International Journal of Trend in Scientific Research and Development (IJTSRD)
Volume 10 Issue 5, Sep-Oct 2026 Available Online: www.ijtsrd.com e-ISSN: 2456 – 6470

Research on Legal Safeguards for Data Factor Valorization

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ABSTRACT

Against the backdrop of a booming digital economy, data, alongside land, labor, capital, and technology, has evolved into a critical factor of production in China. Data factor valorization serves as a vital path to revitalize data resources, empower digital industrial upgrading, and boost high-quality economic development. It refers to the process whereby fragmented and idle raw data is converted into economically and socially valuable data products and services through collection, cleansing, processing, circulation, and transaction. At present, the practice of data valorization in China faces multiple legal obstacles, including ambiguous definitions of data ownership, absence of circulation-transaction rules, conflicts between personal-rights protection and data utilization, and imperfect regulatory institutions, which hinder the market-oriented development of data factors.

Based on China's existing legal framework and data-related policies, this paper combines real-world scenarios of the digital economy. Adopting literature review, case analysis, and normative analysis, it sorts out the connotation and practical value of data valorization, analyzes legal dilemmas in practice, and summarizes root causes from judicial practice. From five dimensions: ownership institution, transaction rules, rights-and-interests protection, regulatory system, and remedy mechanism, this paper puts forward feasible improvement paths tailored to China's national conditions. Balancing data exploitation and legal security, this research provides theoretical references and practical ideas for compliant market-oriented operation of data factors, improvement of China's data-rule-of-law system, and resolution of bottlenecks restraining data value realization.

How to cite this paper: Fu Yuxuan "Research on Legal Safeguards for Data Factor Valorization" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-10 | Issue-5, October 2026, pp.233-239, URL: www.ijtsrd.com/papers/ijtsrd142234.pdf

IJTSRD142234

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KEYWORDS: *data factor valorization; data factors; legal safeguards; ownership definition; market regulation.*

1. INTRODUCTION

1.1. Research Background

The digital economy has achieved remarkable growth in China. Popularization of short-video platforms, e-commerce livestreaming, smart government services, big-data industries, and artificial intelligence has embedded data into every corner of social life and the market economy. At the state level, important policies have been continuously issued. The Opinions of the CPC Central Committee and the State Council on Building a Basic Data Institution to Better Play the Role of Data as a Factor of Production (the "Twenty Articles on Data", 2022) systematically establish an institutional framework covering data property rights, circulation and transaction, benefit distribution, and security governance. It formally confirms the legal status of data as a production factor and charts directions for data valorization.

Industries across sectors are tapping data valuee: enterprises optimize products and conduct precision marketing via user data; governments realize smart governance and convenient public services through government data; the financial industry applies big-data technologies for risk control and credit assessment. Whether data can be smoothly converted into value directly determines the quality of digital-economic development. Nevertheless, China's rule-of-law construction for data lags behind the rapid expansion of digital industries.

Numerous malpractices persist in practice: unauthorized web-scraping of user data, underground data-trading chains, frequent personal-information leakage, difficulties in claiming compensation for data-related infringements, and platform

monopolization over data resources. Such problems stem largely from inadequate legal safeguards. Without clear legal rules defining compliance boundaries for data value conversion, market participants hesitate to invest or trade, leaving massive data resources idle. Therefore, improving legal safeguards for data valorization has become an urgent legal-economic issue.

1.2. Research Significance

1.2.1. Theoretical Significance

Existing domestic studies on data law mostly focus on isolated fields such as personal-information protection, data security, and data ownership confirmation. Systematic research targeting full-process legal safeguards for data valorization remains scarce, especially research grounded in market-practice and innovation scenarios. Taking the complete value-conversion process as the main thread, this paper integrates five legal dimensions: ownership, transaction, protection, regulation, and remedy. It identifies loopholes in current legal norms, enriches theoretical research on the data-factor rule of law, offers theoretical support for subsequent special data legislation and institutional refinement, and remedies fragmentation in existing academic outputs.

