operational management, and value creation among other aspects (Zhang and Jin, 2022[1]; Wang and Yang, 2024[2]). Against this backdrop, accurate and standardized accounting treatment of data assets is not only an urgent need for corporate financial management but also an inevitable requirement to align with the development trend of the digital economy (Xu, Zhang et al., 2022[3]). The "Interim Provisions on Accounting Treatment Related to Enterprise Data Resources" issued by the Ministry of Finance in 2023 (hereinafter referred to as the "Interim Provisions") provides important guidance and norms for the accounting treatment of enterprise data assets. However, numerous challenges remain in practice. This study aims to analyse the current status, problems, and improvement directions of incorporating data resources into financial statements since the implementation of the "Interim Provisions" offering theoretical and practical guidance for further refining the accounting treatment of data assets.

2. Practical Analysis of Incorporating Data Resources into Financial Statements

According to the "Interim Provisions" issued by the Ministry of Finance in 2023, Chinese enterprises began to include data resources in their financial statements from January 1, 2024, specifying that data resources owned by enterprises can be recorded in items such as inventory, intangible assets, and development expenditures based on actual circumstances. A statistical analysis of the data resources disclosed by listed companies in 2024 revealed that data resources have become one of the important assets of enterprises. In the semi-annual reports, a total of 41 companies included

data resources in their intangible assets, development expenditures, and inventory, with a total disclosed amount reaching 1.4 billion yuan. However, there are differences in the measurement and disclosure of data resources among different companies, which may be related to the lack of uniformity in the recognition and valuation of data resources in the current market. The disclosure of data resources in the semi-annual reports of listed companies in 2024 is shown in Table 1, with a detailed analysis as follows:

In terms of intangible assets, 26 companies have measured their data resources as intangible assets, while 6 companies have data resources recorded in both "intangible assets" and "development expenditures." Notably, Guandian Defense (688287) tops the list with intangible assets of data resources valued at RMB 30.3 million, demonstrating its substantial investment in this area. It is worth mentioning that a significant number of companies have yet to disclose data resources as intangible assets, which may indicate that their investments in data resources have not yet reached a level sufficient to be recognized as intangible assets or that they have not fully recognized the value of data resources.

In terms of development expenditures, 18 companies have measured their data resources as such. Notably, China Telecom (601728) and China Unicom (600050) have incurred significant development expenditures, amounting to RMB 110 million and RMB 80 million respectively, demonstrating their robust capabilities in developing data resources. However, some companies have yet to disclose data resources in their development expenditures, which may indicate that they have not yet initiated relevant data resource development projects or have not separately itemized the development expenditures for these resources.

In terms of inventory, compared to intangible assets and development expenditures, only five companies measure data resources as inventory, while two companies, namely Haike Xinyuan (301292) and Guarddata Defense (688287), account for data resources in both "intangible assets" and "inventory". Among them, Haike Xinyuan (301292) has an inventory amount of up to RMB 250 million, ranking first. This may indicate that there is currently a lack of uniformity in the recognition and valuation of data resources in the market, causing some companies to face confusion when selecting measurement methods.

Table 1: Disclosure of Data Resources in Semi-Annual Reports of Listed Companies in China

Item	Number of Companies	Amount(in Billion RMB)
Classified as "Intangible Assets"	26	5.88
Classified as "Development Expenses"	18	3.03
Classified as "Inventory"	5	4.73
Classified in Both "Intangible Assets" and "Development Expenses"	6	1.12
Classified in Both "Intangible Assets" and "Inventory"	2	4.51

3. Shortcomings in the Practice of Incorporating Data Resources into Financial Statements

3.1. Ambiguous Regulatory Norms and Lack of Specific Operational Guidelines

The official implementation of the "Interim Provisions" marks a new phase in the accounting treatment of data resources in China. However, these Interim Provisions still appear relatively vague in practical application, lacking specific operational guidelines and detailed rules. When incorporating data resources into the balance sheet, enterprises need to rely on documents such as

"Accounting Standards for Enterprises No. 6 – Intangible Assets" and "Accounting Standards for Enterprises No. 1 – Inventory" for judgment. Yet, these documents are difficult to fully apply to data resources, which are a new type of production factor characterized by strong liquidity, diverse sources, unclear ownership definitions, and dynamic value changes. These characteristics pose numerous difficulties and disagreements for enterprises in practical operations. Therefore, the ambiguity of regulatory norms is one of the main issues currently facing the accounting treatment of data resources.

