



# Examining Data Property Rights from the Perspective of Law and Economics

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**Abstract.** This paper employs a perspective rooted in the field of law and economics, utilizing the Calabresi-Melamed Framework and its extended rules of pliability, to undertake a comprehensive examination of the construction of property rights. It revisits the fundamental purpose underlying the establishment of property rights over data, directly oriented towards establishing a well-ordered nexus between the digital economy and judicial practice, particularly in the current landscape dominated by platform-centric Internet developmental experiences. Additionally, this study delves into the practical significance of the four regulatory approaches posited by Larry Lessig. It contends that current emphasis should be placed on the architecture of legal impact, demarcating platforms and enterprises as distinct legal entities subject to disparate legal requisites.

**Keywords:** Calabresi-Melamed Framework, property rights, Larry Lessig, legal impact

## 1 Statement of the Current Research Situation in China

Returning to the initial point of the question, regarding the ultimate orientation of the construction of property rights, there are two main directions. One is the possibility of integration with the existing system of rights, creating a comprehensive legal framework that harmonizes with the traditional structure of rights.[1] The other direction involves responding to the establishment of data markets, arising in the aftermath of two decades of the illicit proliferation of the internet,[2] furthermore, guided by policies, laws, and regulations, this direction contemplates what constitutes a rational and effective market. The first approach progresses through an exclusivity-based rights confirmation phase, moving towards a multi-scenario processing model and the Rights Block Theory founded upon the three-tiered rights framework proposed by the Data Twenty Articles. This approach shares common ground with the contemporary “behavioralism” theory in recognizing the complexity of data processing scenarios and the involvement of multiple stakeholders. However, disparities emerge in terms of institutional selection. When viewed from the perspective of law and economics, the focus shifts to addressing the efficiency of property rights establishment, evaluating the extent to which the construction of property rights can respond to the issue,

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and assessing whether the adverse effects incurred are outweighed by the benefits they bring.

The academic discourse is primarily centered around this issue. The main challenge lies in the rapid technological changes occurring today. As Toffler articulated in “Future Shock”, we find ourselves in the 800th generation, which greatly differs from the preceding ones. The question arises whether the abstract thinking of legal professionals can formulate norms to adapt to the continually evolving society and the complexities of the market economy. In this context, we should broaden our perspective to contemplate the existing pattern of the data economy market and the rational regulatory models based on it. While legal wisdom accumulated since the Roman era could address issues in agricultural and industrial economies, we must acknowledge the need to reexamine and clarify its fundamental logic in the backdrop of the rapid development of the industrial economy. Under the lens of the current digital economy, economic viewpoints are also evolving. The extent of legal intervention should be attuned to its developmental trajectory, and effective speculation should be carried out based on the prospects and emerging issues in the digital economy.

Synthesizing the above-mentioned perspectives, this paper initially conducts a comprehensive examination of the issue of property rights construction through the lens of law and economics. Currently, prevailing approaches often involve examining the issue from the angle of actual corporate control, commencing with the liability rules. Another approach is to propose a fundamental mode of thinking based on Professor Ling Bin’s application of the Calabresi-Melamed Framework in the context of China.[3] This paper no longer confines its discussion solely to the feasibility analysis from the perspective of law and economics. Instead, it treats it as a mode of thinking and contemplates it within the framework of the four regulatory approaches proposed by Lessig, capturing the marginal and practical effects of legal intervention. Simultaneously, when faced with the lateral data circulation phase, the rules of property and liability function as gates, directing the flow of data. The introduction of the rule of pliability synthesizes these two traditional protection models, providing a more continuous mode of contemplation.[4]

Furthermore, building upon the second perspective, this paper will delve into the realm of the digital economy. Beginning with the academic approach of corporate control and incorporating judicial practice and current realities, it will integrate the dominance of platforms and consumer interests. This will pinpoint that, within the discourse of property rights construction, the first step should be an exploration of the legal status of present platform entities. The angle of property rights construction should primarily focus on the distinction between entities in the digital economy and those in the physical world.

## **2 The Practical Significance of Lessig’s Multifaceted Regulatory Framework**

Lessig’s proposition of the four regulatory modes holds substantial enlightening significance in the contemporary context,[5] warranting adoption as a concrete mode of

thinking. By centering on the subjects subject to regulation, Lessig presents four potential sources of influence: market, law, norms, and architecture. These four forces intertwine, potentially complementing or constraining each other.