1.2.2. Practical Significance

This research carries strong practical value. For enterprises, explicit legal rules define compliance boundaries for data collection, processing, and transaction, lowering operational risks arising from legal violations. For citizens, improved legal safeguards curb personal-information leakage and data abuse, protecting personality and property interests. For the state, a sound data-rule-of-law system standardizes the data-factor market, breaks down data barriers, revitalizes data resources, and facilitates compliant, long-term, and high-quality development of the digital economy.

1.3. Domestic and Foreign Research Status

1.3.1. Foreign Research Status

European and American countries started earlier in digital-economy development and have relatively mature data-rule-of-law systems. The EU's General Data Protection Regulation (GDPR), a landmark global legislative instrument for data protection, governs the collection, circulation, and utilization of personal data, establishing core principles including informed consent, data minimization, and privacy protection, and imposing strict constraints on corporate data-processing behaviors. The United States adopts a "decentralized legislation plus industrial self-regulation" model without a unified data code. Sector-specific statutes apply to finance, healthcare, telecommunications, and other fields, prioritizing free data circulation while balancing market innovation and security supervision.

Foreign scholars concentrate on data privacy protection, cross-border data flow, and regulationion of platform data monopolies, forming well-developed theories on rights protection and market supervision. Still, foreign legal institutions and research outcomes are rooted in local market and legal contexts and cannot be directly transplanted into China's data-market environment.

1.3.2. Domestic Research Status

Domestic academia has paid close attention to data-rule-of-law construction following the release of the "Twenty Articles on Data". Data ownership, data transaction and market-oriented allocation of data factors have become hot research topics. Most scholars endorse the "three-rights separation" institutional framework: separation of data resource tenure, data processing-and-usage rights, and data-product management rights, an innovative institutional design accommodating the non-excludability and replicability of data.

Meanwhile, many studies point out evident shortcomings in current Chinese laws. Article 127 of the Civil Code of the People's Republic of China only provides a principled placeholder provision for data protection without clarifying the property-right attributes of data. The Data Security Law and the Personal Information Protection Law prioritize security and privacy protection yet contain few detailed provisions governing market-oriented data valorization and transactions. Judicial practice is plagued by difficulties in adducing evidence, loss quantification, and remedy for data-infringement claims. However, most existing studies remain purely theoretical; full-process systematic research integrating market realities is limited, which constitutes the breakthrough point of this paper.

1.4. Research Methodology

Three research approaches are adopted. First, literature research: reviewing laws, including the Civil Code, the Data Security Law, and the Personal Information Protection Law, together with academic papers and official policy documents, laying theoretical foundations for this study. Second, case analysis: analyzing typical judicial cases concerning data infringement, data-transaction disputes, and platform data monopolies to identify legal loopholes and judicial dilemmas in real-world market scenarios. Third, normative analysis: examining legal defects throughout the whole process of data valorization against current legal norms and national basic-data institutions and proposing targeted improvement suggestions.

2. Basic Theories of Data Valorization and Legal Safeguards

2.1. Core Connotation of Data Factor Valorization

Raw data itself carries barely any value. Browsing logs, consumption records, government ledgers, and corporate operational data are scattered, disordered, and incapable of generating direct economic benefits. Data valorization refers to the whole process of standardized processing, specialized refinement, and market-oriented utilization of raw data. It covers four sequential phases: (1) data collection: lawful gathering of personal, governmental, and industrial data; (2) data processing: cleansing, desensitization, integration, and modeling to convert raw data into standardized data resources; (3) data circulation and transaction: data transfer via platform trading, authorized use, and open sharing; (4) value realization: application of data products in corporate operations, government services, and industrial upgrading to generate economic and social value. In essence, data valorization transforms idle data resources into usable assets, serving as a core driving force for digital-economic growth.