3.2. Inconsistent Interpretation of Regulations and Discrepancies in Policy Implementation

Due to variations in business application scenarios, data sources, and competitive landscapes among enterprises, there is a lack of uniformity in the understanding of the "Interim Regulations." This has resulted in deviations in policy implementation among enterprises, making it difficult to establish consistent operational standards. Some enterprises have inaccurately interpreted the regulations or even misunderstood them, leading to issues such as ineffective or incorrect inclusion of data resources in financial statements. Furthermore, the inclusion of data resources in financial statements involves the collaborative efforts of multiple departments, including business, finance, and legal departments. Some enterprises lack sufficient capabilities in collaborative management and operation, making it difficult to effectively implement the inclusion of data resources in financial statements.

3.3. Low Transparency and Significant Differences in Disclosure Information

Firstly, despite the relevant departments having established certain norms for the accounting treatment and information disclosure of data resources in recent years, significant variations still exist in the classification, measurement, and disclosure practices of data resources among different enterprises, industries, and even regions in actual operations. This makes it difficult to conduct horizontal comparisons and analyses of data resource information among different companies. Secondly, when disclosing information related to data resources, enterprises often face issues such as incomplete disclosure content, inconsistent disclosure formats, and low disclosure quality. This makes it challenging for investors and regulatory agencies to accurately understand the status and value of enterprises' data resources, thereby affecting market fairness and transparency. Lastly, some listed companies may lag in disclosing data resources, failing to promptly reflect the latest changes and market dynamics of their data resources. This could lead to investors and stakeholders being unable to obtain accurate data resource information in a timely manner, potentially resulting in incorrect decisions.

3.4. Inadequate Regulatory Mechanism and Lack of Effective Oversight

In terms of the supervision and review of accounting treatment for data resources, China still faces some shortcomings. On one hand, relevant subordinate departments and industry associations have not yet further refined relevant guidance opinions and implementation details, resulting in a regulatory gap between policy issuance and corporate execution. On the other hand, intermediaries such as accounting firms lack clear norms and bases when reviewing accounting treatment reports for data resources. This has led to some companies "playing it safe" or even committing irregularities such as false disclosure and misleading statements when disclosing information related to data resources. Additionally, the superimposed effects of market regulation and financial regulation tend to dampen the enthusiasm of companies that have not yet adopted relevant practices, causing them to either "not know how to adopt" or "dare not adopt" them.

4. Shortcomings in the Practice of Incorporating Data Resources into Financial Statements

4.1. Clarify Data Standards and Strengthen Institutional Guidance

Addressing the issue of unclear institutional norms, firstly, relevant national departments should promptly issue more specific and detailed operational guidelines for accounting treatment of data resources, clarifying the specific requirements for the definition, classification, measurement, and disclosure of data resources. These guidelines should fully consider the characteristics of data resources, such as liquidity, diversity of sources, and ownership definition, to provide more targeted guidance. Secondly, an expert consultation mechanism for accounting treatment of data resources should be established, inviting experts, scholars, and enterprise representatives in related fields to jointly participate in the formulation and improvement of institutional norms, ensuring that the system can fully reflect the opinions and suggestions of all parties and improving the operability and adaptability of the system. Finally, a feedback, complaint, and reporting mechanism for accounting treatment of data resources can be established to encourage enterprises to provide feedback and complaints on issues encountered during policy implementation, and to promptly respond to and handle these feedback and complaints in order to continuously improve and optimize relevant policies.

4.2. Deepen Regulation Interpretation and Strengthen Collaborative Management

Addressing the issue of inconsistent interpretation of regulations, firstly, relevant national departments should enhance the promotion and training of institutional norms, by issuing interpretation documents, convening interpretation meetings, and other means, to improve enterprises' understanding and execution of institutional norms. Secondly, a communication mechanism for the accounting treatment of data resources should be established to encourage exchanges and cooperation among enterprises and between enterprises and government departments, jointly exploring and solving problems in the accounting treatment of data resources, and forming consistent operational standards. In addition, internal collaborative management within enterprises should be strengthened by clarifying the responsibilities and divisions of labour of various departments in the process of incorporating data resources into financial statements, establishing cross-departmental working groups, and enhancing communication and collaboration to ensure the smooth progress of incorporating data resources into financial statements. Finally, training and education on the accounting treatment of data resources should be strengthened by inviting authoritative experts in the industry to teach, thereby improving the professional knowledge and skills of enterprise financial personnel in mastering the accounting treatment of data assets.

