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Original Paper

Can the "Complex-Simple Case Diversion" Reform in Civil Litigation Procedures Promote Corporate Innovation?

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Abstract

This paper treats the "complex-simple case diversion" reform in civil litigation as a quasi-natural experiment. Using panel data from A-share listed companies (2015-2024) and a difference-in-differences (DID) model, we examine the impact of improved judicial procedural efficiency on corporate innovation. The reform significantly increases corporate innovation output. Mechanism analysis shows that, at the city level, the reform strengthens institutional support by improving adjudication quality, the rule-of-law environment, and IP protection; at the firm level, it alleviates innovation constraints by reducing administrative costs, increasing R&D spending, and optimizing supply chain concentration. Heterogeneity analysis reveals positive innovation effects in the eastern region but negative effects in the central region, with no significant impact in the west. At the industry level, the reform boosts innovation in labor-intensive, capital-intensive, and regulated industries-especially labor-intensive firms-while showing no significant effects in technology-intensive or non-regulated industries. From a "rule-of-law optimization to innovation-driven development" perspective, this paper reveals how judicial reforms promote enterprise innovation, offering theoretical and policy insights for evaluating judicial reforms and improving innovation governance.

Keywords

judicial procedures, reform of case classification and diversion, enterprise innovation

1. Introduction

The Third Plenary Session of the 20th CPC Central Committee emphasized that strengthening the role of enterprises as the main drivers of scientific and technological innovation and improving the scientific and technological innovation system are core pillars for building a new development

paradigm. As an integral part of the socialist market economy, the optimization of a rule-of-law-based business environment plays a crucial role in stimulating innovation momentum and reducing institutional transaction costs. Currently, Chinese enterprises still face practical constraints in their innovation activities, such as high costs of protecting rights and difficulties in commercializing results. In particular, the issue of "negative incentives for innovation" caused by the inefficiency of intellectual property dispute resolution urgently needs to be addressed. Kim et al. (2025) point to a growing problem in IP litigation. Courts are handling more cases each year, but complex technical disputes still drag on, and damage awards vary widely. For innovators, this creates a real dilemma: the time it takes to secure rights protection often has little relation to the actual R&D cycle. A breakthrough that cost a firm years to develop can be infringed almost overnight, yet the legal process for compensation may stretch so long that, by the time a judgment arrives, the innovation has already lost its market edge. That delay does more than raise the cost of innovation. It also nudges firms toward safer, incremental improvements—those they can protect and enforce quickly—rather than pursuing riskier frontier technologies. It's even worse because courts are already overburdened. When simple IP cases consume resources that should go to core technology disputes, adjudication quality in the harder cases tends to suffer. Many enterprises simply stop enforcing their core patents. Not because the claims lack merit, but because the litigation timeline makes enforcement impractical.

China has been trying to separate complex civil cases from simple ones. This effort has actually helped ease the innovation pressures that firms face. The logic is simple. Not all cases are equally complex or carry the same stakes, so there's no reason to treat them all the same when allocating judicial resources. If courts get the allocation right, both efficiency and adjudication quality should improve. In 2015, the Supreme People's Court formally endorsed this idea through its "Opinions on Comprehensively Deepening the Reform of People's Courts." Since then, differentiated case handling has become a key tool for dealing with the long-standing problem of too many cases and too few judges. And by most accounts, it has noticeably raised judicial efficiency.

Courts now handle simple cases fast and complex cases carefully. That cuts time and cost for firms protecting innovations. Simple cases get resolved quickly. Fewer people and less money get tied up in litigation. Those resources can go back into R&D. Complex cases get better judgment. When firms trust courts to make hard calls right, they invest more. Firms also change how they think about innovation. Courts are faster and more precise. Companies stop shortening R&D cycles just because enforcement used to take forever. They start doing longer-term, riskier research. Industry-academia collaboration gets smoother too. Less contract friction. R&D, rights confirmation, and commercialization start to reinforce each other. So the reform does more than just save judicial resources. It pushes firms away from chasing volume and toward betting on quality.

We use A-share listed companies from 2015 to 2021. We run a DID model. The question: does the differentiated case handling reform push corporate innovation? Yes. It boosts innovation output. The

effect is stronger for medium-sized firms. The mechanism is clear. The reform streamlines procedures. That speeds up adjudication. Faster dispute resolution cuts uncertainty around rights protection. Firms then feel safer investing in innovation.

The marginal contributions of this study are as follows: Most research on courts and innovation looks at judicial protectionism (Aimin, 2024; Lp, 2017) or IP protection (Cheryl & Jun, 2015; Wang et al., 2025). Few people talk about the real problem: courts are overloaded. We take that angle. We treat judicial efficiency as time and cost. Then we ask: when transaction costs drop, what happens to firm innovation? The reform cuts case backlogs. That speeds up rights protection. That helps R&D. The innovation literature focuses on financing and taxes (Wu et al., 2025; Liu, 2025; Xiang et al., 2025). We add judicial procedural efficiency. That brings time cost into the picture. We also show evidence for a chain. Reform improves market governance. Better governance drives innovation. The reform fast-tracks simple cases to free up court capacity. It digs deeper into complex cases to sharpen judgment. Both lower protection costs and improve rights confirmation. Firms win on both sides. That makes them real innovators.

The paper is set up like this. Section II reviews literature. Section III covers background and theory. Section IV describes the research design. Section V reports main results. Section VI does further analysis. Section VII concludes.

2. Literature Review

2.1 Research on the "Case Diversion" Reform

China's courts have rolled out case classification reform in recent years. A few studies have started looking at it. Wang and Tang (2023) find the reform improves judicial efficiency. It also pushes innovation resources toward market-oriented allocation. That effect is strongest where contract enforcement is costly and social trust is low. Rao (2023) takes a different approach. He looks at how intelligent models sort complex civil cases from simple ones in the digital age. His point: smarter tech, paired with the judicial system, can make case classification more consistent and practical. Zhan and Cao (2023) push back on the reform's design. They say case classification should weigh both the substantive stakes and the nature of the litigation itself. Without that, the system risks systematic bias. Zuo (2022) runs empirical tests. The reform improves efficiency, he finds. But it hasn't come at the cost of litigation rights. Efficiency and rights protection can coexist. Still, the balance needs constant adjustment. Li (2023) flags a practical problem. Chinese courts lack consistent standards for deciding what counts as "complex" versus "simple." There is an urgent need to improve the classification of cases as complex or simplified during the filing and acceptance stages, and to safeguard the right to object to the application of procedures.

Although there is currently little discussion abroad regarding the "differentiated case handling" reform, its core concept—the differentiated allocation of judicial resources based on case type—has been

widely discussed in international judicial administration research. For example, Contini (2023) notes that the Italian judicial system has long faced efficiency issues due to lengthy procedures, poor predictability of judicial decisions, low public trust, and a lack of judicial integrity. Falavigna and Ippoliti (2021) go further. They say Italy's staffing structure and civil procedures are the main reasons for inefficiency. That's where policymakers should start reform.

Bogetoft and Wittrup (2021) come closest to the idea of case classification. They argue that for a judicial system to be efficient, you need a case-weighting system. Different types of cases—criminal or civil—need different resources. That matches the case classification approach well: allocate resources based on complexity. Some scholars worry about unequal resource allocation. Viapiana (2021) argues that uneven distribution across courts could widen regional gaps in judicial efficiency. It could also hurt the principle of equality before the law. But here is a key point. Case classification works inside a single court. It is not about distributing resources across courts. So the fairness risks show up more at the procedural level, not as regional or inter-institutional inequality.