2.2. Dual Values of Data Valorization

2.2.1. Economic Value

As a core production factor of the digital economy, valorized data substantially cuts transaction costs and improves industrial efficiency. Enterprises deploy data analytics to match market demands precisely and reduce resource waste. The development of data-trading markets fostersrs emerging industries such as data service providers, data platforms and big-data R&D, driving employment and economic growth. Sectors including finance, logistics and manufacturing achieve digital transformation and industrial upgrading supported by big-data technologies.

2.2.2. Social Value

Beyond economic returns, data valorization delivers prominent social benefits. Open sharing of government data streamlines online social-security, medical-insurance, and household-registration services and enhances governmental governance efficiency. Big-data technologies support epidemic response, disaster early-warning, and public-security governance, safeguarding social stability. Big-data applications in education and healthcare optimize allocation of public resources, advance equitable public services, and improve public wellbeing.

2.3. Necessity of Legal Safeguards for Data Valorization

First, legal safeguards regulate market disorder and maintain market order. Without sufficient legal constraints, some enterprises conduct illegal data scraping, trade user information, and over-collect personal privacy, sustaining underground data-trading chains. Law delineates boundaries between lawful and unlawful acts and curbs industrial irregularities.

Second, law reconciles data-utilization development and personal-rights protection. Excessive privacy restrictions may immobilize data resources and hinder digital-economic progress; unrestrained data exploitation may trigger personal-information leakage and personality-right violations. Legal mechanisms strike a two-way balance between compliant utilization and effective protection.

Third, sound legal safeguards boost market confidence and activate factor vitality. Ambiguous legal rules expose enterprises to compliance risks, discouraging large-scale investment and data transactions. Clear provisions on rights, obligations, and liabilities eliminate market concerns and unlock the potential of data factors.

3. Current Status of Legal Safeguards for Data Valorization in China

China has initially built a data-rule-of-law framework: constitutional provisions as the foundation, special statutes as the core, policy documents as supplements, and industrial norms as auxiliary rules. The system has gradually taken shape, yet it contains conspicuous gaps in detailed rules.

3.1. Basic Civil-Law Safeguards

The Civil Code constitutes the fundamental civil-law basis for data protection. Article 111 protects natural persons' personal-information interests and prohibits unlawful collection, use, processing, and transmission of personal information. Article 127 stipulates that where laws contain provisions for the protection of data and network virtual property, such provisions shall apply. Nevertheless, these are general, placeholder provisions. They establish the basic stance that data deserves legal protection but do not define data ownership, transaction rules, or property-right attributes. They cannot directly resolve practical disputes over data transactions, infringements, or benefit distribution and function merely as fallback legal grounds.

3.2. Special-Legislation Safeguards

Two core special statutes form the backbone of China's data-law system. The Data Security Law centers on security, establishing a classified-and-graded data-protection regime and defining data-security obligations for the state, enterprises and individuals to secure the bottom line for data valorization. The Personal Information Protection Law prioritizes personality-right protection, refining

the principles of lawfulness, legitimacy and necessity for personal-information processing. It enshrines rights such as informed consent, consent withdrawal, information inquiry and erasure, and imposes strict restraints on corporate data-processing activities.

Both statutes feature an evident bias: they emphasize security and protection while paying insufficient attention to circulation and value realization. They barely contain detailed rules governing lawful data transactions, value conversion and benefit distribution, and cannot fully satisfy demands for data-factor marketization.

3.3. Policy-Institutional Safeguards

Policy documents represented by the "Twenty Articles on Data" break the shackles of traditional real-property theory and propose the "three-rights separation" regime: data-resource tenure belongs to data collectors and processors; data processing-and-usage rights rest with compliant processing entities; data-product management rights are held by market-oriented operators. This policy addresses ownership-confirmation difficulties caused by data's intangibility and replicability and transcends the "one-object-one-right" real-property doctrine. However, policy documents lack legal enforceability. They serve as guiding directions rather than direct grounds for judicial adjudication or administrative supervision, lacking rigid support for implementation.