4.3. Clarify Disclosure Standards and Strengthen Transparent Oversight

Addressing the issue of inadequate transparency in information disclosure, firstly, relevant national departments should establish unified standards and formats for information disclosure of data resources. These should clearly define the content, format, and quality requirements for disclosure, and strengthen supervision and review of corporate information disclosure. A reward and punishment mechanism for information disclosure should be established, commending and rewarding enterprises with high-quality disclosure while penalizing and exposing those with low-quality disclosure, thereby incentivizing enterprises to improve the transparency and quality of their information disclosure. Secondly, enterprises can establish internal audit mechanisms to strengthen the management and review of information disclosure of data resources, ensuring that the disclosed information is true, accurate, and complete, and preventing the occurrence of false disclosure and misleading statements. Finally, enterprises are encouraged to strengthen voluntary information disclosure by providing more

information about data resources, which will help investors and regulatory authorities better understand the status and value of an enterprise's data resources, thereby enhancing market fairness and transparency.

4.4. Strengthen Regulatory Mechanisms and Enhance Audit Oversight

Addressing the issue of inadequate regulatory mechanisms, firstly, relevant national departments should intensify their supervision and review of the accounting treatment of data resources. This can be achieved by establishing specialized regulatory bodies or departments responsible for overseeing and auditing enterprises' accounting treatments for data resources. Secondly, the supervision and management of intermediaries such as accounting firms should be enhanced. Standards and norms for reviewing data resource accounting treatment reports by intermediaries should be established to ensure they adhere to relevant regulations and guidelines during the review process, thereby improving the quality and accuracy of audits. Lastly, the synergy between market regulation and financial regulation should be strengthened to form a unified force in intensifying the supervision and review of accounting treatments for data resources, thereby avoiding the superimposed effects of market and financial regulation that may impose unnecessary burdens and impacts on enterprises.

5. Future Research Directions for the Inclusion of Data Resources in Financial Statements

5.1. Research on the Differences in Accounting Treatment of Data Assets across Industries

Data assets in different industries resemble treasures of various shapes and forms, each possessing unique characteristics and value drivers. Future research can focus on delving deeper into the accounting treatment methods for data assets in diverse industries, offering more tailored guidance to enterprises across sectors. For example, data assets in the financial industry primarily revolve around customer credit data and transaction data. The value assessment and accounting treatment of these data may differ significantly from those of data assets in the manufacturing industry (such as production process data and equipment operation data) in terms of recognition, measurement, and disclosure. By studying these differences, more suitable accounting treatment solutions can be tailored for enterprises.

5.2. Optimization of Data Asset Value Assessment Models

The current methods for assessing the value of data assets still have certain limitations. Future research can strive to further optimize value assessment models, enhancing their accuracy and reliability. By incorporating more technical means and market factors into consideration, a more suitable assessment model that aligns with the characteristics of data assets can be constructed, enabling enterprises to more precisely grasp the value of their data assets.

5.3. Research on the Relationship between Data Assets and Corporate Sustainable Development

Data assets have a crucial impact on the sustainable development of enterprises. By conducting in-depth analysis and effective utilization of data assets, enterprises can gain a sharper insight into market demands and customer behaviours, thereby optimizing products and services, and enhancing their operational efficiency and profitability. Future research can focus on dimensions such as how data assets influence a company's long-term competitiveness and their role in promoting environmental and social sustainable development goals, providing more forward-looking and

constructive references for enterprises to formulate long-term development strategies.

6. Conclusion

In the context of data resources increasingly becoming the core competitiveness of enterprises, the accounting treatment of data resources, as a crucial component of corporate financial management, has become increasingly important and complex. This paper first analyses the current situation of Chinese enterprises implementing the inclusion of data resources in financial statements according to the "Interim Provisions" issued by the Ministry of Finance on January 1, 2024. It reveals the representation of data resources as emerging assets in financial statements and their impact on corporate value. However, we have also identified numerous shortcomings in the process of including data resources in financial statements, such as unclear institutional norms, inconsistent interpretation of regulations, low transparency of information disclosure, and inadequate regulatory mechanisms. These issues severely limit the accuracy and effectiveness of data resource accounting treatment. In response to these shortcomings, this paper proposes targeted improvement suggestions to better reflect the value of enterprises' data assets. Additionally, this paper outlooks the future research directions of data resource inclusion in financial statements, including research on the differences in data asset accounting treatment across different industries, optimization of data asset value assessment models, and the relationship between data assets and corporate sustainable development. These efforts aim to provide a reference for the continuous development of data resource accounting treatment theory and practice. In summary, the research in this paper not only helps deepen our understanding and knowledge of data resource accounting treatment but also provides valuable guidance and reference for corporate financial management and sustainable development.

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