Belarouci et al. (2023) find that judicial efficiency goes with caseload. Kleiman et al. (2019) note that US courts and some foreign courts have started using objective, evidence-based methods to figure out how many judges they need. They assess workload and then allocate resources. Other scholars look at resource use. Santos and Amado (2014) find that less than 16% of Portuguese courts use their resources well each year. Peyrache and Zago (2016) point to irrational resource allocation in Italy. They suggest merging small courts and splitting large courts. That would reduce cases where big courts handle minor matters and small courts handle major ones. The goal is to allocate resources rationally and raise efficiency. China's approach is different. It does not rely on institutional restructuring. Instead, it uses procedural innovations. Examples include expedited proceedings, element-based adjudication, and online mediation. These help achieve thorough adjudication for major cases and swift adjudication for minor ones. All this happens without changing the court structure. That gives China more flexibility and practicality.

So case classification started in China. But its core ideas—differentiated case management and precise resource allocation—match global judicial reform trends. Put this system next to international research on judicial efficiency. That gives us two things. It strengthens the theory behind it. And it offers a new comparative law angle on how to balance procedural justice with efficiency.

2.2 Factors Influencing Corporate Innovation

A lot of work looks at what drives corporate innovation. Scholars have taken different angles. Some focus on internal factors. R&D spending matters. So does innovative talent. So does organizational structure and strategic positioning. Innovation takes long-term, repeated R&D investment. It also needs people who can push it forward. Many studies use R&D investment and the number of innovative personnel as measures of innovation capacity (Liu et al., 2019; Klewitz & Hansen, 2015; Hill & Rothaermel, 2003). Organizational structure theory asks what kind of setup encourages innovation.

Structure matters. Managerial characteristics matter. Firm size matters too (Cohen & Levinthal, 1989; Damanpour, 1991; Damanpour, 1996; Fagerberg et al., 2005). Wang (2025) finds that managers' perceptions of innovation have a positive effect. Andres et al. (2025) look at the link between talent management and corporate innovation.

From an external perspective, corporate innovation is influenced by factors such as market structure, government policies and legal systems, financing channels, and digital technologies. Highly competitive markets incentivize corporate innovation, whereas monopolistic firms may lack the motivation to innovate. Jing et al. (2019) examined the relationship between institutional ownership, firm characteristics, and corporate innovation from the perspective of industry competition. Policy incentives such as tax breaks, R&D subsidies, and intellectual property protection encourage corporate innovation. Shahbaz (2012) examined the impact of managerial compensation incentives on corporate innovation under different ownership structures. If firms can get financing, they innovate more. Martin (2009) looks at two things together: institutional openness and foreign investment. The finding—when openness is high, using foreign capital boosts core innovation and breakthrough capabilities. Chen et al. (2024) find that FDI mergers and acquisitions raise innovation in target firms. The main channel? Fewer financing constraints. Digital transformation and open innovation also matter. Key tech areas like 5G, AI, and IoT can push corporate innovation forward.

2.3 Legal Institutional Environment and Corporate Innovation

A fair amount of work has tied legal institutions to corporate innovation, mostly around legal protection, IP, and the general legal environment. Shen et al. (2022) show that stronger legal protection pushes private firms to innovate more. Nie et al. (2024) take this further—legal protection doesn't just boost innovation, it raises its quality by channeling investment into capital and technology. The effect isn't uniform, though. High-tech firms, smaller ones, and those with less financing pressure all respond more strongly. Hao et al. (2024) add another piece to the puzzle. They find that the legal environment pushes firms toward asset-specific investments, which strengthens technological innovation and helps exporting firms break through the productivity paradox. Enforcement efficiency matters too. Tang (2019) and Nie et al. (2024) both find that when enforcement is faster and more effective, innovators get better protection—shorter resolution times, higher damages, fairer judgments.

Intellectual property protection pushes corporate innovation. A lot of studies back this up. Xie and Zhou et al. (2025) show that stronger judicial IP protection does two things. It raises how often and how much firms collaborate on innovation. It also shifts the patent structure toward higher quality. So IP protection affects both the quantity and the quality of innovation. But Tong et al. (2014) looked at state-owned enterprises after China's third Patent Law revision. They found that these firms filed more patents. But most of them were low-quality, non-invention patents. Fang et al. (2017) make a different point. The state of IP protection matters for corporate innovation investment. The effect is especially strong for non-state-owned firms and in highly competitive industries. A stronger IP legal framework

also widens protection scope and raises damages for infringement. That gives IP holders better judicial protection. Abrams (2009) studied the TRIPS agreement. Extending patent terms increases patent filings and citations. The longer the extension, the bigger the positive effect. Galasso and Luo (2017) looked at U.S. tort reform. Capping non-economic damages in infringement cases cut medical companies' patent applications by 14%. That drop lasted at least four years.

The legal environment affects corporate innovation in several ways. IP protection, investment incentives, and regional policies all play a part. A firm's own resources and capabilities matter, of course. But legal support matters too.

Now look at the literature on differentiated case management and corporate innovation. Both areas have a lot of research. But few studies sit at the intersection. Two gaps stand out. First gap. Most work on the differentiated case handling reform looks inside the judicial system. It does not look at external economic effects. It misses the impact on micro-level firm behavior. Second gap. Research on corporate innovation focuses on usual factors. Financing. Taxes. Organizational structure. But it ignores judicial procedure reform. Few ask whether faster judicial procedure directly helps firms innovate by easing real-world constraints. We try to fill those gaps. We take a new angle. We look at judicial efficiency as a matter of time. We look at litigation costs as an economic issue. Then we ask: when transaction costs drop, what happens to firm innovation? The differentiated case handling reform speeds up judicial procedures. That eases the too-many-cases-too-few-judges problem. Firms face lower costs and stronger rights protection. That pushes R&D innovation.

3. Policy Background and Theoretical Analysis

3.1 Policy Background

China's push to separate complex from simple cases didn't come out of nowhere. Since reform and opening-up, the economy shifted, the legal system got better, and civil litigation cases exploded. At the same time, people's mediation and other non-litigation channels lost their edge, which meant more disputes ended up in court. The math was brutal—way too many cases, not nearly enough judges. The Central Political and Legal Affairs Work Conference eventually put forward a fix: sort cases by complexity and scale, split major from minor, fast-track from regular. The idea was to take pressure off courts, improve service quality, keep litigation rights intact, cut costs, and give people different paths to resolve disputes depending on what they actually needed. On December 29, 2019, the National People's Congress gave the Supreme People's Court the green light to run a two-year pilot. It covered 20 cities—Beijing, Shanghai, Nanjing, Hangzhou, Guangzhou among them—and tested whether the complex-simple case separation could actually work at scale.

The reform has many parts. They touch different areas of civil litigation. Streamline procedures. Expand scope. Push electronic litigation. All work toward the same goal. Judicial confirmation. The reform makes it easier to get mediation agreements confirmed by the court. It now covers agreements

from specially invited mediation organizations too. Scope widens. Agreements become more enforceable. Parties get a cleaner, faster way to settle disputes. Small claims procedure. The monetary threshold went up. Rulings got simpler. They added a conversion mechanism. Cases can shift between procedures when needed. That makes small claims more flexible and usable in more situations. Summary procedure. Service by publication is now included. Proceedings are simpler. Time limits got a bit longer. Result? Summary procedure gets used more often. Judges have lighter caseloads. Single-judge system. It expanded. Some first-instance ordinary procedure cases can now go to a single judge. So can certain second-instance cases. That cuts wasted human resources and speeds things up. The effect shows up clearly at the second-instance level. Electronic litigation rules. Online and offline actions now carry equal legal weight. Service by publication is faster. Online hearings are supported. Court efficiency jumped. This mattered a lot during the pandemic.