What merits specific contemplation and reflection is Lessig's meticulous discourse on these four regulatory modes. Initially, Lessig draws from Mill's assertion in "On Liberty" that not only governmental actions but also social norms impose constraints. A vital premise here is that Mill solely focused on the subjects subject to regulation, namely freedom. Moreover, Lessig underscores that the four regulatory modes possess intricacies and interplay among them. Balancing the trade-offs between cost and benefit, efficiency and fairness, is imperative when considering the interplay of distinct regulatory modes.

In the ensuing progression, Lessig explores the proactive role of law. He elaborates how law intervenes in the constituents of the market and taxation to alter its dynamics. Law also engenders changes in the physical "architecture" of real life; for instance, laws like the "Americans with Disabilities Act" mandate alterations in architectural design to safeguard affirmative rights. Law is also capable of modifying community norms by inculcating specific legal concepts to regulate group behavior.

Building on the impact of law on architecture, Lessig posits that law plays its role in two modes: directly by prescribing actions and indirectly by reshaping constraining structures. Upon entering the digital realm, this power to reshape architecture reaches its zenith. Subjective judgments indicate that while the efficacy of law and social norms hinges on individuals' awareness, architecture exerts influence regardless of the subject's awareness.

The insight from this passage is highly pragmatic, offering alternative factors to consider when contemplating the efficiency of legal intervention. It cautions against a "legal-centric" mode of thinking and emphasizes adhering to a certain reality-based logic. Moreover, it warrants further analysis of the profound influence of law in conjunction with architecture and the more comprehensible societal norms within the context of social networks.

Taking copyright law and digital rights management as examples, the influence of law on architecture must account for real-world factors and align with the logic of the digital economy. Equally significant is the fact that architecture's establishment in the digital realm is nearly costless and embodies characteristics that must be adhered to once established. This aspect underpins the foundational logic of establishing electronic contracts between users and the digital realm. The roles played by architecture and technology must be duly acknowledged, considering both direct and indirect modes of legal regulation.

However, before delving further into the discussion, it is imperative to first clarify the fundamental meanings of data, typically distinguished between data resources and data products.[6] Some scholars argue that controversial data for discussion includes, for instance, data lacking originality and thus ineligible for copyright protection (such as platform data).[7] In light of judicial practice and considering contentious issues, one of these debates revolves around whether corporations hold property rights over personal data collections. Due to the operational model of multi-sided platforms, platform operators are obliged to disclose more information within the platform,

making it easily accessible to other companies. Thus, a fundamental conflict emerges: the platform operators' demand for exclusive control over data versus other companies' demand for open data sharing.

Generally, the approach to constructing property rights emphasizes the lateral flow of data, categorizing data hierarchically, and delineating a binary division between users and enterprises. However, it's worth noting that over the past two decades of the "illicit rise" of the internet, a distinctive type of data processing entity, the platform, has emerged. The uniqueness of platforms lies in their connection to various data-collecting enterprises and has resulted in a monopolistic internet economy pattern dominated by multiple platforms. As a result, a necessary shift in perspective is required regarding the distinct requirements for data circulation between platforms and ordinary data collectors. Scholars have also proposed the concept of architecture property rights in response to this.[8]

The specific details of this aspect will be differentiated and explored in the section discussing corporate subjects.

### **3 Institutional Examination from the Perspective of Law and Economics**

The fundamental approach of this chapter is to initiate a preliminary discussion on the general allocation of property rights from the perspective of law and economics. It also delves into the relationship between the regulatory modes proposed by Lessig and the intervention of law. In the context of law and economics, the discussion revolves around the feasibility of the liability protection model, primarily centered on the initial allocable shares to corporations. Additionally, there is a comprehensive consideration of the shortcomings associated with the liability rule.

In the typical perspective of law and economics, the approach involves examining the efficiency of existing systems, while for the allocation of data property rights, the analysis can start from scratch.[9] Starting from scratch, the angle of consideration pertains to the necessity of establishing property rights over this resource. Professor Coase, drawing on the classic work of Demsetz, contemplates this issue by asserting that property rights become necessary when internalized benefits exceed costs. Demsetz further introduces the concept of community internal preferences,[10] illustrating how anthropological experiences aim to explain that assigning property rights is a way to address the "tragedy of the commons" or, in other words, dissipate rent-seeking behavior. However, some scholars have criticized this viewpoint, perceiving it as a bottom-up ideal model, where individuals can engage in communicative transactions. Reality, however, often adheres to a top-down model. Considering the perspectives of both scholars, one can infer that, in a broad sense, the establishment of property rights holds a degree of legitimacy.

