

## **An Empirical Study on the Impact of Data Asset Evaluation Policies on Stock Prices of Listed Companies**

Jiajia Du<sup>1</sup>,  
Yaqin Dou<sup>2,\*</sup>,  
Ting Hu<sup>3</sup>  
Lufan Chen<sup>4</sup>  
Yuxin Zhang<sup>5</sup>

\*Corresponding author

<sup>1</sup>Nanjing Institute of Technology, Nanjing, China, 2811146156@qq.com

<sup>2</sup>Professor, NJIT Institute of Industrial Economy and Innovation Management, Nanjing, China, douyq@njit.edu.cn

<sup>3</sup>Nanjing Institute of Technology, Nanjing, China, 2598793256@qq.com

<sup>4</sup>Nanjing Institute of Technology, Nanjing, China, 502472929@qq.com

<sup>5</sup>Nanjing Institute of Technology, Nanjing, China, 1329376348@qq.com

### **ABSTRACT**

As a new type of production factor, data assets have enormous value and application potential. However, in the domestic market, there has always been a lack of specific and unified standards for data asset evaluation, which to some extent affects the full utilization and value of data assets. The implementation of data asset evaluation will have a huge impact on various industries, especially data intensive industries. In order to examine the impact of data asset evaluation policy announcements on stock prices, this article collects stock price data from listed companies in data intensive industries, and uses the event study method to empirically analyze the market response to data asset evaluation policy announcements from 2021 to 2024. The research results indicate that the mean cumulative abnormal return CAR of the entire sample during the window period [-15, 15] is -0.53%, indicating that data asset evaluation policies have a significant negative impact on the stock prices of data asset intensive industries listed. Finally, based on the research findings, it is suggested that policy makers should pay attention to the differences in policies across different industries and improve data asset evaluation policies.

*Keywords: Data Intensive Industries, Data Asset Evaluation Policies, Event Study Methods, Stock Prices*

### **INTRODUCTION**

#### **Research Background**

Since 2019, countries around the world have been issuing announcements regarding their data strategies. In 2020, China included data as one of its key factors of production. In the era of the digital economy, data assets have emerged as one of the most critical assets for businesses, serving as a driving force for new waves of economic development and innovation optimization, as well as a vital strategic resource to enhance national competitiveness. However, the management of data assets in China is still in its early stages, with a lack of established and mature evaluation methods. To standardize the appraisal of data assets and the associated industries, relevant national authorities and institutions have introduced several policies, which are highly significant for stakeholders such as banks and investors. A clear evaluation framework not only helps investors better understand asset value and mitigate investment risks, but also facilitates more informed investment decisions, improves market transparency, and ultimately safeguards investor interests. Nevertheless, the introduction of these evaluation standards could lead to fluctuations in the assessed value of data assets held by listed companies, potentially impacting stock prices. Did the implementation of data asset evaluation policies increase or decrease shareholder wealth in the short term? Are there differences in how these policies affect stock prices across industries, particularly those that are heavily reliant on data assets? These questions warrant close attention from all sectors of society. As a critical factor of production in the new era, the formulation and enforcement of data asset evaluation policies will directly shape the valuation and market performance of corporate data assets. This study aims to conduct an in-depth analysis of the impact of data asset evaluation policies on the stock prices of listed companies operating in data asset-intensive industries, building on a systematic review of China's data asset policies.

#### **Research Significance**

Firstly, with the rise of the digital economy, data assets have become an integral component of a company's core competitiveness. The introduction of data asset evaluation policies will have a direct bearing on how companies are valued. This paper examines the impact of data asset valuation policies on the stock prices of listed companies, offering deeper insights into the intrinsic connection between these policies and stock price movements. By conducting empirical research on policy-driven stock price fluctuations, the study uncovers the practical mechanisms through which such policies affect corporate value, providing investors

with valuable theoretical guidance. Secondly, the empirical findings of this paper can offer feedback to policymakers, assisting them in evaluating the effectiveness and reasonableness of the policies. This, in turn, supports the refinement and optimization of relevant regulations. Additionally, regulatory bodies can leverage the research outcomes to identify issues and challenges during policy implementation, enabling them to enhance supervision and guidance in a targeted manner, thereby ensuring market stability and sustainable growth. Thirdly, understanding how data asset valuation policies influence stock prices enables a better grasp of market dynamics, aiding companies in formulating sound strategic plans and investment decisions. For investors, this study provides an effective analytical framework to more accurately assess the value and potential of listed companies, empowering them to make more informed investment choices. In conclusion, the empirical investigation into the impact of data asset valuation policies on the stock prices of listed companies holds significant theoretical and practical importance, contributing to the healthy advancement of the digital economy era.

### **Research Status at Home and Abroad**

The study of data asset valuation policies and their effects on stock prices is a critical research topic that has garnered extensive attention from scholars both domestically and internationally. Below is a review of relevant literature:

#### ***Research Status Abroad***

**Definition Scope of Data Assets and Data Asset Valuation Standards.**

Lesslar *et al.* (1998) highlighted that the absence of clear data ownership has long been a pivotal issue in the realm of data assets. The value of data assets is typically tied to factors such as the commercial benefits they generate, as well as rights related to usage and control. When ownership is unclear, evaluating these factors becomes more complex and ambiguous, and may also lead to legal non-compliance. Paula (2016) examined specific profit-generating projects involving data—namely oil and maritime operations—and argued that the evaluation of data assets should encompass past costs, current value, and future benefits. Assessing data assets requires a comprehensive consideration of all relevant factors (Wei *et al.*, 2022). Past costs represent the investments made in creating, collecting, processing, and maintaining the data assets; current value reflects their actual utility and market demand at present; and future benefits highlight the growth potential and business opportunities these assets might offer. Wang (2021) described data as raw material, defining data assets as identifiable non-monetary assets in digital form that are owned or controlled by enterprises. Xu *et al.* (2024) characterized data assets as resources owned or controlled by enterprises, possessing real or potential value, compliant with data regulations, and recorded electronically. He provided a clear and thorough definition of data assets and emphasized that discussions on their evaluation should follow data classification.

**Data asset policies and their impact on listed companies' stock prices.**

In terms of policy, foreign research on data assets increasingly focuses on issues such as data asset protection and debates over whether data assets should be open or privatized. Birch *et al.* (2020) explored the transformation of personal data assets into private assets, conceptual innovation, and the relationship between finance and data leasing, while analyzing the policy implications of pursuing economic returns.

