

ENFORCEMENT PERFORMANCE OF CIVIL AND ECONOMIC DISPUTE CASES IN CHINA: DATA ANALYSIS, CAUSE ATTRIBUTION AND OPTIMIZATION STRATEGIES

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Abstract: A civil judgment only creates value when it is enforced. This paper measures the enforcement performance of civil and economic dispute cases in China and explains the gap that remains after ten years of reform. We build an indicator panel from official releases of the Supreme People's Court for 2023 to 2025 and from a provincial report on terminated private lending cases. Three national indicators are tracked. The voluntary performance rate rose from 51.79 percent to 61.01 percent. The enforcement realisation rate moved from 46.19 percent to 50.59 percent while the caseload grew by 15.43 percent. The enforcement completion rate stayed close to 39 percent, so about six of every ten enforcement cases still close without full payment. We decompose the residual gap into twelve factors on three layers and rank them with an entropy weighted assessment matrix. Real loss of solvency, digital and nominee asset concealment, and a weak credit base receive the highest scores. We then propose a four module optimization framework that couples graph based asset discovery, preservation oriented procedure design, cross-region enforcement with transfer to bankruptcy, and graded credit sanction. A scenario analysis indicates that a twenty point rise in preservation coverage could raise the realisation rate by three to seven points. The results give courts a measurable and ordered agenda instead of a general call for stronger coercion.

Keywords: Judicial enforcement; Judicial big data; Entropy weight method; Case termination; Social credit; Graph analytics

1 INTRODUCTION

A judgment is only a promise on paper until it is enforced. In China the enforcement of civil and economic judgments is often called the last mile of justice. The scale of that last mile is now very large. National courts accepted 37.486 million adjudication and enforcement cases in 2025 [1]. First instance enforcement cases of the civil and economic type reached 10.902 million, which was 15.43 percent more than one year earlier [2]. Courts recovered about 2.2 trillion CNY for creditors in the same year, and this was the third year above the level of 2 trillion CNY [2]. The intake of enforcement cases was 6.149 million in 2016, so the workload has nearly doubled in a decade [3].

Reform has produced clear gains. The enforcement completion rate rose from 28.79 percent in 2016 to 39.29 percent in 2025 [3]. Cross-region enforcement, the coordination of filing, trial and enforcement, and the transfer of hopeless cases into bankruptcy have all moved from pilot to national practice [2]. The remaining gap is still wide. About six of every ten enforcement cases do not close with full payment. A creditor who wins a small private loan case still faces a high risk of receiving nothing. Contract enforcement is also a standard measure of business environment quality in international assessments [4], so the gap has a cost well beyond the individual case.

Most existing work on this problem is doctrinal. Scholars describe the legal rules and argue for new rules. Fewer studies treat enforcement as a measurement problem with a defined indicator system. Enforcement is in fact a data intensive process. A court must find a person, find property, value that property, and convert it into money. Each of those steps generates records, and each step can be measured. A data view makes it possible to say which obstacle costs the most and which remedy should come first.

This paper makes four contributions. First, it assembles a consistent national indicator panel for 2023 to 2025 and a regional structural panel for terminated private lending cases. Second, it defines a twelve factor cause set on three layers and scores the factors with an entropy weighted matrix, so the ranking does not depend on a single subjective weight. Third, it proposes a four module optimization framework in which each module is linked to the factors it targets. Fourth, it reports a scenario analysis that estimates how much the realisation rate could move under a realistic change in preservation coverage.

The rest of the paper is organised as follows. Section II reviews related work. Section III describes the data and the method. Section IV reports the results. Section V presents the optimization framework. Section VI discusses the findings and their limits. Section VII concludes.

2 RELATED WORK

2.1 Studies on Enforcement Difficulty

The difficulty of enforcing civil judgments in China is not new. Clarke showed three decades ago that the problem is institutional rather than technical, because courts depend on local government for staff and money [5]. Later work focuses on the judgment defaulter blacklist. Ding argues that the blacklist combines moral condemnation with joint sanctions in order to compensate for a weak formal enforcement system, and warns that the joint sanction mechanism raises questions of due process [6]. A separate line of work studies personal bankruptcy. Xie analyses the Shenzhen regulation of 2021 and notes that a discharge procedure can absorb cases that no enforcement effort can ever satisfy [7]. These studies explain mechanisms well. They rarely quantify the relative weight of the causes they describe.