So here is the bottom line. The case classification reform speeds up adjudication. It eases the too-many-cases-too-few-judges squeeze. Judicial resources get allocated more rationally. Fairness and efficiency both move in the right direction. Public trust in access to justice improves too.

3.2 Theoretical Analysis

This paper argues that the "differentiated handling of complex and simple cases" reform pushes corporate innovation through two paths: it cuts costs, and it sharpens firms' willingness to defend their rights. The first channel is straightforward—faster, cheaper litigation means firms spend less on disputes. The second is less obvious but arguably more important: when procedures become simpler and more practical, firms actually start believing the legal system will back them up, and that changes how they behave.

3.2.1 Transaction Cost Effects

Institutions matter for economic efficiency—that's not new. What this reform does is reshape litigation procedures in a way that pulls down transaction costs across the board. Cases get sorted by complexity and amount, so simple ones move fast and complex ones get the attention they need. That alone reduces waste of judicial resources. On top of that, small claims procedures, element-based judgments, online mediation—all of these speed things up and make the system more time-efficient. And when rulings come quickly and predictably, the uncertainty around litigation outcomes drops, which makes the whole system feel more stable. Coase already made the point that transaction costs determine how efficiently resources get allocated. This reform hits that mechanism from both sides. On the ex post side, shorter processing times and simpler procedures mean firms don't have to sink as much time, money, and labor into defending their rights. Those saved resources can go straight into R&D—especially the kind that's risky, long-cycle, and resource-heavy (Acs, 2014; Hall & Harhoff, 2012). On the ex ante side, the reform curbs uncertainty by making courts more predictable. When contract enforcement feels credible and property rights feel secure, firms face lower monitoring costs when they collaborate with partners on innovation. Cooperative risks become more manageable. Firms can form what North called

"stable expectations" about the future, which gives them the confidence to bet on long-term, large-scale innovation. There's one more thing worth flagging. The reform hasn't just cut the cost of protecting rights—it's also shifting how firms think about innovation. With judicial protection actually working, more firms are moving away from defensive, reactive innovation and toward proactive, exploratory R&D. That's a qualitative shift, not just a cost saving.

3.2.2 The Effect of Rights Protection Awareness

China's IP protection system still has gaps, and enforcement has been weak—that's well documented (Li, 2023). The result? Firms don't have much intrinsic motivation to apply for IP rights in the first place. But as the legal system improves, the cost of exercising those rights comes down. Judicial enforcement goes from being slow and expensive to being quick and accessible. When that happens, firm behavior shifts. Instead of passively putting up with infringement, companies start actively using the courts to defend what's theirs. That growing "rights protection awareness" feeds back into innovation incentives. Evolutionary economics would frame this as a shift in behavior patterns driven by institutional change. The reform builds a tiered litigation system that lowers the barrier to going to court. When a firm's innovation gets copied or infringed, the reform makes it easier and cheaper to fight back—and that wakes up rights protection awareness in more firms. They start seeking legal channels instead of just absorbing the loss. This basically fills a gap in China's IP protection system. When protection gets stronger, firms invest more in innovation (Katz & Shapiro, 1987), and they're willing to spend more on R&D (Hu & Jefferson, 2009). As firms' awareness of protecting their innovations has significantly increased, effective protection also makes them more willing to invest in R&D, further driving corporate innovation. The strengthening of this protection mechanism not only enhances firms' willingness to innovate but also promotes improvements in patent quality, creating a virtuous cycle of "stronger protection—R&D investment—more innovation." Thus, the "streamlining and differentiation" reform directly incentivizes corporate innovation by lowering rights enforcement costs and indirectly promotes higher-quality corporate innovation by improving the IP protection system, thereby providing institutional support for long-term innovative development.

4. Method

4.1 Research Design

To assess the impact of the "differentiated litigation" reform in civil procedures on corporate innovation, this paper constructs the following DID model based on the timing of the reform to investigate the aforementioned issues:

$$Patent_{i,c,p,t}=\alpha_0+\alpha_1 CSSFirm_{c,t}+\phi Control_{i,t}+\rho Control_{c,t}+v_i+\tau_{p,t}+\varepsilon_{i,t} \quad (1)$$

In this model, i represents the firm, t represents the year, c represents the city, p represents the province, v is the firm fixed effect, $\tau_{p,t}$ is the year fixed effect, and $\varepsilon_{i,t}$ is the residual term.

4.2 Variable Definition

The dependent variable, firm innovation (*Patent*), is measured by firm patent output. *CSSFirm* serves as the explanatory variable; it takes a value of 1 if the firm's prefecture-level city piloted the civil litigation streamlining reform in that year, and 0 otherwise. Firms in areas where the "streamlining" reform was implemented take a value of 1, and 0 otherwise. The selection of control variables (*Control*) draws on existing research (Wu & Tang, 2016; Li et al., 2021), and include population size, development level, economic growth, number of enterprises, foreign investment, firm size, profitability, cash flow, solvency, and financial leverage. The definitions and measurements of the variables in this paper are presented in Table 1.

Table 1. Variable Definitions

Variable	Variable Name	Variable Definition
Patent	Quality of Corporate Innovation	Proportion of Invention Patents Held by Listed Companies
CSSFirm	Civil Case Streamlining Reform	If the courts at all levels in the jurisdiction where the enterprise is located are piloting the civil litigation complex-simple case diversion reform in the current year, the value is 1; otherwise, the value is 0
Population	Population Size	The natural logarithm of the permanent resident population of the prefecture-level city where the enterprise is located
GDPPer	Development Level	The natural logarithm of the per capita GDP of the prefecture-level city where the enterprise is located
GDPGrowth	Economic growth	GDP growth rate of the prefecture-level city where the firm is located
FirmNum	Number of firms	Natural logarithm of the number of enterprises above a certain scale in the prefecture-level city where the firm is located
Foreignnum	Foreign Investment	The natural logarithm of the number of foreign-invested enterprises in the prefecture-level city where the enterprise is located
Size	Company size	The natural logarithm of the enterprise's total assets
ROA	Profitability	Return on Assets
Cash	Cash Flow	Net operating cash flow divided by total assets at the beginning of the period
Liquidity	Solvency	Current Ratio

Leverage	Financial Leverage	Corporate Debt-to-Equity Ratio
Tangible Ratio	Tangible Assets Ratio	The proportion of a company's tangible assets to its total assets

4.3 Data Sources and Descriptive Statistics

This study uses A-share listed companies from 2015 to 2024 as the research sample and processes the raw data as follows: (1) Exclude financial listed companies; (2) Exclude ST, *ST, and insolvent companies; (3) Exclude samples with missing or outlier values for key variables; (4) Apply 1% and 99% trim-and-fill to all continuous variables. The final dataset comprises 31,179 "firm-year" observations. Data on firm size, financial performance, and corporate governance in this study are sourced from the CSMAR database, while per capita GDP growth rates are derived from the National Bureau of Statistics' annual *China Statistical Yearbook*. Patent-related data are sourced from the China National Intellectual Property Administration's patent search database, with missing patent data supplemented using the Wind (WIND) database. Court data were sourced from the Judgment Document Network, the CourtData database, and manually collected and organized materials. The descriptive statistics for the variables are shown in the table below:

Table 2. Descriptive Statistics of Variables

Variable Name	Observation	Mean	Standard Deviation	Minimum	Maximum
Patent	31,146	113.46	523.09	0.00	16,405.00
CSSFirm	31,179	0.44	0.50	0.00	1.00
People	31,179	6.51	0.63	1.52	8.25
GDPPer	31,179	11.62	0.45	7.81	13.22
GDP Growth	31,179	7.21	2.30	0.00	32.40
FirmNum	31179	8.09	0.99	1.73	12.89
ForeignFirm	31,179	5.39	1.66	0.00	10.62
Size	31,179	22.34	1.34	18.27	35.77
ROA	31,179	0.04	0.07	-0.29	0.90
Cash	31,179	0.06	0.08	-0.15	1.03
Liquidity	31,179	2.54	2.58	0.00	40.02
Leverage	31,179	0.42	0.21	0.00	2.10
TangiRatio	31,179	0.93	0.09	0.00	1.00

5. Empirical Analysis

5.1 Baseline Regression

Column (1) of Table 3 reports the results of univariate regression on the impact of the "Simplified-Traditional Track Separation" reform on corporate innovation. The regression coefficient

for the core explanatory variable *CSSFirm* is positive at the 1% significance level, indicating a significant positive relationship between the reform pilot and corporate patent output. In Column (2), after introducing city-level control variables into the model, the coefficient for *CSSFirm* remains positive at the 1% significance level, confirming the robustness of the results. In Column (3), after further controlling for firm-level variables, the regression coefficient of *CSSFirm* on firm patent output remains significantly positive at the 1% significance level, indicating that the promotional effect of the "streamlining and differentiation" reform on firm innovation output is robust across different model specifications. Overall, compared to regions where the reform was not implemented, the innovation capabilities of enterprises in pilot regions significantly improved after the implementation of the "streamlining and simplification" reform, indicating that the reform effectively unleashed the efficiency of judicial procedures and played a positive role in promoting enterprise innovation.

Table 3. Baseline Regression

	(1)	(2)	(3)
	Patent	Patent	Patent
CSSFirm	0.030***	0.029***	0.029***
	(4.70)	(4.39)	(4.39)
People		0.031	0.031
		(1.49)	(1.52)
GDPPer		0.083***	0.083***
		(3.97)	(3.93)
GDP Growth		0.004**	0.004**
		(2.14)	(2.22)
FirmNum		-0.009	-0.008
		(-0.60)	(-0.58)
ForeignNum		-0.002	-0.002
		(-0.20)	(-0.19)
Size			-0.005
			(-0.73)
ROA			-0.031
			(-0.85)
Cash			0.041
			(1.25)
Liquidity			-0.002
			(-1.00)
Leverage			-0.014

			(-0.49)
TangiRatio			-0.054
			(-1.26)
_cons	0.237***	-0.874***	-0.703**
	(84.67)	(-3.19)	(-2.31)
Firm fixed effects	Control	Control	Control
Province-Year Fixed Effects	Control	Control	Control
Sample Size	26,921	26,921	26,921
Adjusted R^2	0.471	0.472	0.472

Note. *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively; values in parentheses are t-values. The same applies to the following table.

5.2 Robustness Tests

5.2.1 Parallel Trends Test

The parallel trends assumption is a fundamental requirement for the application of the difference-in-differences (DID) method. Drawing on the event study approach of Jacobsen et al. (1993), this paper tests for parallel trends and specifies the following regression model:

$$Patent_{i,c,p,t} = \sum_{k=-4}^{2} \alpha_t treat_{it} \times u_k + \gamma \text{Control}_{it} + \upsilon_i + \tau_{p,t} + \varepsilon_{i,t} \quad (2)$$

Here, 2018 is selected as the base period and denoted as period "-1"; the subscript k denotes the difference between the current period and the base period; u_k represents the time dummy variable; and denotes the difference in changes between the experimental and control groups during this period before and after the implementation of the pilot policy. The results of the parallel trends test are shown in Figure 1. Prior to the implementation of the reform policy to streamline administrative procedures, no systematic differences were observed in the innovation levels of enterprises between the experimental and control groups. After policy implementation, the regression coefficients were all positive, indicating that the reform policy played a positive role in enhancing enterprise innovation levels, thereby validating the parallel trends hypothesis.

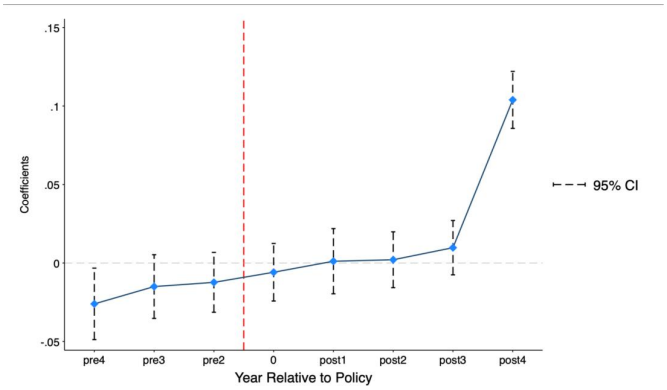

Figure 1. Results of the Parallel Trends Test

5.2.2 Placebo Test

To rule out the possibility that the aforementioned results might be caused by certain unobservable and uncontrollable random factors, this study first randomly selected cities participating in the pilot "streamlining and simplification" reform based on the relative sizes of the treatment and control groups within the full sample and the extended full sample. It then randomly designated a uniform pilot period to generate simulated "firm-year" samples affected by the pilot reform.Regression analysis was performed using this simulated sample to obtain the simulated regression coefficients for *CSSFirm*, along with their corresponding t-values and p-values. This process was repeated 1,000 times, ultimately yielding 1,000 simulated regression coefficients for *CSSFirm*. The test results indicate that the true regression coefficient differs significantly from the coefficients obtained from the corresponding simulated samples; the β coefficients are shown in Figure 2.

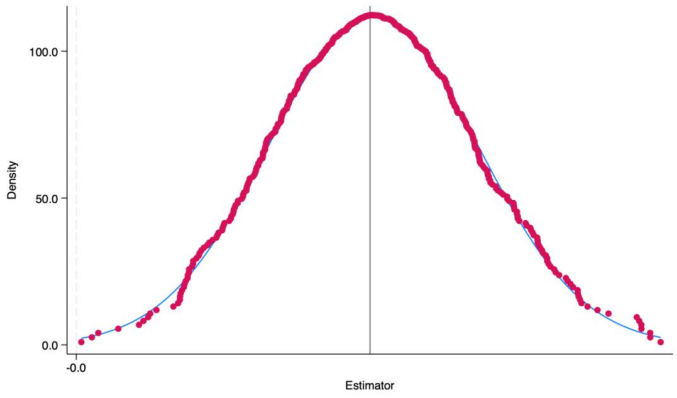

Figure 2. Results of the Placebo Test

5.2.3 Extending the Sample Range

The "Complex-Simple Case Diversion" reform pilot examined in this study lasted only two years, which may have led to certain issues in the research design related to the lag in reform implementation

and corporate innovation adjustments. Although the Fourth Amendment to the Civil Procedure Law of the People's Republic of China, which was deliberated and adopted by the Standing Committee of the National People's Congress on December 24, 2021, fully incorporated the outcomes of the pilot program and implemented them nationwide, However, for district courts that did not participate in the pilot program, improvements in case adjudication efficiency and quality may not match those of pilot courts in the short term. In view of this, our paper extends the sample period through 2024 and includes additional robustness checks—such as parallel trends tests and ruling out other possible explanations—to make sure the findings hold up. As shown in Table 4, Column 1, the coefficient for the main explanatory variable, *CSSFirm*, stays positive and statistically significant at the 1% level. This confirms that our baseline results are robust.