3.4. Industrial and Regulatory Norms

Regulatory authorities, including the Cyberspace Administration, Ministry of Industry and Information Technology, and Ministry of Public Security, have issued multiple industrial norms governing web-scraping, cross-border data transfer, personal-information collection, and platform data governance. Current supervision relies heavily on administrative regulation and special rectification campaigns. Industrial norms remain fragmented, standards are inconsistent across sectors and regions, giving rise to both regulatory gaps and overlapping jurisdictions.

4. Practical Legal Dilemmas for Data Valorization

4.1. Ambiguous Data Ownership and Disordered Rights System

Clear ownership is a prerequisite for data transactions and value conversion. China's most prominent legal loophole lies in undefined data-property ownership. First, data-property-right attributes are not confirmed at the statutory level. The Civil Code only recognizes that data deserves protection without clarifying whether data qualifies as a property right, a real right, or a new type of civil right. Traditional rules of real rights, creditor's rights, and intellectual property cannot fully adapt to data characteristics such as replicability and multi-subject concurrent use. Second, the policy-based "three-rights separation" has not been codified into law. Legal definitions, boundaries, exercise conditions, and transfer rules for the three rights remain unspecified. In judicial practice, courts lack explicit adjudication criteria for disputes over raw data, processed data, and data products. Third, uniform ownership-classification standards are absent for public data, enterprise data, and personal data. Ambiguous rules concerning access to government public data, ownership of enterprise-processed data, and limits for personal-data utilization frequently trigger conflicts.

4.2. Lack of Legal Rules for Data Circulation and Transaction

Free and compliant circulation enables data value appreciation, yet China's data-transaction practice operates largely without governing rules. First, the lawful scope of data transactions is undefined. Statutes do not specify which categories of data may or may not be traded, whether desensitized data can circulate freely, or restrictions for processed-data transactions. Compliance-minded enterprises refrain from trading while unlawful actors trade recklessly. Second, specialized contract rules for data transactions are missing. As intangible virtual assets, data products differ materially from traditional physical commodities in subject-matter, delivery modes, quality standards and liability for breach. Courts have to apply analogies to sales or service contracts under the Civil Code, leading to inconsistent judgments in similar cases. Third, regulatory standards for data-trading markets are fragmented. Multiple local data-exchanges adopt divergent access criteria, trading procedures and compliance requirements. Cross-regional data flows are impeded.

4.3. Imbalanced Conflicts between Personal-Rights Protection and Data Utilization

Data valorization inevitably involves the collection and use of personal information, creating tensions between privacy-interest protection and data exploitation. On one hand, many applications and platforms impose mandatory authorization, excessive permission requests, and bundled consent: users cannot access basic functions without granting permissions, violating the data-minimization principle. Individual users face high costs of evidence collection and litigation, while enterprises bear extremely low violation costs, allowing such malpractices to persist. On the other hand, overly rigid personal-information-protection rules raise compliance costs for legitimate big-data analytics,

industrial research, and market surveys, restraining reasonable data-value conversion. Current legal frameworks swing between insufficient supervision triggering disorder and excessive supervision hindering industrial development, failing to strike an optimal balance.

4.4. Deficient Regulatory System and Insufficient Governance Efficiency

China adopts decentralized multi-agency supervision. Competences are distributed among cyberspace, industry-information, public-security, market-regulation, and big-data-management authorities without clear demarcation of powers and responsibilities. Overlapping jurisdiction causes repeated inspections and excessive regulatory burdens for enterprises. Meanwhile, regulatory gaps persist for emerging business forms such as data processing, modeling, and derivative-product transactions. Supervision still depends largely on ex-post investigation and special-campaign rectification, lacking routine ex-ante prevention and in-process control. Once data infringement or leakage occurs, damages spread rapidly and can hardly be remedied merely through subsequent penalties.