2.2 Judicial Informatization and Judicial Big Data

Chinese courts have built one of the largest judicial data infrastructures in the world. Zheng describes the smart court programme as a state led project that serves both efficiency and hierarchical control [8]. Zuo reviews the growth of judicial big data research and points out that public platforms now expose trial, enforcement and document data at national scale [9]. Recent applied work uses these data for network analysis of legal citations and for case classification [10]. Enforcement data receive less attention than trial data, although the enforcement stage is where most value is won or lost.

2.3 Data Mining for Asset and Default Risk

Asset concealment is close in structure to financial fraud. Akoglu and co-authors survey graph based anomaly detection and show that relational structure often reveals what attribute data hide [11]. Pourhabibi and co-authors review graph based fraud detection and report strong results in money laundering and account risk [12]. Graph neural networks give a general way to learn on such structures [13,14], and gradient boosted trees remain a strong baseline for tabular default prediction [15]. These methods are mature in banking. Their transfer into court asset investigation is still limited, mainly because the data sit in separate public systems.

2.4 Research Gap

Two gaps remain. There is no compact indicator system that connects national enforcement statistics with case level obstacles. There is also no ordered mapping from causes to remedies, so policy discussion tends to list every possible measure with equal emphasis. This paper addresses both gaps.

3 DATA AND METHOD

3.1 Data Sources

The national panel comes from official releases of the Supreme People's Court for the years 2023 to 2025 [1-3,16]. These releases report the three core enforcement indicators, the intake of enforcement cases, the total amount recovered, and the output of the main institutional mechanisms. The regional panel comes from a 2025 special report of the Beijing High People's Court on terminated private lending cases, together with a district court survey of the same case group [17]. The regional panel is used for structure, not for national estimation. All figures are public aggregate statistics, so no personal data are involved.

3.2 Indicator Definitions

Four indicators are used. The voluntary performance rate (VPR) is the share of effective civil judgments that the losing party performs without compulsory enforcement. The enforcement realisation rate (ERR) is the ratio of the amount actually recovered to the amount due in concluded enforcement cases. The enforcement completion rate (ECR) is the share of concluded enforcement cases that close with full payment. The termination rate (TER) is the share of cases closed through termination of the current enforcement procedure. A terminated case is not dismissed. It can be restored when new property is found, so TER measures suspended claims rather than lost claims. The rule basis is the Civil Procedure Law and the judicial interpretation on termination of the current enforcement procedure [18,19].

3.3 Factor Set

We define twelve causal factors on three layers. Surface factors describe what blocks a specific enforcement action. Structural factors describe how the court system and its partner agencies are organised. Deep factors describe the economic and social conditions in which enforcement takes place. It was built by coding the obstacles reported in the source documents and merging items that describe the same mechanism.

3.4 Entropy Weighted Assessment

Each factor is scored on three criteria with a nine point scale. Criterion K1 is incidence, which is how often the factor appears in blocked cases. Criterion K2 is impact, which is the share of unrecovered value the factor explains. Criterion

K3 is resistance, which is how poorly the factor responds to current tools. Scores are assigned from the documentary evidence in the sources above.

Let x be the score of factor i on criterion j . The scores are first normalised and then converted into a probability matrix.

$$p(i,j) = r(i,j) / \sum r(i,j), \quad r(i,j) = (x(i,j) - \min) / (\max - \min) \quad (1)$$

The entropy of a criterion and its weight follow the standard Shannon formulation [20,21].

$$e(j) = -k \sum p(i,j) \ln p(i,j), \quad k = 1 / \ln m \quad (2)$$

$$w(j) = (1 - e(j)) / \sum (1 - e(j)) \quad (3)$$

A criterion on which the factors differ widely carries more information, so it receives a larger weight. The composite score of a factor is the weighted sum of its normalised criterion values, rescaled so that the top factor equals 100. This design keeps the ranking stable when a single expert score changes by one point. The approach is close in spirit to standard multiple attribute decision methods [22,23].