5.2.4 Adjusting the Time Window

Given that the research findings may be attributable to other events occurring before and after the "simplified-traditional character separation" reform, this paper further adjusts the time window to conduct robustness tests. The time period selected for the empirical analysis in this paper is 2015–2024. By progressively narrowing the time window to 2016–2024, 2017–2024, and 2018–2024, we gradually eliminated the potential influence of external shocks or confounding events that may have occurred prior to the reform. As shown in columns 2–4 of Table 4, the results indicate that the coefficient estimates for *CSSFirm* are all significant, suggesting that the reform effect is not driven by pre-reform events but rather by the "streamlining of administrative procedures" reform itself.

Table 4. Robustness Tests 1

	(1) Patent	(2) Patent	(3) Patent	(4) Patent
CSSFirm	0.027***	0.026***	0.024***	0.021***
	(3.92)	(3.72)	(3.21)	(2.69)
Firm-level control variables	Control	Control	Control	Control
City control variables	Control	Control	Control	Control
Firm fixed effects	Control	Control	Control	Control
Province-Year Fixed Effects	Control	Control	Control	Control
Sample Size	30,408	28,832	26,645	24,010
Adjusted R^2	0.454	0.461	0.472	0.490

5.2.5 Changing the Estimation Method

First, it should be noted that the dependent variable in this study is measured by the number of patents, which is a count variable. The previous use of a fixed-effects model for regression may have introduced bias, as ordinary linear models are not suitable for the statistical characteristics of count data. In

contrast, the Poisson model and the panel negative binomial model are econometric methods specifically designed for count data and are better suited to the distribution characteristics of the dependent variable. Therefore, this paper further employs the Poisson model for robustness testing. As shown in Table 5, Column 1, the regression coefficient for *CSSFirm* is significantly positive at the 1% level, indicating that the effects of the "streamlining and differentiation" reform persist.

Unobservable firm-level heterogeneity may lead to omitted variable problems, which fixed-effects models can largely mitigate. At the same time, firm innovation behavior often exhibits path-dependence; prior innovation inputs and outputs significantly influence current innovation decisions. Furthermore, the impact of the "streamlining and simplification" reform on firm innovation may involve lag effects or reverse causality, leading to endogeneity issues in the model. Therefore, this paper further constructs a dynamic panel data model, introduces lagged terms for the dependent variable, and employs a two-step systematic GMM method to effectively mitigate endogeneity bias. The results in column (2) of Table 5 show that the regression coefficient for *CSSFirm* is significantly positive, indicating that after accounting for dynamic effects and endogeneity issues, the promotional effect of the "streamlining and simplification" reform on firm innovation remains robust, and the conclusions of this paper are not highly sensitive to the design of the baseline model.

5.2.6 Excluding Alternative Explanations from Other Judicial Reforms

During China's judicial reform process, multiple institutional innovations may have direct or indirect effects on firm innovation. By manually compiling annual work reports from the presidents of provincial high courts, this study constructed the dummy variable *progov*, which reflects the phased pilot implementation of the "reform of unified provincial management of personnel, finances, and assets for courts below the provincial level" across prefecture-level cities, and included it in the regression. Furthermore, given that judicial reforms such as the establishment of circuit courts were implemented in phases at the provincial level, this paper controls for the "province × year" fixed effects in all regression models, thereby effectively mitigating potential interference from time-varying factors at the provincial level. As shown in column 3 of Table 5, the results of the "case classification and diversion" reform remain significant even after controlling for the fixed effects of judicial decentralization reforms and provincial-level judicial reforms.

5.2.7 Alternative Explanations for Excluding Litigation Risk

Improvements in the efficiency of judicial procedures may promote a quality leap in firms and advance their innovation decisions by subjecting them to litigation pressure from stakeholders. Based on deterrence theory and signaling theory, litigation risk premiums may compel firms to optimize their quality control systems and enhance the efficiency of R&D resource allocation through corporate governance restructuring. Therefore, this study controls for litigation risk faced by firms, corporate governance levels, and product market performance, respectively. As shown in column 4 of Table 5, the indirect channels related to litigation risk do not constitute an alternative explanation in this study.

Table 5. Robustness Test Results 2

	(1) Patent	(2) Patent	(3) Patent	(4) Patent
CSSFirm	0.312***	0.012**	0.029***	0.030***
	(16.92)	(1.98)	(4.40)	(4.49)
Firm-level control variables	Control	Control	Control	Control
City control variables	Control	Control	Control	Control
Firm fixed effects	Control	Control	Control	Control
Province-Year Fixed Effects	Control	Control	Control	Control
Sample Size	27,692	19,129	26,915	26,915
R^2	/	/	0.545	0.545

6. Further Analysis

6.1 Analysis of Mechanisms at the City Level

To thoroughly explore the underlying mechanisms through which the "differentiated case handling" reform promotes enterprise innovation, this paper focuses on examining, at the city level, the channels through which it influences innovation by improving the quality of case adjudication, thereby further strengthening the causal inference and theoretical explanation of the study.

6.1.1 Quality of Case Adjudication

The "Complex-Simple Case Diversion" reform has improved the overall efficiency of the judicial system by optimizing case allocation and procedural design, thereby exerting a positive impact on corporate innovation.On the one hand, by simplifying procedures for straightforward cases and accelerating the adjudication process, the reform reduces the time and financial costs enterprises incur during litigation. This helps enterprises resolve disputes quickly, avoid disruptions to their business plans, and free up more resources for technological R&D and market expansion. This effect is particularly significant for small and medium-sized enterprises (SMEs) facing substantial financial and time constraints, helping to alleviate constraints on their innovation investments. On the other hand, the reform lowers the threshold for litigation and reduces the costs of asserting rights, thereby enhancing enterprises' willingness and ability to protect their interests through legal means. When enterprises face issues such as intellectual property infringement or contract breaches, they are more inclined to seek redress through judicial channels, thereby strengthening their expectations regarding the protection of innovation outcomes and their confidence in asserting their rights. More effective legal protection mechanisms provide institutional safeguards for corporate innovation investments, helping to foster a favorable innovation environment and drive an overall improvement in innovation levels.

Based on the above theoretical analysis, case adjudication efficiency is regarded as a key mechanism through which the "differentiated case handling" reform influences corporate innovation. To conduct

empirical testing, this paper collected and organized data on adjudication duration, appeal rates, and court levels from various city courts using databases such as Peking University Law Database and the China Judgments Online. A comprehensive case adjudication quality index was constructed using the Topsis method, and the following regression model was established based on this index:

$$Score_{m,c,p,t}=\alpha_0+\alpha_1 Courcss_{c,t}+\rho Control_{c,t}+\delta_m+\psi_{p,t}+\omega_{m,t} \quad (3)$$

In the above model, *Score* represents the case adjudication score for each court. The subscripts m denote the court, c denotes the city, p denotes the province, t denotes the year, δ_m is the fixed effect for the individual court, and $\omega_{m,t}$ is the residual term. *Courcss* is the core explanatory variable; if the city where the court is located c piloted the civil litigation case classification reform in the t year, it takes the value 1; otherwise, it takes the value 0. The remaining control variables are the same as those in the main regression at the city level where the court is located.To further remove the influence of time-varying regional factors on the findings, this paper also includes "province × year" fixed effects $\psi_{p,t}$ in the model. Regression results are reported in the first column of Table 6, *Courcss*. The coefficient remains significantly positive, showing that courts in pilot areas of the "complex-simple case diversion" reform achieved noticeably better adjudication quality than non-pilot courts after the reform. This supports the idea that more efficient resolution of disputes is a key channel through which the reform encourages enterprise innovation.