4.5. Inadequate Remedy Mechanisms and Judicial Difficulties in Claiming Rights

Victims face great obstacles when pursuing remedies for data infringement, data theft, or data-transaction breaches. First, rules on the burden of proof are unreasonable. Data-infringement acts are highly covert; records of data storage, operation, and circulation are controlled by platform enterprises. Individuals and small-and-medium-sized enterprises lack evidence-gathering capacity, and no reverse-burden-of-proof rules apply to data-related disputes, frequently resulting in dismissals of claims due to insufficient evidence. Second, loss quantification is challenging. Data value is intangible and dynamic without unified assessment criteria. Courts often award very low compensation, far below the unlawful gains of infringers, failing to deter violations. Third, the scope of public-interest litigation remains narrow. Existing public-interest litigation for data-related issues mainly targets large-scale personal-information leakage. It rarely covers inter-enterprise data infringement, illegal data transactions, or abuse of public data, leaving many market irregularities beyond judicial constraints.

5. Suggestionsor Perfecting China's Legal-Safeguard System for Data Valorization

Adhering to the principles of balancing development and security, as well as protection and utilization, this section proposes targeted countermeasures building on preceding dilemmas.

5.1. Refine Data-Ownership Institutions and Construct a New-Type Data-Rights System

Policy-level "three-rights separation" should be codified and concretized. First, advance special data legislation to statutorily establish the three-rights separation framework, defining legal definitions, boundaries, acquisition modes, and transfer rules for data resource tenure, data processing-and-usage rights, and data-product management rights. Differentiate ownership rules for personal data, enterprise data, and public data: prioritize personal informational interests for raw personal data; recognize enterprises' property-related interests over lawfully processed and desensitized derivative data; stipulate state ownership and social sharing for government public data. Second, implement tiered ownership confirmation: original personal data centers on personality-interest protection, with enterprises entitled only to usage within legal boundaries; enterprises obtain full rights of holding, usage, and transaction for self-collected non-sensitive processed data; public government data follows public-ownership-and-sharing rules specifying scope, modalities, and limits for opening-up. Third, improve the data-asset registration system. Build a unified national platform for standardized registration of data resources and products to confirm ownership, enabling traceability for rights confirmation, registration, transaction, and dispute resolution.

5.2. Improve Legal Rules for Data Circulation and Transaction to Stimulate Market Vitality

Legislation shall formulate positive and negative lists for data transactions: permitting lawful trading of desensitized data, processed derivative data, and open public data; prohibiting transactions involving raw sensitive personal information, classified state secrets, and illegally collected data. Within the framework of the Civil Code Contract Book, supplement special contractual rules for data transactions covering validity, delivery standards, rights and obligations, liability for breach, and risk allocation for intangible-asset transactions, unifying judicial adjudication standards. Formulate nationwide unified regulatory standards for data-trading markets covering market access, trading workflows, compliance review, and risk prevention, breaking regional barriers and facilitating cross-sector and cross-regional data flows.

5.3. Build a Two-Way Adaptation Mechanism Balancing Rights-and-Interests Protection and Data Utilization

Move beyond the single-mode "emphasizing protection while neglecting utilization". Strictly enforce the data-minimization and necessity

principles, banning mandatory authorization and excessive permission requests, and cracking down on illegal scraping, leakage, and trafficking of personal data. Distinguish sensitive personal information from ordinary behavioral data: relax restrictions for de-identified and non-identifiable ordinary data to permit lawful corporate data analytics and industrial innovation. Establish compliance-exemption mechanisms for data-utilization activities serving the public interests such as government big-data governance, public-interest academic research and AI R&D, lowering corporate compliance costs and achieving dynamic balance between protection and development.