3.5 Scenario Model

For the policy discussion we use a simple transmission model. Let P be the share of high risk cases in which the creditor obtains property preservation before judgment. Let α be the share of an increase in P that converts into recovered value. The expected change in the realisation rate is then $\Delta \text{ERR} = \alpha \cdot \Delta P$. We test α at 0.15, 0.25 and 0.35. The lower value reflects the fact that many debtors have no property to preserve at any stage.

4 RESULTS

4.1 National Indicator Trend

Table 1 and Fig. 1 report the national panel. The voluntary performance rate rose in every year and gained 9.22 points over three years. This is the strongest single result in the panel. It means that more losing parties now pay before a court applies force. The realisation rate and the completion rate improved over the same period, but both fell slightly in 2025. The 2025 dip should be read together with the caseload. Enforcement intake grew by 15.43 percent in that year [2]. New cases enter the denominator before they can be resolved, so a fast growing caseload dilutes both ratios. The system handled far more work and still kept the realisation rate above 50 percent. The underlying capacity therefore improved even though two ratios moved down. A capacity measure that adjusts for intake would report this more clearly than a raw ratio.

Table 1 Core National Enforcement Indicators, 2023 to 2025

Indicator	2023	2024	2025	Δ
VPR (%)	51.79	57.99	61.01	+9.22
ERR (%)	46.19	54.29	50.59	+4.40
ECR (%)	35.00	40.13	39.29	+4.29
Intake (10^6)	n.a.	9.44*	10.90	+15.4%
Recovered (10^{12} CNY)	>2.0	>2.0	2.20	stable

*Derived from the reported 15.43 percent growth of 2025 intake. Source: [1-3], [16].

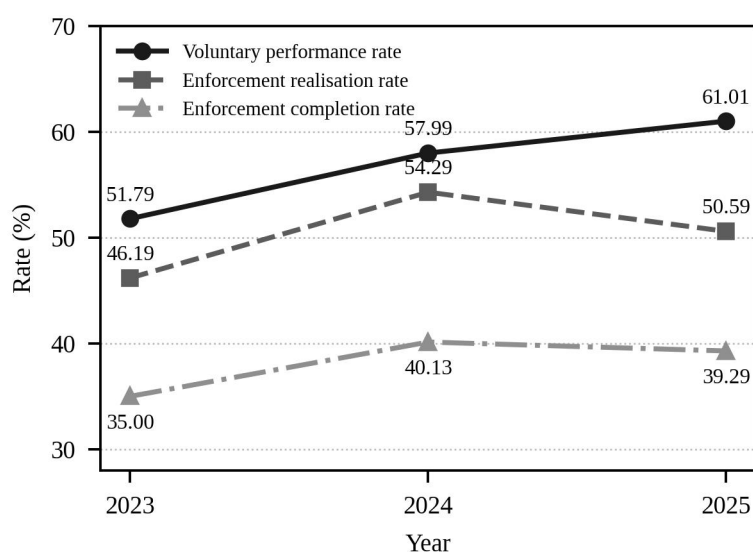


Figure 1 National Enforcement Indicators, 2023 to 2025

4.2 Caseload Pressure and Mechanism Output

Fig. 2 places the current position in a longer frame. Enforcement intake rose from 6.149 million cases in 2016 to 10.902 million in 2025, and the completion rate rose by 10.5 points over the same period [2,3]. The system therefore improved quality while absorbing a much larger volume.

The right panel shows the output of the main institutional mechanisms. Cross-region enforcement handled 477 thousand cases between October 2023 and December 2025, produced substantial progress in 222.5 thousand difficult or long pending cases, and recovered 166.882 billion CNY [2]. Courts also moved 9.6382 million cases out of the terminated state, transferred 48.4 thousand cases into bankruptcy, and cleared 15.8 thousand insolvent firms [2]. Preservation enforcement reached 5.837 million cases in 2025 [16]. The number of listed defaulters fell by 5.2 percent in 2025 after its first decline in 2024 [1]. These outputs show that the structural layer of the problem is the layer that responds most quickly to policy.