6.1.2 Level of the Regional Rule of Law Environment

The quality of the regional rule of law environment plays a key role as an external institutional condition shaping corporate innovation. By streamlining judicial processes, the "complex-simple case diversion" reform positively affects the rule of law environment and, in turn, creates a more supportive setting for innovative activities.

Looking through a cost-effectiveness lens, a strong regional rule of law environment helps lower the institutional transaction costs that firms face when pursuing innovation. In places where the rule of law is well developed, corporate property rights enjoy better protection and contracts are enforced more fairly, which reduces the uncertainty and risks tied to innovation. By improving judicial efficiency, this reform speeds up dispute resolution and further strengthens the regional rule of law environment in practical terms. Under such conditions, companies do not have to spend excessive resources dealing with possible legal conflicts, freeing up more financial and human capital for R&D and innovation efforts.

When it comes to rights protection awareness, a better local rule of law environment also raises firms' willingness and ability to defend their rights. The "differentiated handling" reform lowers litigation barriers and costs, making companies more ready and able to use legal channels when their innovative achievements are infringed upon. As firms become more active in protecting their rights, the whole region tends to place greater value on intellectual property protection, creating a positive legal cycle. This atmosphere further encourages firms to boost innovation spending, since they trust that their

innovative outputs will receive effective legal protection and that the returns from innovation will be secure. For example, in regions with a strong rule of law environment, companies are more eager to file patents and carry out technological R&D because they know that if infringement occurs, they can obtain fair compensation through efficient court procedures—greatly strengthening their drive to innovate.

Based on the above analysis, the quality of a region's rule-of-law environment is one of the key mechanisms through which the "differentiated case handling" reform influences corporate innovation. To verify this causal pathway, this paper constructs the following regression model:

$$LAWENI_{m,c,p,t}=\alpha_0+\alpha_1 Courcss_{c,t}+\rho Control_{c,t}+\delta_m+\psi_{p,t}+\omega_{m,t} \quad (4)$$

$$IPP_{m,c,p,t}=\alpha_0+\alpha_1 Courcss_{c,t}+\rho Control_{c,t}+\delta_m+\psi_{p,t}+\omega_{m,t} \quad (5)$$

Here, $LAWENI_{m,c,p,t}$ represents the level of the regional rule of law environment, measured using the "Development of Market Intermediary Organizations and Legal System Environment Score" from the *China Provincial Marketization Index Report*; $IPP_{m,c,p,t}$ represents the level of regional intellectual property protection, measured by the number of concluded intellectual property cases at the local level, with data sourced from Peking University's Law Database and the Judgment Document Network.

Looking at the regression results reported in columns 2 and 3 of Table 6, the coefficients for both LAWENI and IPP are positive and statistically significant. This suggests that in cities where the "differentiated case handling" reform pilot was carried out, the regional rule of law environment and the level of intellectual property protection became noticeably higher after the reform compared to cities not included in the pilot. These findings confirm that a better regional rule of law environment serves as another key channel through which the "differentiated case handling" reform encourages corporate innovation.

Table 6. Results of Mechanism Tests at the City Level

	(1)	(2)	(3)
	Score	LAWENI	IPP
CSSFirm	0.002***	1.714***	432.582**
	(3.74)	(4.15)	(2.32)
City control variable	Control	Control	Control
Court/City Fixed Effects	Control	Control	Control
Province-Year Fixed Effects	Control	Control	Control
Sample Size	7,154	1,413	1,412
Adjusted R^2	0.997	0.755	0.631

6.2 Analysis of Mechanisms at the Firm Level

To take a closer look at how the "streamlining and simplification" reform affects corporate innovation

at the firm level, this study focuses on three main channels within corporate operations: lower litigation risk, more R&D investment, and better supply chain management. We pick three proxy variables to capture these channels: how often firms face lawsuits (*Risk*), the share of R&D staff in total employees (*Rdpersonratio*), and supply chain concentration (*ChainCT*). Using these, we test how the reform shapes firm-level innovation outcomes through each channel.

Following the same logic used in the city-level mechanism tests, we now replace the dependent variable in baseline model (1) with the firm-level mechanism variables. This gives us the following regression model:

$$M_{i,c,p,t}=\alpha_0+\alpha_1 CSSFirm_{c,t}+\phi Control_{i,t}+\rho Control_{c,t}+v_i+\tau_{p,t}+\varepsilon_{i,t} \quad (6)$$

where M represents the three firm-level mechanism variables: litigation risk (*Risk*): For the assessment of litigation risk, this study follows the approach of Liu (2022) by calculating the logarithm of the number of lawsuits plus one to obtain the firm's litigation frequency, which serves as a proxy measure of litigation risk.Given the time lag in the impact of litigation risk on financial distress, this study follows the approach of Andreou (2021) by using the value of the litigation risk indicator from the previous year as the variable in the regression model. Proportion of R&D Personnel (*Rdpersonratio*): Measured as the ratio of the number of R&D personnel to the total number of employees. As a core indicator of human capital investment in innovation activities, this variable directly reflects the extent of a firm's human resource allocation to innovation, and its changes can indicate the direction of adjustments in the firm's innovation strategy.Supply Chain Concentration (*ChainCT*): Measured as the arithmetic mean of the ratio of sales to the top five customers to total sales and the ratio of purchases from the top five suppliers to total purchases. This indicator comprehensively reflects a firm's dependence on core upstream and downstream partners; a higher value indicates a more concentrated supply chain structure and correspondingly higher risks associated with the stability of cooperative relationships.

6.2.1 Litigation Risk Mitigation Effects: Risk Management Mechanisms

In daily operations, litigation disputes often create major uncertainty for firms. Those facing contract performance issues, labor disagreements, or IP conflicts not only risk direct losses such as compensation or penalties but also suffer indirect harm from diverted resources and damaged business reputation. Before the "differentiated litigation" reform, traditional procedures suffered from long queues, complex evidence rules, and unpredictable timelines. Once involved in a lawsuit, firms frequently ran into prolonged case resolution: on one hand, unresolved cases could lead to asset seizure or frozen accounts, disrupting cash flow; on the other hand, uncertain outcomes forced firms to set aside large contingency reserves. This not only lowered current profits but also raised investor concerns about operational stability, hurting financing ability and market value.The "differentiated handling" model—fast-tracking simple cases while thoroughly resolving complex ones—directly cuts time costs and legal fees. More importantly, it reduces uncertainty around outcomes, thereby lowering required

contingency reserves. This improves financial statement quality and avoids reputation damage from drawn-out litigation, helping firms maintain a stable business environment and market image.

Column (1) of Table 7 shows a coefficient of -0.141 for *CSSFirm*, significant at the 10% level. This suggests that the "differentiated case handling" reform meaningfully reduced enterprises' litigation risk levels. The finding supports the risk control mechanism: by streamlining procedures and improving adjudication efficiency and certainty, the reform curbs litigation's negative impact on business operations from the start. This offers strong institutional support for firms to focus on core activities and maintain stable growth expectations.

6.2.2 Effects of R&D Investment: Mechanisms for Aggregating Innovation Factors

As the main drivers of innovation, both the number and skill level of R&D staff directly shape a firm's ability to make technological breakthroughs. Whether a company hires more R&D people depends not just on market demand and technical trends, but also on how well innovation results are protected. When judicial efficiency is low, firms face a higher chance that their innovations will be copied or stolen, and enforcing legal rights takes too much time and effort. This lowers the expected payoff from innovation spending, which in turn weakens firms' interest in bringing in R&D workers. Also, when businesses get stuck in long court battles over disputes, they often have to pull technical staff away from their regular work to help collect evidence or attend court hearings. This distracts the R&D team and further cuts down innovation efficiency.