#### ***Current Research Status in China***

Foreign researchers have conducted in-depth discussions on the definition and specific evaluation criteria of data assets, offering a series of research methods and theoretical foundations that can be referenced by researchers in China. These contributions have also provided valuable experience for subsequent studies. By reviewing existing domestic literature in this field, it is evident that the main points of discussion focus on the following aspects:

**Evaluation criteria and definition of data assets.**

Regarding the evaluation criteria of data assets, Yin *et al.* (2021) argue that data asset value assessment and data asset pricing are independent actions occurring at different stages of the data asset value management process. The purpose of value assessment is to provide enterprises with a deeper understanding of the intrinsic value of data assets, enabling more informed decision-making. In contrast, pricing aims to ensure the competitiveness of data assets in the market while maximizing their value. Guo, Mei, and Ling (2021) compared traditional evaluation methods such as the cost method, income method, and market method, proposing the analytic hierarchy process as a new approach for data asset evaluation. This method breaks the evaluation into several components, organizes them into a hierarchical structure, compares and evaluates each component to determine its relative importance, and ultimately constructs a multi-level analysis model. Zou, Hu, and Chen (2023) suggest that for the initial evaluation of data asset value, the "quality-income" evaluation method should first be applied for measurement, followed by a secondary evaluation based on the initial valuation (Jiang, Yuan, & Zhang, 2023). Specific data quality is calculated by assigning weights to various indicators of data quality, followed by calculating the income evaluation of data assets, and finally multiplying the two results to derive the value of the data assets. However, this approach requires unified data standards and principles for exchange and sharing. Currently, the domestic market suffers from a relatively low level of standardization, which hinders data sharing and circulation, thereby impeding the realization of corporate data value. There is limited research on evaluation models that integrate machine learning, and such models are not universally applicable to all data assets. This also highlights the scarcity of domestic research and practical implementations in data asset valuation, indicating that relying solely on theoretical models or subjective evaluations to determine assessment methods is far from adequate. Regarding the definition of data assets, Zhou *et al.* (2022) states that data assets refer to identifiable non-monetary assets without physical form, created by a specific entity through

past internal and external activities, owned or controlled by them, expected to function continuously, and capable of generating economic benefits. Li (2023) argues that in the process of "assetizing" data resources, the key prerequisites are whether the enterprise "owns or controls" the data resources, whether they are "quantifiable" and whether they can "generate economic benefits". Ownership or control serves as the foundation for turning data resources into assets, quantifiability is essential for accurately assessing their value and delivering tangible commercial benefits, and generating economic benefits remains the ultimate objective. Qiu (2024) proposed that before evaluating data assets, it is necessary to clarify their legal ownership, quantify their scale, and differentiate between enterprise data, personal data, and public data based on their sources. Starting from legal authority, the inconsistency between those who produce and use data, along with data leaks, creates confusion in judgment. Hu (2024) argues that data resources should be recognized as assets in accounting. This assertion is based on four points: data has been acknowledged as a factor of production; the national economic accounting system has established the status of databases; digital service taxes indirectly confirm that data constitutes an asset; uncertainty does not preclude the recognition of assets.

Data asset policies and their impact on stock prices of listed companies.

In terms of stock price impact (Li *et al.*, 2025), Yuan, Yu, and Li (2022) analyzed sample data from A-share listed companies between 2007 and 2020, finding that greater disclosure of data asset information by firms correlates with higher enterprise value. Disclosure of data asset information enhances firm value by increasing information transparency, attracting technical human capital, and easing financing constraints. Similarly, Li, Wang and Tang (2022) studied A-share listed companies in Shanghai and Shenzhen from 2007 to 2020, concluding that digital transformation significantly reduces stock price synchronicity. Gou (2024), while selecting A-share listed companies in Shanghai and Shenzhen from 2010 to 2022, focused on how the digitization of annual reports can significantly enhance investor protection, indirectly influencing stock prices, and also advocated for the disclosure of data assets in annual reports. In terms of data asset policies, Xia and Guan (2022) examined foreign government policies, analyzing the data strategies that establish a comprehensive perspective on data assets at macro, meso, and micro levels. Data asset management should embrace the principle of balancing value management with risk control, leveraging front-end controls and key process management measures while emphasizing the creation of a reliable data ecosystem. Meanwhile, Zhou *et al.* (2022) gathered relevant policies on data governance from provincial-level local governments in China, finding that current policies need to enhance the systematic construction of government data governance frameworks and content. Promote the coordinated development of national and regional governance and strengthen the explicit positioning of government data governance within policy themes. Furthermore, Zhou, Wen, and Wu (2024) conducted a survey on efforts by provincial governments in China to advance the utilization of data assets, revealing that most existing policies only outline broad directions for data asset utilization and the establishment of data element markets, while specific development goals and implementation measures remain insufficiently detailed, leading to a lack of actionable specifics. In the above literature review, foreign studies, whether on data asset valuation policies or discussions of policy incentive approaches, reflect a more mature market development compared to China. However, both domestically and internationally, there is not only a scarcity of research literature on the impact of data asset valuation policies on stock prices but also a lack of sufficient empirical data to support studies on data asset valuation and related policy documents. The main points of discussion in the research often focus on defining and evaluating data assets, assessing the impact of disclosing data assets on financial statements on the stock prices of listed companies, and exploring the specific implementation plans of data asset policies. However, there are relatively few research papers supported by sufficient data, and most of them focus on general discussions of the macro-level aspects of data assets. Detailed analyses tend to concentrate on certain data-intensive industries, such as finance and the internet sector.

### Research Methodology

The primary research method employed in this paper is the event study method. Its fundamental principle is to first identify the event to be studied, then gather relevant market data, and subsequently examine the market's response before and after the event. Based on the collected data and analysis outcomes, an event study model is constructed. Finally, the model can be used to quantify the impact of the event and assess its long-term effects on the company or the market. Compared with other methods, the event study method is less vulnerable to interference from other market factors because it evaluates the event's impact by comparing market reactions before and after the event, thus minimizing errors caused by external influences. It has been extensively utilized in numerous economic studies and is regarded as a reliable research method capable of providing fairly accurate estimates of an event's impact. Furthermore, it can be applied to study various types of events, whether related to companies or macroeconomic conditions, making it highly flexible and adaptable.

## RELATED CONCEPTS AND THEORETICAL FOUNDATIONS

### Definition of Data Assets

Currently, there are two main perspectives on the definition of data assets. One emphasizes that data must possess direct economic value and practical utility to qualify as a data asset. The other perspective argues that even if certain data lacks immediate economic value, it may still potentially benefit enterprises and thus can also be considered a data asset (Li, 2020). This distinction gives rise to narrow and broad interpretations of data assets. The focus of this paper is on policies for evaluating data assets. Since existing policies do not yet account for the broader interpretation, the data assets examined in this study align more closely with the narrower definition: identifiable non-monetary assets formed by specific entities through past internal and external activities, owned or controlled by them, lacking physical form, expected to provide ongoing utility, and capable of generating direct economic benefits.

### Evaluation Standards for Data Assets

All companies possess data, whether it pertains to production-related information in manufacturing, experimental data from research and development, or customer order records and internet-related data in the service sector. While data is omnipresent, the key distinction between data assets and general data lies in whether the data can generate determinable future economic benefits. Although the concept of data assets has been around for some time, their varied forms of existence and capacity to yield economic benefits through different applications make their value highly volatile and malleable, posing significant challenges for evaluation. To date, no method has emerged that can comprehensively address all types of data assets and fairly assess their value. Therefore, the evaluation standard adopted in this paper references the "Interim Provisions on Accounting Treatment of Enterprise Data Resources" issued by the Ministry of Finance. According to these provisions, data resources utilized by enterprises that meet the definition and recognition criteria outlined in "Accounting Standard for Business Enterprises No. 6 Intangible Assets" should be classified as intangible assets, and data resources should be evaluated accordingly.