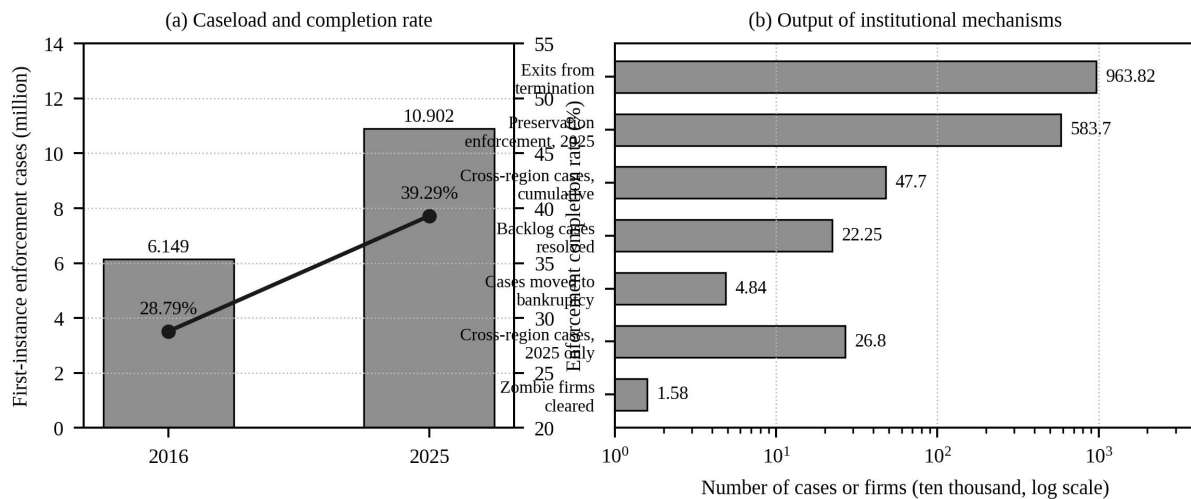


Figure 2 Long Run Caseload and Completion Rate (a), and Output of the Main Institutional Mechanisms (b). The Right Panel Uses a Logarithmic Scale

4.3 Structural Differences Below the National Average

National averages hide a sharp internal gradient. In the private lending segment the national realisation rate was only 34.5 percent, and the termination rate for private lending cases in Beijing reached 41.2 percent [17]. Table 2 and Fig. 3 report the structure of those terminated cases.

Table 2 Structure of Terminated Private Lending Cases in Beijing

Tier	Claim size	Share	Dominant obstacle
T1	< 0.1 M CNY	32.7%	Debtor untraceable, no registered property
T2	0.1 to 1 M CNY	44.6%	Value held as stock, receivables or nominee deposits
T3	> 1 M CNY	22.7%	Assets outside the city in 80.1% of cases

Source: [17].

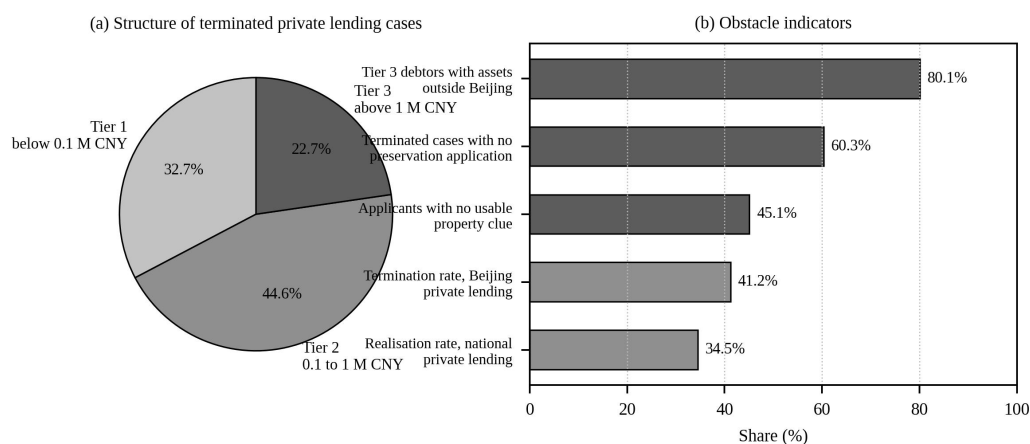


Figure 3 Composition of Terminated Private Lending Cases in Beijing (a) and the Main Obstacle Indicators (b)

Each tier fails for a different reason. Tier one fails because the person cannot be found. Tier two fails because the value exists but sits in forms that the online control system does not read. Tier three fails because the asset is in another province and the local process is slow. A single national remedy cannot fix three different failures.