The "streamlining and simplification" reform helps the allocation of innovation resources in two ways by raising judicial efficiency. First, it makes innovation protection faster. For cases like patent infringement or trade secret theft, the faster legal process allows disputes to be settled quickly, stopping illegal acts earlier and reducing losses from innovation. Second, more standardized court procedures and clearer outcomes give firms greater confidence in their returns from innovation, making them more willing to invest in long-term human capital—such as hiring R&D staff with higher degrees or providing on-the-job training. At the same time, better dispute resolution means R&D personnel spend less of their time on legal matters, helping keep research activities running smoothly.

Looking at Column (2) of Table 7, the *CSSFirm* coefficient for the share of R&D personnel is 0.525, which is positive and significant at the 10% level. This suggests that the "streamlining and differentiation" reform has noticeably raised corporate R&D investment levels. This finding supports the innovation factor agglomeration mechanism: by improving the environment for protecting innovation results and lowering disruptions to R&D work, the reform pushes firms to grow their R&D teams. In this way, it boosts the concentration of innovation factors and builds a solid human resource base for increasing innovation output.

6.2.3 Supply Chain Effects: Risk Mitigation Mechanisms Through Collaboration

Corporate innovation is rarely a solo effort. Instead, it depends heavily on working with upstream and

downstream partners. Suppliers offer essential raw materials and technical parts, while customers share market needs and suggestions for product improvements. A stable supply chain gives firms the resources and market direction they need to innovate. That said, information gaps and clashing interests within supply chain relationships can trigger contract violations or quality disagreements. When such disputes are not resolved quickly, they can deepen a firm's reliance on a few partners. This creates a form of path dependency where companies feel forced to stick with a small set of partners simply to avoid disputes. As a result, supply chain flexibility suffers, and the efficiency of collaborative innovation declines. The "streamlining and simplification" reform helps improve supply chain relationships on two fronts. First, it speeds up the resolution of contract disputes. When a supplier is late on delivery or a customer fails to pay, firms can defend their rights through faster judicial channels. This reduces the "lock-in effect" in partnerships—companies no longer have to rely heavily on just a few partners just to dodge dispute risks. Second, simpler court procedures lower the bar for small and medium-sized firms to protect their rights. More enterprises can then use legal means to manage supply chain behavior, encouraging a more varied supply chain network. A more diverse supply chain not only lowers the risk of disruption from any single partner but also sparks innovation by bringing together different partners' technical know-how and market insights. This makes innovation efforts more targeted and effective.

Looking at the regression results in Column (3) of Table 7, the coefficient for CSSFirm with respect to supply chain concentration is -0.624 and is significant at the 1% level. This suggests that the "streamlining and simplification" reform substantially lowered firms' supply chain concentration. These findings back up the partnership risk mitigation mechanism. By improving how supply chain disputes are resolved, the reform cuts firms' dependence on a narrow set of partners and encourages a more diversified supply chain network. In turn, that creates a more stable external environment for corporate innovation and helps drive higher innovation output.

Table 7. Results of Firm-Level Mechanism Tests

	(1)	(2)	(3)
	Risk	Rdpersonratio	ChainCT
CSSFirm	-0.141*	0.525*	-0.624***
	(-1.76)	(1.95)	(-2.95)
City control variable	Control	Control	Control
Firm control variables	Control	Control	Control
Firm fixed effects	Control	Control	Control
Province-Year Fixed Effects	Control	Control	Control
Sample Size	15,204	20,330	22,986
Adjusted R^2	0.290	0.700	0.843

6.3 Heterogeneity Analysis

This section examines the heterogeneous effects of the "streamlining and simplification" reform on corporate innovation, analyzing the data from both the urban and corporate characteristics perspectives.

6.3.1 Heterogeneity Across Eastern, Central, and Western Regions

The sample enterprises were divided into three groups—Eastern, Central, and Western—based on the city of their registered location. Table 8 reports the regression results. Looking at coefficient significance, the *CSSFirm* coefficients for firms in Eastern and Central cities are positive at the 5% level, whereas the coefficient for Western cities is not significant. This pattern likely comes from structural gaps in institutional environments, marketization levels, and judicial efficiency across Chinese regions.Eastern and central regions started their economic opening earlier, enjoy stronger legal foundations, and have more professional judicial systems. As a result, they are better positioned to turn the efficiency gains from the "streamlining of complex and simple cases" reform into stable protection and proper incentives for corporate innovation rights, thereby strengthening firms' willingness to invest in R&D. By contrast, western regions face limited market economy development, relatively scarce judicial resources, and weak institutional enforcement. Under these conditions, the positive effects of procedural simplification are easily offset by other institutional weaknesses, so the reform fails to produce a clear marginal increase in corporate innovation behavior.

Further comparison shows that the estimated coefficient for central cities (0.064) is notably higher than that for eastern cities (0.020). This finding can be understood from the angles of policy marginal effects, regional development stages, and resource constraints. In the eastern region, judicial services and market mechanisms were already fairly well developed. The "differentiated case handling" reform was an improvement on an already strong foundation, so the marginal gains from institutional change were relatively small. In contrast, the central region is now going through a "dual catch-up" phase in both its economy and judicial system. Firms there respond more strongly to improvements in judicial efficiency and cuts in litigation costs, so they feel the benefits of the reform more keenly.Moreover, firms in the eastern region can access innovation resources and IP protection through multiple channels, with judicial reform being only one factor. Firms in the central region, however, rely more heavily on local judicial systems and government actions, making the direct effect of judicial reform more pronounced. At the same time, the central region may also enjoy a "synergistic effect" from industrial relocation and policy support, showing greater institutional resilience when judicial reform interacts with corporate innovation.

Table 8. Analysis of Heterogeneity at the City Level

	(1)	(2)	(3)
	Enterprises in Eastern	Enterprises in Central	Enterprises in Western

	Cities	Cities	Cities
CSSFirm	0.020**	0.064**	-0.049
	(2.03)	(2.53)	(-1.62)
City control variable	Control	Control	Control
Enterprise control variables	Control	Control	Control
Firm fixed effects	Control	Control	Control
Province-Year Fixed Effects	Control	Control	Control
Sample Size	11,778	2,319	1,867
Adjusted R^2	0.598	0.653	0.677

6.3.2 Heterogeneity in Factor Intensity

Firms were classified into three groups based on factor intensity: labor-intensive, capital-intensive, and technology-intensive. The regression results are presented in Table 9, columns (1)-(3). The results show that the *CSSFirm* coefficients for labor-intensive and technology-intensive firms are positive at the 5% and 1% significance levels, respectively, while the coefficient for capital-intensive firms is not significant. The positive coefficients for labor-intensive and technology-intensive firms, with the coefficient for technology-intensive firms being greater than that for labor-intensive firms, indicate that the reform has a stronger promotional effect on innovation in technology-intensive firms.