### Theoretical Foundation

The signaling hypothesis is an economic theory that explains how signals are transmitted and received in individual behavior, social interactions, economic markets, and other areas. This hypothesis posits that individuals use both verbal and non-verbal methods to send signals conveying specific information and intentions. These signals are then interpreted by recipients, who respond accordingly. In economics, the signaling hypothesis is commonly used to address issues of information asymmetry, such as those found in stock and debt markets. In the stock market, publicly traded companies may signal that their stock is undervalued by issuing share repurchase announcements or executing buybacks, aiming to enhance their stock price and reputation. In the debt market, high-quality firms might opt for short-term debt to communicate the quality of their investment projects, thereby reducing costs associated with information gaps. Additionally, policymakers typically possess more comprehensive knowledge of policy-related information than ordinary investors. Within the framework of the signaling hypothesis, price serves as the primary mechanism for transmitting information. When a participant holds relevant information, they make trading decisions based on it, which in turn causes price movements. Other participants infer available market information by observing these price changes. Signaling theory asserts that market prices can, to a certain degree, reflect the information and expectations of market participants. Through price movements, market participants can exchange information, contributing to greater market efficiency.

## DATA ASSET VALUATION POLICIES AND THEIR IMPACT

### Data Asset Valuation Policies

Table 1 Policies Related to Data Asset Valuation

Publication Date	Policy Name	Issuing Authority
2021.12.12	The "14th Five-Year Plan" for Digital Economy Development	State Council
2022.12.02	Opinions on Building a Data Foundation System to Better Leverage Data Elements	State Council
2023.02.27	Overall Layout Plan for the Construction of Digital China	State Council
2023.08.01	Interim Regulations on Accounting Treatment of Enterprise Data Resources	Ministry of Finance
2023.09.08	Guidelines for Data Asset Valuation	China Appraisal Association
2023.12.31	Guidelines on Strengthening Data Asset Management	Ministry of Finance

As shown in Table 1, policy documents issued by the state from 2011 to the present were collected and selected through official government websites. These documents are key policy files related to the digital economy and data assets.

### Evolution of Data Asset Valuation Policies

#### *Incipient stage (2016-2022)*

During the initial stage from 2016 to 2022, China's understanding of data asset valuation was still in its nascent phase. After introducing the concept of the digital economy, domestic attention began focusing on the value of various types of data, which at that time were often referred to as digital assets or simply data. With the gradual spread of information technology and the initial accumulation of data resources, some forward-thinking scholars and policymakers began recognizing the importance of data assets and attempted to define and categorize them preliminarily. During this period, although a systematic approach to data asset valuation had not yet been established, it laid the theoretical groundwork for subsequent policy development.

***Start-up phase (2023 -present)***

Since 2023, China has formally incorporated data asset valuation into its policy agenda. Government agencies have issued a series of guiding documents and policies that outline the objectives, principles, and methods for data asset valuation. At the same time, certain pioneering regions and enterprises have begun exploring practical applications of data asset valuation, offering valuable insights for further policy refinement. Starting in 2024, data assets have officially been included in financial statements, requiring companies to evaluate their data assets and disclose them to the public. This phase is expected to reveal more specific and nuanced challenges but will also enable governments and listed companies to address these issues, ultimately prompting stronger regulatory oversight and clearer standards for data asset valuation. A set of detailed rules and guidelines has been introduced, specifying the procedures, methodologies, and technical requirements for data asset valuation. In summary, the evolution of China's data asset valuation policies has progressed through embryonic and initial stages, with future phases anticipated to encompass growth, development, and maturity in line with natural progressions. Looking ahead, continuous technological advancements and expanding application scenarios will further refine and develop data asset valuation policies, providing robust support for fostering the healthy growth of China's data industry.

**Reasons Why Data Asset Valuation Policies Impact Stock Prices*****Reevaluation of Listed Companies' Data Asset Values***

The lack of standardized domestic data asset valuation frameworks in the early stages resulted in significant subjectivity and uncertainty in assessing data asset values. This made it challenging for investors to accurately gauge the data asset values of listed companies, leading to information asymmetry in the market. Nowadays, the government has issued guidelines and policy documents on data asset valuation and mandated that data assets be included in financial statements. The establishment of unified standards will improve the transparency and comparability of data asset values. For companies with poor data quality, ineffective management, or limited application scenarios, the value of their data assets may not see significant growth. Conversely, for companies with high-quality data and strong management practices, this development will enhance their valuation and market standing, drawing greater investor interest and capital inflow. Additionally, the rise in data asset value will create more opportunities for financing and partnerships, driving business expansion. Therefore, listed companies must reevaluate the value of their data assets and disclose them in financial statements. As a key corporate asset, changes in the value of data assets will directly impact a company's total assets and net assets, consequently influencing stock price movements.

***Investor Psychological Expectations***

Investor expectations regarding policy changes are also a crucial factor affecting stock prices. The introduction of data asset valuation policies provides the market with a consistent and standardized evaluation framework, and the inclusion of data assets in financial statements allows investors to better assess the value of listed companies' data assets. This increased transparency strengthens investor confidence in the market, thereby reshaping their expectations for future stock performance. If investors perceive that the valuation policy will yield positive outcomes, such as fostering compliant utilization and unlocking the value of data assets, they are likely to adopt an optimistic view of the company's prospects, potentially boosting stock prices. On the other hand, if investors view the policy negatively, believing it will constrain the use of data assets or raise operational costs, they may develop a pessimistic outlook on the company's future, leading to a drop of stock prices.

***Market Reaction and Adaptability to Policy Changes***

The market's response and adaptability to policy changes are key factors influencing stock prices. The introduction of data asset evaluation policies signifies a shift in market rules, prompting participants to reassess the value of listed companies and adjust their investment strategies accordingly. For investors, greater attention must be paid to the quality and value of data assets, potentially leading some to reallocate capital from traditional physical assets to more promising data-driven opportunities. This shift in capital flows will directly impact stock price movements. Additionally, market reactions encompass the process of adapting to new policies. When data asset evaluation policies are first implemented, uncertainty and volatility may arise. Investors require time to comprehend the specifics and implications of the new policies, as well as to evaluate the data asset value of listed companies. Over time, the market will gradually adjust to these policies and establish a consensus on the valuation of data assets under the updated standards. During this transition, listed companies that proactively adapt to the new policies and effectively leverage data assets are more likely to gain market approval, with their stock prices potentially rising as a result. In summary, the impact of data asset evaluation policies on stock prices is multifaceted, involving the reevaluation of listed companies' data asset values, shifts in investor expectations, and broader market adaptation dynamics.

**EMPIRICAL RESULTS AND ANALYSIS****Data Sources and Sample Selection**

The empirical research data is derived from Tongdaxin software and the GTA database. SPSS and Excel were utilized for data computation and analysis. To assess the market's response to the announcement of data asset valuation policies, this paper selects listed companies from data asset-intensive industries available on the Tongdaxin software platform between January 2021 and January 2024 as research samples. These samples are screened based on the following criteria: companies that did not release announcements likely to impact stock price movements—such as annual reports, asset restructuring plans, or H-share issuances—within 10 days before and after the policy announcement date are chosen.