5.4. Optimize the Regulatory System and Build a Modern Comprehensive Governance Model

Clarify statutory regulatory competences for relevant authorities to eliminate overlapping jurisdiction and regulatory gaps, and establish cross-departmental collaborative supervision with information-sharing and joint-law-enforcement mechanisms. Deploy smart-supervision platforms based on big-data and artificial-intelligence technologies to dynamically monitor full-chain data collection, processing, circulation, and transactions, shifting supervision from ex-post punishment to ex-ante risk warning and in-process control. Introduce industrial self-regulation: encourage industry associations to formulate self-disciplinary norms and compliance standards, forming a multi-governance pattern of "government supervision + industrial self-regulation + social oversight".

5.5. Improve Judicial Remedy Mechanisms and Strengthen Legal Sanctions

Implement reverse burden of proof for data-infringement disputes: enterprises holding data and technological advantages shall bear the burden of proving the lawfulness of their data-processing conducts; failure to furnish sufficient evidence shall result in a finding of infringement. Promulgate unified evaluation standards for data-asset value, loss assessment, and compensation calculation to unify judicial scales. Improve punitive-damage rules to impose high compensation for malicious data theft, large-scale personal-information leakage, and repeated infringements to raise unlawful costs. Expand the scope of public-interest litigation to cover inter-enterprise data infringement, illegal data transactions, public-data abuse, and platform data monopolies, empowering procuratorial organs and social organizations to file public-interest lawsuits.

6. Conclusion

In the era of a booming digital economy, data valorization represents an inevitable trend and a core driver for fostering new-quality productive forces and high-quality economic development. Whether data factors can smoothly deliver economic and social value hinges not primarily on technological advancement but on a sound rule-of-law system. China's data-valorization development faces both opportunities and bottlenecks: ambiguous ownership, deficient transaction rules, imbalanced interest conflicts, backward supervision, and insufficient judicial remedies constrain market-oriented deployment of data factors. To unlock data-factor vitality, China must construct an innovative legal-safeguard system adapted to data attributes beyond traditional civil-law frameworks.

By codifying the three-rights-separation ownership regime, perfecting circulation-transaction rules, reconciling protection and industrial development, modernizing supervision, and strengthening judicial remedies, China can comprehensively regulate full-chain data-valorization activities while balancing security and development. With the advancement of special data legislation and continuous improvement of the rule-of-law system, China will build a more standardized, open, secure, and efficient data-factor market, fully releasing data-factor value for high-quality digital-economic growth and Chinese-path-to-modernization construction. For law students, data-related rule-of-law research constitutes an emerging and promising field linking academic expertise with real-world industrial compliance.

References

[1] Qin Q. Improving the Legal Safeguard System for Data Resource Exploitation and Utilization[J]. People's Tribune, 2026(06).

[2] Chen B. Rule-of-Law Dilemmas and Optimization Paths for Market-Oriented Allocation of Data Factors[J]. Study and Practice, 2026(05).

[3] Wu Y. Practical Dilemmas and Regulatory Paths of Data-Asset Registration in the Big-Data Era[D]. University of Chinese Academy of Social Sciences Law School, 2026.

[4] Feng X. Legal Dilemmas and Institutional Improvement of Data-Asset Accounting Recognition[J]. Journal of North China University of Water Resources and Electric Power (Social Sciences Edition), 2026(06).

[5] An Q. Institutional Conception for Data Real-Right Construction in Market-Oriented Data-Factor Development[N]. Gansu Daily, 2026-07-16.

[6] CPC Central Committee & State Council. Opinions on Building a Basic Data Institution to Better Play the Role of Data as a Factor of Production[Z]. 2022.

[7] Data Security Law of the People's Republic of China[Z]. 2021.

[8] Personal Information Protection Law of the People's Republic of China[Z]. 2021.

[9] Wang L. Construction of Data Property Right under the Civil Code[J]. China Legal Science, 2025(02).

[10] Zhang X. Research on the Balancing Mechanism between Personal-Information Protection and Data Utilization[J]. CASS Journal of Law, 2025(03).