The fact that the coefficient for technology-intensive enterprises is greater than that for labor-intensive enterprises stems primarily from differences in the compatibility of the two types of enterprises' innovation models with the reform.Innovation in technology-intensive enterprises centers on high-investment, high-risk core technology R&D, relying on intellectual property protection and the stability of technology contract fulfillment, and thus demands greater professionalism in judicial procedures and higher efficiency in dispute resolution. The "differentiated handling of complex and simple cases" reform releases judicial resources through "expedited adjudication of simple cases" to achieve "thorough adjudication of complex case", enabling more precise handling of complex technology-related disputes and reducing the risk of interruptions in R&D activities;simultaneously, technology-intensive enterprises are more efficient at converting saved legal costs into R&D investments. In contrast, labor-intensive firms focus their innovative efforts mainly on process optimization and depend on savings from labor management costs. As a result, the reform affects their innovation less strongly than it does technology-intensive firms, leaving a larger coefficient for the former. For capital-intensive firms, the coefficient is not significant. These firms have traditionally relied on large capital inputs—such as equipment upgrades and capacity expansion—to drive innovation. Institutional transaction costs, including litigation expenses, make up only a small share of

their total costs. Hence, the cost savings brought by the reform have only a limited marginal effect on their innovation spending.Moreover, capital-intensive firms have long innovation cycles and depend heavily on capital turnover speed. The efficiency of legal dispute resolution is not a core constraint on their innovation decisions. Given this, the "procedural streamlining" reform struggles to push these firms toward greater innovation investment, which explains the lack of a significant coefficient.

6.3.3 Heterogeneity in Industry Regulatory Attributes

We split firms into regulated and non-regulated groups based on regulatory characteristics. Regression results appear in Table 9, columns (4) and (5). For firms in non-regulated industries, the coefficient is positive and significant at the 1% level. For those in regulated industries, the CSSFirm coefficient is also positive, significant at the 5% level, and larger in magnitude than the non-regulated coefficient.

A possible reason is that regulated industries face heavy administrative oversight, and disputes often involve franchise agreements or compliance matters—issues that are both complex and closely tied to business operations. In the past, lengthy litigation procedures tended to consume innovation resources and reduce firms' willingness to engage in R&D. The "streamlining and differentiation" reform speeds up resolution of straightforward cases while carefully handling complex ones. This approach not only settles routine disputes quickly but also addresses special cases with greater precision. As a result, freed-up resources can be redirected more effectively toward technological innovation.By contrast, disputes in non-regulated industries are mostly ordinary commercial matters. Previously, litigation costs already accounted for a small share of total costs, and constraints on innovation came more from market competition. Therefore, the reform's push for innovation in these sectors is relatively weaker, leading to a larger coefficient for regulated industries.

Table 9. Analysis of Heterogeneity at the Firm Level

	(1) Labor-intensive enterprises	(2) Capital-intensive enterprises	(3) Technology-intensive enterprises	(4) Non-regulated industries	(5) Regulated industries
CSSFirm	0.024**	0.030	0.036***	0.027***	0.042***
	(2.18)	(1.36)	(3.05)	(2.88)	(3.15)
City control variables	Control	Control	Control	Control	Control
Control variables in business	Control	Control	Control	Control	Control
Firm-specific effects	Control	Control	Control	Control	Control
Province-Year	Control	Control	Control	Control	Control

Fixed Effects					
Sample size	6,293	3,225	9,495	14,592	4,645
Adjusted R^2	0.570	0.605	0.580	0.594	0.567

7. Conclusions and Implications

Enhancing corporate innovation capabilities is a crucial strategic pillar for achieving self-reliance and strength in science and technology, strengthening national competitiveness, and building a new development paradigm.However, institutional transaction costs have long constrained enterprises' willingness and ability to invest in innovation; optimizing the legal environment and improving judicial efficiency have thus become crucial institutional tools for overcoming these innovation constraints. Based on this, this paper uses the "differentiated handling of complex and simple cases" reform in civil litigation procedures as a quasi-natural experiment to systematically evaluate the mechanisms through which improved judicial procedural efficiency reduces institutional transaction costs for enterprise innovation, alleviates constraints on innovation investment, and stimulates R&D and technological breakthroughs.The results indicate that the reform has, on the whole, significantly boosted corporate innovation output. Mechanism analysis further reveals that, at the city level, the reform has created favorable institutional conditions for corporate innovation by improving the quality of case adjudication, optimizing the legal environment, and strengthening intellectual property protection; at the firm level, it has effectively alleviated financial and organizational cost constraints in innovation activities by reducing litigation risks, increasing R&D investment, and lowering supply chain concentration, thereby unleashing innovative vitality.

Heterogeneity analysis further indicates that, at the city level, enterprises in the eastern and central regions have significantly benefited from the positive effects of the reform in reducing supply chain concentration, while such effects have not yet become evident in the western region. At the firm level, innovation activities in labor-intensive, capital-intensive, and regulated industries have significantly benefited from the reform, with labor-intensive firms experiencing stronger positive effects than capital-intensive firms; however, technology-intensive and non-regulated industry firms did not exhibit significant impacts. Overall, the improved efficiency of judicial procedures has accelerated the dispute resolution process, reduced the uncertainty associated with rights protection, and prompted enterprises to shift their innovation models from risk-averse to proactive exploration. At the same time, the reform has freed up resources previously allocated to litigation, allowing them to be redirected toward R&D and technology commercialization, thereby optimizing the market-based allocation of innovation factors. By reducing institutional transaction costs and improving the rule of law environment, the reform has laid a solid institutional foundation for building an integrated innovation ecosystem encompassing "R&D—protection—application."

Based on the above research findings, this paper offers the following policy implications:

For policy, the first step is to incorporate the "differentiated case handling" reform into the broader innovation-driven development strategy. What this reform does for corporate innovation shows how much judicial procedure optimization matters for the business environment. It does more than just ease the "too many cases, too few judges" problem—it lowers institutional transaction costs around contract enforcement and strengthens property rights and contractual interests. That is what makes it useful for innovation: technology transactions and industry-academia collaboration all get a firmer institutional foundation. So judicial efficiency should be part of the high-quality economic development strategy, not kept separate. Case processing cycles and IP case closure rates ought to be included in how we assess the business environment. Judicial reform needs to stop being just about internal optimization and start serving the innovation ecosystem directly.

Second, efficiency and quality have to work together, not against each other. In practice, this balance is really about judicial credibility and whether innovation incentives actually take hold. Pushing efficiency too hard begins to eat into procedural justice and innovators' rights. Ignoring efficiency leaves firms stuck in long disputes that drain their innovation budgets. What we need is an evaluation framework that actually weighs procedural legality, proper application of law, and whether the parties involved accept the outcome. That way, "differentiated handling of complex and simple cases" can move faster without dropping quality standards, and firms get a judicial environment they can truly rely on.

Third, reform has to balance universality with precision. "Differentiated case management" should not be one-size-fits-all. Rules need to vary by industry and firm size; otherwise "procedural simplification" quietly turns into "weaker protection." For complex IP disputes in tech-heavy industries, the answer could be specialized IP courts or bringing technical experts into trials to raise the quality of adjudication. For "thorough adjudication of complex cases," we need real supporting mechanisms—cross-regional centralized jurisdiction, expert consultation for supply chain disputes and trade secret cases. That is how you build authority and predictability into judgments.

Fourth, judicial resources should be allocated based on local conditions, not uniform rules. The fact that results differ across regions and industries tells you something: judicial supply has to match innovation demand. Western regions have not seen much reform traction, largely because weak judicial foundations hold back innovation support. Policy should focus first on areas where judicial resources are thinnest and build capacity there. Labor-intensive and heavily regulated industries have gained the most from reform, which suggests we should direct reform resources toward sectors where judicial efficiency actually makes a difference. That is how you get "judicial supply" and "innovation demand" to align, and make reform genuinely effective for innovation-driven development.

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