**Research Design**

Based on the definition of data assets outlined earlier and the aforementioned criteria, the selected research samples from data asset-intensive industries are presented in Table 2.

Table 2 Sample Industry Distribution

Industry Name	Computer application services	Financial sector	Communication services	Total
Number of listed companies	268	99	15	382

Select its event day (policy release day) This announcement day is counted as day 0, the day before the announcement day, as day -1, and the day after the announcement day, as day +1. Collect stock prices and broad market indices during the event day window [-16,15]. And arrange according to the research needs, this paper splits the research window period into six sub-window periods, which are [-15,-5], [-10,0], [-1,0], [-5,5], [0,10], and [5,15]. The steps of the study are shown in Figure 1:

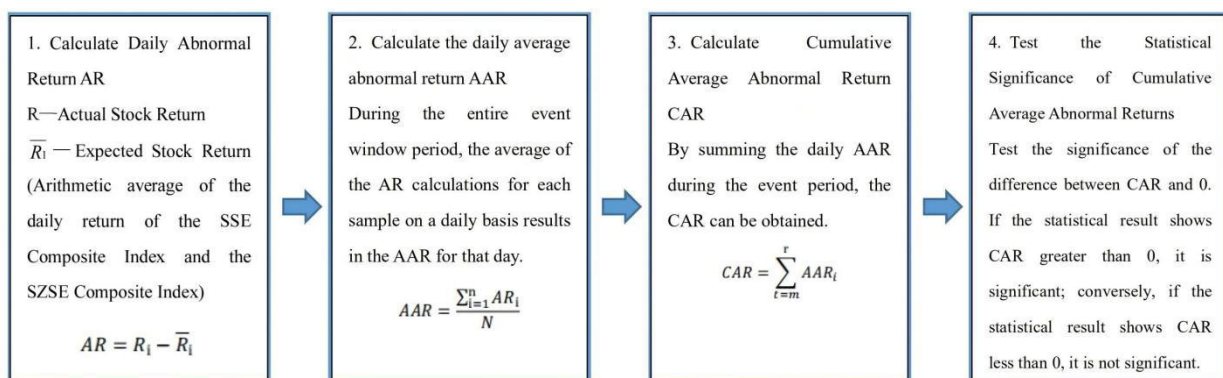


Figure 1 Research steps and formula

**Empirical results and analyses**

*Impact of data asset valuation policies on shareprices of listed companies*

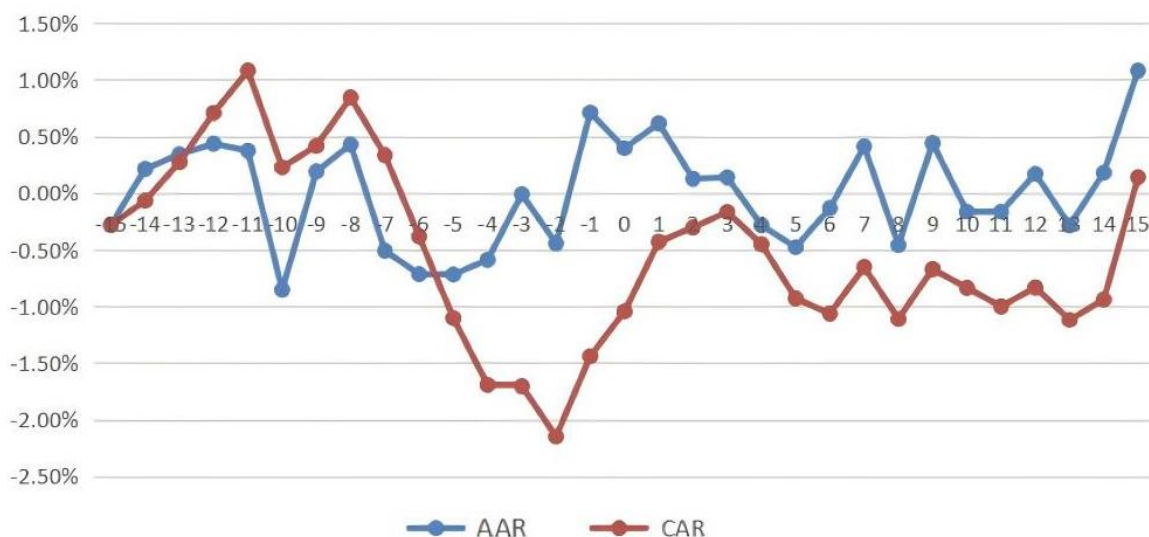


Figure 2 Full Sample AAR and CAR Trends

As shown in Figure 2, during the event window period, the value of CAR is negative at the beginning, then it starts to decrease continuously on the 8th day before the policy release, and then it remains negative until the 15th day after the policy release, which indicates that the data AAR policy has negatively impacted the stock prices of listed companies in data-intensive industries. In addition, several significant peaks and valleys can be seen from the trend of AAR in Figure 4-3, e.g., -11, -8, -2, and 3 on the

announcement day, and these points indicate that the capital market fluctuates dramatically before and after the release of the policy. This may be a result of the fact that before the release of a data asset valuation policy, investors usually understand the content and intention of the policy based on public information and media reports, etc., and try to predict its possible impact. If the policy is expected to be in line with their interests and expectations, they may increase their investment in the market, thus driving the market up; conversely, if the policy is expected to be inconsistent with their interests and expectations, they may reduce their investment in the market, thus triggering the market to fall. And after the release of the policy, investors will assess the possible impact of the policy based on its content and various relevant factors, and adjust their investment decisions accordingly. On the whole, the overall capital market of listed companies in data-intensive industries showed a negative reaction after the announcement of the Data Asset Valuation Policy.

A paired-samples t-test was used to examine the cumulative excess returns during the window period to determine the difference between the mean and zero. The test of significance begins below and is shown in Table 3.

Table 3 Window period [-15, 15] CAR statistical test results

	average value	T-value
full sample	-0.00527**	-3.756

(\* indicates t-test significant at the  $\alpha=0.1$  level, \*\* indicates t-test significant at the  $\alpha=0.05$  level)

According to the results of the paired sample t-test, the mean value of the cumulative excess return of the full sample of data-intensive industries during the window period is -0.00527, which implies that the data asset valuation policy negatively affects the stock prices of the companies listed in the data-intensive industries during the period of the research window, which makes the stock return 0.53 per cent lower than the market average during the window period. And the mean of this sample test is highly significant at the level of  $\alpha = 0.05$ , which indicates that the difference between the cumulative excess return and 0 is significant, i.e., listed companies in the data-intensive industry experienced value impairment during the research window period, and this value impairment is statistically significant. In conclusion, the data asset valuation policy has a significant negative impact on the capital market of the data-intensive industry, which imposes 0.53 per cent value impairment on the companies listed in the data-intensive industry.