A more in-depth approach involves exploring, within the framework established by Calabresi and Melamed,[11] whether, under different protection modes, those best equipped to exploit this resource can obtain property rights. Generally, assigning initial property rights to individuals, protected under the property rules mode, is believed

to lead to a “reverse tragedy of the commons”, contradicting the initial intent of rapid data circulation in the digital economy era.

Adopting the liability rule protection mode, platforms need to provide compensation to acquire property rights. However, determining the pricing mechanism for the liability rule poses certain challenges. While applying the liability rule might seem reasonable due to high transaction costs, it overlooks the cost of judicial valuation. With a large number of individual participants, this can lead to a situation of uniform or tiered pricing. Moreover, as platforms and users have established fixed interactive relationships, this protection mode could potentially lead to the phenomenon of “undervaluing data”.

When initial property rights are assigned to platforms, the property rule protection mode clearly falls short of expected goals. Adopting the liability rule protection mode contradicts the logic of digital economic development, and it might not ensure that individuals get access to the “whole” dataset. After all, data is distinct from tangible goods.

Indeed, single protection modes seem incapable of resolving the issue. Further contemplation can be guided by the “rule of pliability” proposed by scholars.[12] The Calabresi-Melamed Framework can be visualized as a fixed pyramid structure, ranging from the prohibition rule to the property rule and then to the liability rule. These rules are not inherently related, but the essence of the rule of pliability lies in triggering events that manifest shifts in protection modes. This concept is typically categorized into classic pliability, zero-order pliability, simultaneous pliability, and three-stage pliability.

The significance of this approach lies in its capacity to establish connections between different legal domains, creating a coherent perspective across isolated legal fields. Our existing legal system already employs the rule of pliability in various aspects. For instance, the fair use doctrine embodies simultaneous pliability, and within different application scenarios, the same subject may embody both the property rule and the liability rule.

From this perspective, if assigning initial property rights to platforms exacerbates inequality, then in the scenario where initial property rights are assigned to individuals, the first point corresponds to the resolution of the “reverse tragedy of the commons”. The practical application of the three-stage pliability rule can be seen in scenarios like land acquisition or inheritance.

The underlying logic is that the initial protection mode is the property rule, followed by switching to different modes based on the increasing or decreasing value of each individual’s resources. This reallocation allows another party to reclaim the protection mode of the property rule.

However, transition to the realm of data property rights allocation reveals a significant difference. The unique characteristic of data is its “generation upon entry”. Generally, users produce data through human-computer interaction facilitated by user agreements. Notably, data lacks significance in real life if there is no interaction with endpoints or specific machines. The fundamental challenge lies in individuals’ limited perception of data – we merely know that certain actions generate corresponding raw data, and our records and choices are uploaded to the cloud. The most intriguing as-

pect of the platform model is that individuals' "lost data" eventually feedback to the subject themselves via recommendation pages. Furthermore, the primary function of data generated by individuals lies in "manufacturing consumers". Hence, in this sense, empowering individual data property rights only serves functional significance.

The exploration of functional significance also necessitates considering its operational aspects. Returning to the perspective of applying the pliability rule mentioned earlier, the remaining paths involve assigning initial property rights to individuals and toggling between the property rule protection mode and the liability rule protection mode. Transitioning from the property rule to the liability rule protection mode is more akin to the current user situation in the real context, and this liability rule protection mode might not even require any payment. The triggering event in this case is the criticized user agreements and informed consent clauses.

This line of thinking, however, provides an important insight into refining triggering events and the aforementioned property rights protection mode. Under the circumstance of assigning initial property rights to individuals, the protection mode of property rights must possess genuine significance. The logic concerning data generation and its relationship with platforms, as indicated earlier, suggests that this discussion is not something law can fundamentally alter. The only avenue for change lies in the approach of "leaving technical issues to technology". It's worth noting that some platforms have attempted to redefine the relationship between individuals and platforms, thereby offering a path for discussing individual property rights that could be followed.

Another approach involves transition from the liability rule to the property rule. More accurately, this mode, when combined with the real context, resembles the "fencing-in rule" within the pliability rule. Through the "informed consent" clauses in user agreements, individuals implicitly grant platforms the right to use their data without compensation. In reality, the status of this data has always remained ambiguous. The question arises whether individuals can acquire certain permissions through their actions. For instance, the construction of individual access rights is based on platforms already having extensive control. By applying the simultaneous pliability rule protection mode, individuals can distinguish different usage scenarios. This scenario widely appears in the practical context of individuals' requests for access to their involved data.

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