**Impact of the policy on the share prices of listed companies in different industries**

Different industries have different data assets, and the impact of data asset valuation policies on the stock prices of listed companies in different industries will be different. This paper chooses three industries to study the industry variability, namely, the financial industry, the communication service industry, and the computer application industry. As shown in Figures 3 to 4.

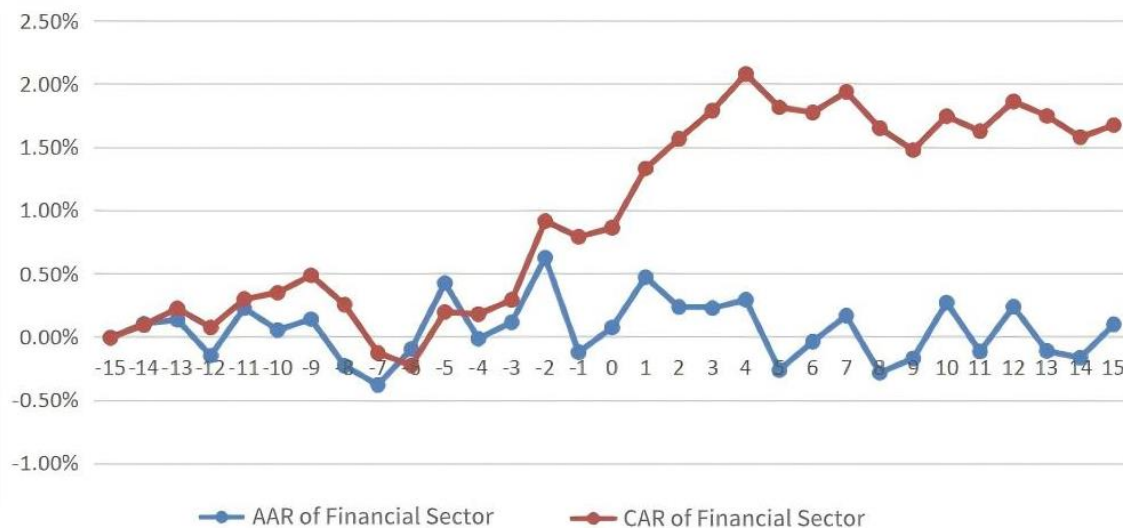


Figure 3 Financial Industry [-15, 15] AAR, CAR Time Trend

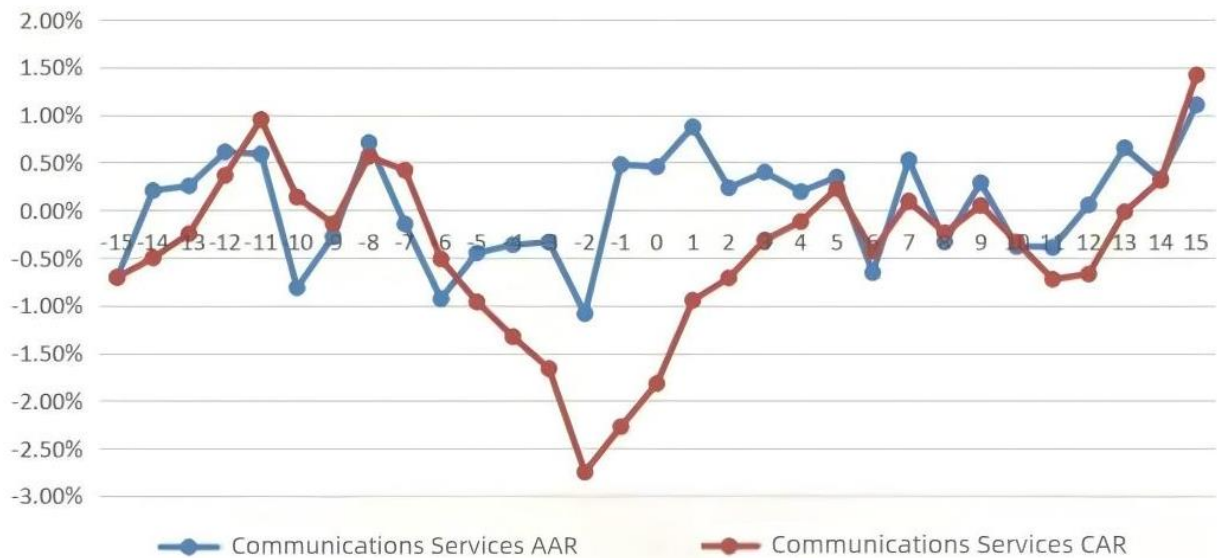


Figure 4 Communications Services [-15, 15] AAR, CAR Time Trend

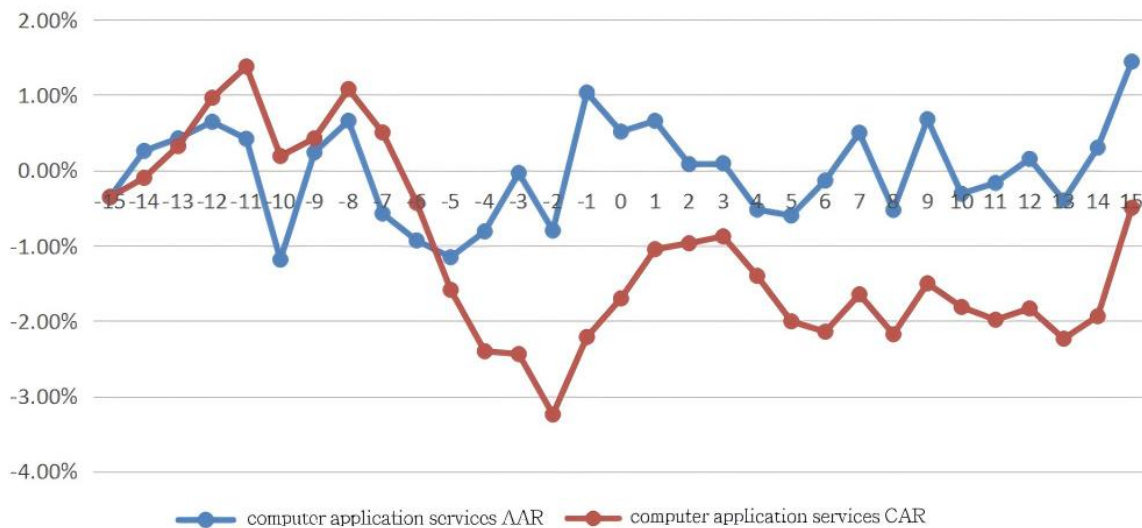


Figure 5 Computer Applications Industry [-15, 15] AAR, CAR Trends

As shown in Figure 3 to Figure 5, the trend of CAR shows that the financial sector started to rise consistently and significantly on the 6th day before the event announcement, and then levelled off until the 4th day after the announcement, ending the window at 0.0167, i.e., a cumulative out performance rate of 1.67% for listed companies in the financial sector over the window period, which suggests that this indicates that the market is holding a positive expectation of the upcoming policy announcement. This positive reaction may have been based on a positive interpretation of the content of the policy or a belief that the policy would be beneficial to the financial sector as a whole. This upward trend continued for four days after the release of the policy before it began to level off. This suggests that the actual release of the policy and the initial effects of the policy further boosted market confidence, allowing the share prices of listed companies in the financial sector to continue to rise. However, as time passed, the market's reaction gradually became more rational and investors began to reassess the value of the companies concerned in light of the specifics of the policy and the effects of its implementation, and as a result, the growth of CARs began to slow down. Eventually, at the end of the window, the cumulative excess return of listed companies in the financial sector was 1.67%, implying that these companies significantly outperformed the market average during this period. This result further validates the market's expectation of a favorable policy and shows how well the financial sector has performed under the influence of the policy. Overall, this trend illustrates the high sensitivity and responsiveness of the financial sector to policy changes, and reflects the market's perception that policies are favorable to the overall development of the financial sector.

In contrast, the communication services and computer applications sectors reflect the complexity of market expectations of the policy. The CAR value of the communications services industry started to decline continuously and significantly on the 8th day before the announcement, started to climb extremely fast on the 2nd day before the announcement, and did not level off until the 5th day after the announcement, and remained negative from the 6th day before the policy release to the 4th day after the policy

release, and was 0.0142 at the end of the window, which means that the cumulative out performance of the listed companies in the communications services industry during the window period was 1.42%. Eight days before the policy announcement, the CAR began to decline consistently and significantly, which may indicate that the market initially held a more pessimistic view of the upcoming policy or was concerned that the content of the policy might have an adverse impact on the communications services industry. However, 2 days before the release of the policy, the CAR began to climb extremely rapidly, a change that suggests a positive shift in the market's expectations of the policy as it approached its release. This shift may stem from the market's further understanding of the content of the policy or its reassessment of the impact of the policy, which it believes will be beneficial to the development of the communications services industry or alleviate previous concerns. It is worth noting that the CAR value was negative from six days before to the fourth day after the release of the policy, further emphasizing the market's concerns about the communications services industry prior to the release of the policy. However, with the official release of the policy and the initial effects of its implementation, market attitudes began to turn positive and CAR values began to recover. Ultimately, at the end of the window, the cumulative excess return of listed companies in the communications services sector was 1.42 per cent, demonstrating the market's positive reaction to the impact of the policy. This suggests that the overall impact of the policy on the communications services industry may be positive, although the market held some scepticism about it in the early stages. In summary, the trend of the CAR value of the communications services industry reflects the dynamic process of the market's expectations of the policy. Concerns prior to the release of the policy were alleviated after the policy was released, and market attitudes gradually turned positive.

The CAR for the computer applications industry began a sustained and significant decline on day 8 before the announcement, climbed on day 2 before the announcement, and did not begin to fluctuate flatly until day 3 after the announcement. However, it remained negative from day 6 before the policy release to day 15 after the policy release, and ended the window at -0.005, or a cumulative out performance rate of return for financial sector listed companies of -0.5 per cent over the window period. First, the sustained and pronounced decline in CAR starting 8 days before the policy release may reflect the fact that the market initially held more negative expectations or concerns about the content of the policy. Such concerns may have stemmed from worries about possible industry restructuring, increased competition, or technological change brought about by the policy, leading investors to be cautious about the future performance of the computer applications industry. However, 2 days prior to the release of the policy, the CAR began to climb, suggesting a positive change in the market's expectations of the policy as it was about to be released. This change could be due to the market gaining more information about the content of the policy or a new appreciation of the potential positive impact of the policy on the development of the industry. It is worth noting that although the CAR value picked up after the release of the policy, it remained negative from six days before the release of the policy to the 15th day after the release of the policy. This suggests that the overall market reaction remained negative during this period, with listed companies in the computer applications industry underperforming and failing to realize extraordinary gains during the window period. Eventually, at the end of the window period, the cumulative excess return of listed companies in the computer application industry was -0.5%. This result further confirms that the market performance of the computer applications industry did not meet expectations in the period following the policy's release, and that investors may have had reservations about the impact of the policy or believed that the industry faced other, more serious challenges. In summary, the trend in CAR values for the computer applications industry shows the complexity of the market's reaction to the policy release. Despite the recovery prior to the policy release, overall the policy did not have a significant positive impact and market performance in the computer applications sector remained relatively weak.

The CAR calculations and significance tests for the subgroups begin below, as shown in Table 4 below.

Statistical data	Sector	Financial sector	Communication services	Computer applications industry
Average value		0.00975**	-0.00416*	-0.01089**
T		7.054	-2.598	-5.03

(\* indicates significant at the  $\alpha=0.1$  level, \*\* indicates significant at the  $\alpha=0.05$  level)

Based on the data in Tables 4-8, it can be concluded that the mean value of CAR value of the sample companies in the financial sector is 0.975% and significant at the 0.05 level, which indicates that the release of the data asset valuation policy brought a cumulative excess return of 0.975% to the shareholders of the listed companies in the financial sector in the window period [-15, 15]. This may be due to the fact that the inclusion of data assets in the financial statements clarifies the importance of data assets, which leads to a more accurate valuation of the large number of data assets held by listed companies in the financial sector. These companies can improve their business efficiency and innovation through better management and utilization of data assets, which in turn will enhance profitability and market value. Seeing the potential value that data assets bring, investors are optimistic about the prospects of listed companies in the financial sector, leading to higher share prices.

The mean value of CAR value of the sample firms in the communication services industry is -0.416 per cent and is significant at the 0.1 level, suggesting that the release of the data asset valuation policy caused a 0.416 per cent value impairment to shareholders of listed companies in the financial sector during the window period [-15, 15]. This may be due to the fact that the implementation of the data asset valuation policy may require listed companies in the communication services industry to revalue their assets and may require business model and strategy adjustments to accommodate the policy requirements. These adjustments may entail additional costs and risks, leading investors to be pessimistic about the future prospects of the company, which in turn is reflected in the share price. This result suggests that the market performance of the sample companies in the communication services sector has been negatively affected to some extent by the data asset valuation policy.

The mean value of CAR value of the sample companies in the computer application industry is -1.089% and is significant at the 0.05 level, suggesting that the release of the Data Asset Valuation policy during the window period [-15, 15] resulted in a 1.089% value impairment to shareholders of listed companies in the financial sector. This could be a possible change in the market's valuation logic for the computer application industry after the policy release. If the introduction of the data asset valuation policy implies that firms will face higher data costs in the future or the exploitation of data resources will be restricted, then this may lead investors to reassess the value of the firms and downgrade their valuation, which may lead to a fall in the share price. This implies that the negative impact of the policy on the sample companies in the computer applications industry is significant.

In summary, the release of the data asset valuation policy had a significant positive impact on the sample companies in the financial industry, a somewhat negative impact on the sample companies in the communications services industry, and a more significant negative impact on the sample companies in the computer applications industry. These differences across industries may stem from the different sensitivities and adaptability of each industry to the data asset valuation policy, as well as the industry's own specific circumstances and challenges. This suggests that there is significant industry heterogeneity in the market response to the data asset valuation policy.

#### **Cumulative Excess Returns in Different Window Periods**

The study window period of the full sample is now split into six sub-window periods, [-15,-5], [-10,0], [-5,5], [0,10], and [5,15], and then the means in the five sub-window periods are analyzed, and the results are shown in Tables 5.

Table 5 Mean CAR values and t-test results for events in each window period

window period	Overall sample mean	Financial sector average	Average value of communication services	Computer Applications Industry Average
[-15,-5]	0.00186*	0.00143*	-0.00058	0.00215
[-10,0]	-0.00698**	0.00358*	-0.00939*	-0.01077*
[-5,5]	-0.01036**	0.01072**	-0.01151**	-0.01811**
[0,10]	-0.00696**	0.01636**	-0.00413*	-0.01574**
[5,15]	-0.00819**	0.01714**	-0.00029	-0.01802**

(\* indicates t-test significant at the  $\alpha=0.1$  level, \*\* indicates t-test significant at the  $\alpha=0.05$  level)

The results of the above statistical tests show that the full sample CAR is significantly different from 0 for the mean CAR values within different time periods. It is significant within the window periods [-10,0], [-5,5], [0,10] and [5,15], indicating that the data asset valuation policy has already had a negative impact on the market before and after its release, thus reducing the stock prices and returns of the listed companies in data-intensive industries. Meanwhile, there are more significant differences in the mean CAR values during different window periods. For example, the mean CAR values within the window periods [-10,0], [-5,5], and [5,15] are relatively low and all show a certain downward trend, with the most significant decline within the window period [-5,5].

To get a clearer picture, the following bar chart is plotted.

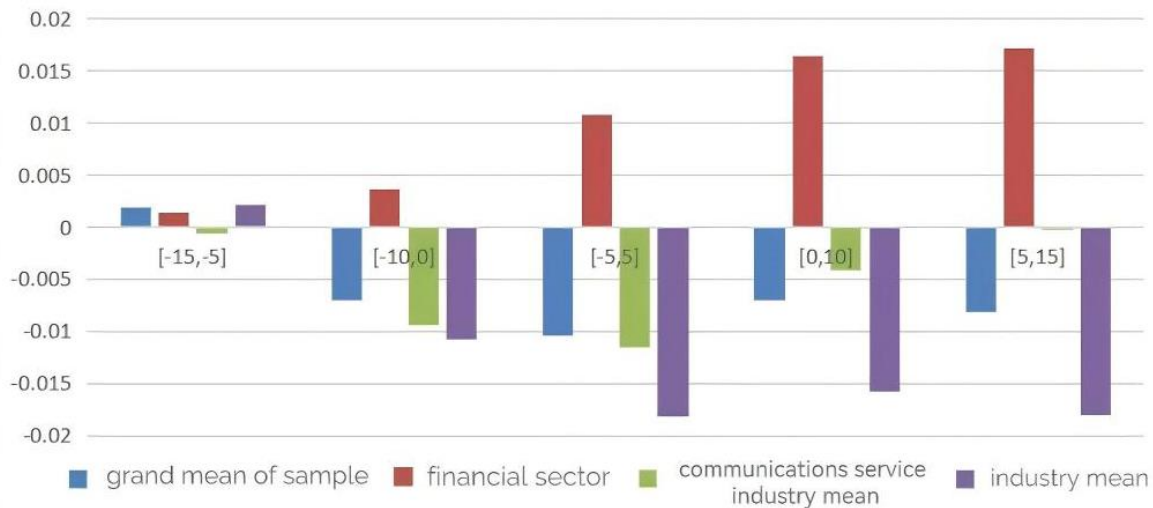


Figure 6 Histogram of CAR means for the full sample of events and for each industry across windows

From Figures 6, it can be seen that during the different window periods, the CAR mean of the financial sector sample is highest in the window period [5, 15], while that of the other industry samples is highest in the window period [-15,-5], and the CAR mean of the financial sector sample is lowest in the window period [-15,-5], while that of the other industry samples is lowest in the window period [-5,5], which suggests that there are some differences in the market responses during the different time periods.

In addition, from an industry perspective, there are significant differences in the mean CAR values of each sample within the same window period, for example: within the window periods [-10, 0], [-5, 5], the mean CAR value of the financial industry exhibits a significant upward trend, while the mean CAR values of the communication service industry and the computer application industry exhibit a significant downward trend. It is worth noting that the mean CAR value of the sample firms in the financial industry has the highest mean CAR value and the mean CAR value of the sample firms in the computer application industry has the lowest mean CAR value in each window period, and the results of this analysis further corroborate the previous conclusion that there is significant industry heterogeneity in the market response to the data asset valuation policy.

## RESEARCH CONCLUSIONS AND RESPONSES

### Research Conclusion

This paper studies the data asset valuation policy and its impact on the share price of 382 listed companies in data-intensive industries from 2021 to 2024, using the share price data of listed companies from 2021-2024 collected by the Cathay Pacific database as the research sample, and the research results are as follows:

First, in the full sample, the mean value of CAR is -0.53% during the window period [-15,15], indicating that the release of the data asset valuation policy brings 0.53% value impairment to shareholders of listed companies in data asset intensive industries.

Second, the impact of the data asset valuation policy on the wealth of shareholders in different industries varies considerably, with the highest CAR of 1.714% for the sample companies in the financial industry, and CAR of -1.151% and -1.811% for the communication service industry and the computer application industry, respectively, and the data asset valuation policy creates an extraordinary gain of 1.714% for shareholders of listed companies in the financial industry, and brings an extraordinary gain of 1.714% for shareholders of listed companies in the computer application industry and the Communications Services industry listed shareholders a value.

### Suggestions for countermeasures

#### *Formulate differentiated data asset assessment policies*

The results of this paper show that the data asset valuation policy announcement brought 1.811 per cent and 1.151 per cent of value impairment to shareholders of listed companies in the computer application industry and the communication service industry, and created 1.714 per cent of extraordinary gains to shareholders of listed companies in the financial industry. This illustrates that there are obvious differences in the effects of the data asset valuation policy in different industries, i.e., enterprises in different industries react differently to the policy. The current policy mostly favors the financial industry and industries with data that can directly generate revenue, while those in the communications service industry and computer application industry, which have data that cannot directly generate revenue but can indirectly do so in other ways, not only fail to enjoy the benefits of the policy, but also have to bear the cost of compliance and regulatory pressure. The government should formulate targeted data asset assessment policies for different industries on the basis of the existing data asset assessment policy outline according to the use of data assets in different industries and the creation of revenue (Wang & Wang, 2025). At the same time, policy makers

should make timely adjustments and optimize the policy based on the securities market reaction to the introduction of the data asset assessment policy to ensure the effectiveness of the policy implementation.

### ***Continue to improve the data asset assessment policy***

The data asset valuation policy has had a negative impact on the stock prices of listed companies in data-intensive industries, resulting in a stock return of 0.53 per cent below the market average during the window period. However, this stems from the fact that data asset valuation is still in its infancy, a stage in which the government has issued guidelines and policy documents that provide preliminary provisions on the objectives, principles and methods of data asset valuation, which still require some pilot regions and enterprises have also begun to explore the practical application of data asset assessment, providing valuable experience for subsequent policy improvement. However, it is undeniable that domestic data asset assessment is haphazard because of the lack of unified standards. Data asset assessment is also one of the important infrastructures in the era of digital economy, which is of great significance in facilitating the circulation and transaction of data elements and promoting the development of the digital economy. It is now a necessary painful transition period, so for investors, although the current data asset assessment policy may have a certain negative impact on the stock prices of companies listed in data-intensive industries, it will certainly create good conditions for the future standardization of data asset reports, the correct disclosure of reporting information and help investors make correct investment decisions.

### **ACKNOWLEDGMENT**

This work was financially supported by the College Students' Innovative Entrepreneurial Training Plan Program Fund 2025: Study on the Promotion Path of Innovation Ecosystem Competitiveness of Jiangsu High-Tech Industry from the Perspective of "Multi-Chain" Integration (202511276038), China; Jiangsu Provincial Social Science Foundation Project: "Research on the Safety Measurement and Enhancement Pathways of Jiangsu's New Power Equipment Industry Chain from the Perspective of New Quality Productivity" (24GLB003), China; Nanjing Institute of Technology 2024 Special Project for Humanities and Social Sciences Research under the Central Financial Support for Reform and Development Funds of Local Universities: "Research on the Enhancement Pathways of High-Tech Industry Innovation Ecosystem Competitiveness from a 'Multi-Chain' Integration Perspective", China.

### **REFERENCES**

- Birch, K., Chiappetta, M., & Artyushina, A. (2020). The problem of innovation in techno-scientific capitalism: Data rentiership and the policy implications of turning personal digital data into a private asset. *Policy studies*, 41(5), 468-487.
- Gou, Y. (2024). Enterprise digitization and investor protection—Based on the empirical test of listed enterprises in China. *Market Weekly*, 37(04), 22-25.
- Guo, D.D., Mei, S.Y., & Ling, P. (2021). Research on the Value evaluation of commercial data assets driven by the digital economy. *China Journal of Commerce*, (24),126-128. <https://link.oversea.cnki.net/doi/10.19699/j.cnki.issn2096-0298.2021.24.126> [in Chinese]
- Hu, W. (2024). Enterprise data resource assetization: Theoretical mechanisms, practical foundations, and policy choices. *Communication of Finance and Accounting*, (03),13-19+157. <https://doi.org/10.16144/j.cnki.issn1002-8072.2024.03.003>. [in Chinese]
- Jiang, J.C., Yuan Z.H., & Zhang, Y.Q. (2023). Research progress and future prospects of data asset evaluation. *Co-Operative Economy & Science*, (15),95-99. <https://link.oversea.cnki.net/doi/10.13665/j.cnki.hzjyjkj.2023.15.021>. [in Chinese]
- Lesslar, P.C. and van den Berg, F.G. (1998). Managing data assets to improve business performance. *Journal of Petroleum Technology*. 50(5):54-58. <https://onepetro.org/JPT/article-abstract/50/05/54/170297/Managing-Data-Assets-To-Improve-Business?redirectedFrom=fulltext>
- Li, J.P. (2020). Research on recording data assets in national accounts. *Statistical Research*, 37(11),3-14. <https://link.oversea.cnki.net/doi/10.19343/j.cnki.11-1302/c.2020.11.001>. [in Chinese]
- Li, S.G., Shao, H.B., Fang, F., & Lu, F.C. (2025). Firm data asset disclosure and capital market pricing efficiency. *China Industrial Economics*. (07), 138-155. <https://link.oversea.cnki.net/doi/10.19581/j.cnki.ciejournal.2025.07.010>. [in Chinese]
- Li, W., Wang, M.G., & Tang, Y. (2022). The impact of enterprise digital transformation on stock price synchronicity. *Finance and Economy*, (11), 78-87. <https://link.oversea.cnki.net/doi/10.19622/j.cnki.cn36-1005/f.2022.11.008>. [in Chinese]
- Li, Y. (2023). The dilemmas and countermeasures in data asset valuation. *Journal of Shanxi Finance & Taxation College*, 25(06),40-44. [in Chinese]
- Paula, H.M. (2016). Managing data as an asset. *Offshore engineer*, 41(3), 83-83. <https://offshoreengineer.oedigital.com/magazines/OffshoreEngineer/201603/pdf/> [in Chinese]
- Qiu, K.L. (2024). Identification recognition and valuation of data assets. *Appraisal Journal of China*, (02),10-16.
- Wang, A. (2021). Research on accounting treatment and information presentation of enterprise data assets. *E3S Web of Conferences*, 251, 01054. <https://doi.org/10.1051/E3SCONF/202125101054>.
- Wang, S.D., & Wang, X.Z. (2025). Enterprise digital transformation, resource allocation efficiency, and stock price fluctuation risk. *China Journal of Commerce*, 34(18),159-163. <https://link.oversea.cnki.net/doi/10.19699/j.cnki.issn2096-0298.2025.18.159>. [in Chinese]

- Wei, Y.L., Zhang, J.R., Wang, F.J. & Cheng, M.Y. (2022). Research of data assets disclosure and analyst forecasts: Evidence from text analysis. *Journal of Management Engineering*, 36(05),130-141. <https://link.oversea.cnki.net/doi/10.13587/j.cnki.jieem.2022.05.011>. [in Chinese]
- Xia, Y.K., & Guan, Q. (2022). The main practice and basic experience of foreign government data asset management. *Journal of Information Resources Management*, 12(06): 18-30. <https://doi.org/10.13365/j.jirm.2022.06.018>. [in Chinese]
- Xu, T., Shi, H.N., Shi, Y.J. & You, J.X. (2024). From data to data asset: conceptual evolution and strategic imperatives in the digital economy era. *Asia Pacific Journal of Innovation and Entrepreneurship*, 18(1),2-20.
- Yin, C., Jin, T., Zhang, P., Wang, J., & Chen, J. (2021). Data asset valuation and pricing: A research review and outlook. *Big Data*, 7(4), 14-27. <https://qikan.cqvip.com/Qikan/Article/Detail?id=7105128692> [in Chinese]
- Yuan, Z.M., Yu, X., & Li, M. (2022). Data asset information disclosure, institutional investor heterogeneity and enterprise value. *Modern Finance and Economics: Journal of Tianjin University of Finance and Economics*, 42(11),32-47. <https://link.oversea.cnki.net/doi/10.19559/j.cnki.12-1387.2022.11.003>. [in Chinese]
- Zhou, W.H., Dai, L.X., Wen, L.J., & Li, Y.K. (2022). Research on the policy connotation of government data governance in China. *Journal of Modern Information*, 43(10), 85-96.
- Zhou, W.H., Wen, L.J., & Wu, Y.F. (2024). Investigation and insights into the promotion of data asset utilization by provincial governments. *Library and Information Service*, 2024, 68(3), 27-39. <https://link.oversea.cnki.net/doi/10.13266/j.issn.0252-3116.2024.03.003>. [in Chinese]
- Zou, L., Hu, J.W., & Chen, P. (2023). Data asset valuation and value realization. *China Quality Certification*, (05),63-65. <https://link.oversea.cnki.net/doi/10.16691/j.cnki.10-1214/t.2023.05.006>. [in Chinese]