Two upstream indicators explain much of this. In 60.3 percent of terminated cases the creditor never applied for property preservation during the trial, which left the debtor a long window to move assets. In 45.1 percent of cases the creditor could supply no property clue beyond the identity of the debtor [17]. The failure therefore begins before the enforcement file is opened.

4.4 Factor Ranking

Table 3 lists the twelve factors. Table 4 reports the criterion scores, the composite score and the rank. The entropy weights are 0.235 for incidence, 0.373 for impact and 0.392 for resistance. Resistance carries the largest weight because the factors differ most on that criterion.

Table 3 Three Layer Factor Set

Layer	Code	Factor
Surface	S1	Asset concealment in digital, nominee and offshore forms
	S2	Static point to point property control system
	S3	Abuse of objection and review procedures to gain time
	S4	Debtor absconds and holds no registered property
Structural	L1	Information gap between trial and enforcement, low preservation use
	L2	Joint credit sanction linked on paper but not in action
	L3	Distorted use of termination under closure rate assessment
	L4	Weak verification of claims against third parties
Deep	D1	Weak credit base and misuse of limited liability
	D2	Real loss of solvency caused by the business cycle
	D3	Local protection and selective enforcement
	D4	Imbalance of power and responsibility for enforcement judges

Table 4 Criterion Scores, Composite Scores and Ranking

Code	K1	K2	K3	S	Rank
D2	8	9	9	100.00	1
S1	8	8	8	81.07	2
D1	7	7	9	75.71	3
S4	7	8	8	75.25	4
S2	8	7	6	52.45	5
L1	8	8	5	51.98	6
D3	4	6	8	39.32	7
L3	7	7	5	36.93	8
D4	5	6	7	35.45	9
L2	6	6	6	31.57	10
L4	5	5	7	26.21	11
S3	6	5	6	22.34	12

Entropy weights: $K1 = 0.235$, $K2 = 0.373$, $K3 = 0.392$.

Three results stand out. The top of the ranking is dominated by the deep layer and by the hardest surface factors. Real loss of solvency (D2) scores highest, which means a large part of the gap is not misconduct at all. Asset concealment in new digital and nominee forms (S1) is second, and it is the factor most open to a technical answer. The mean layer scores are 62.6 for the deep layer, 57.8 for the surface layer and 36.7 for the structural layer. The structural layer scores lowest, which is consistent with the strong recent output of cross-region enforcement and of the coordination mechanisms. Policy has already reached the most tractable layer. Further gains must come from the other two.

5 Optimization Framework

Fig. 4 presents the proposed framework. It has four modules, and each module is aimed at a defined subset of factors. Table 5 records the mapping.

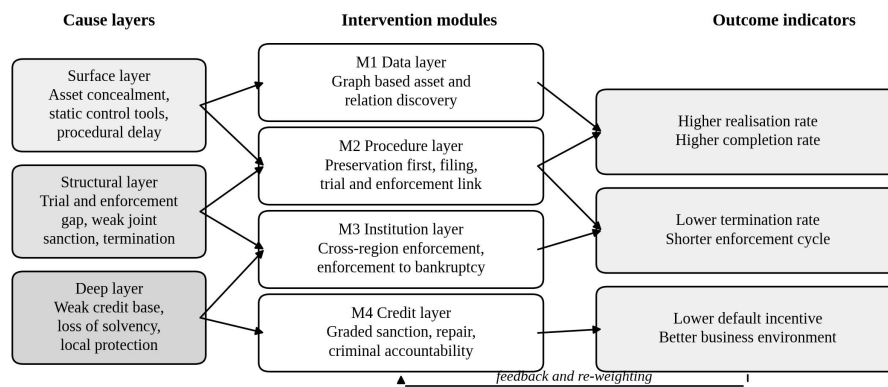


Figure 4 Proposed Framework Linking Cause Layers, Intervention Modules and Outcome Indicators

5.1 Module M1: Graph Based Asset Discovery

The current control system queries registers under the name of the debtor. It therefore misses value held through relatives, employees, shell companies and offshore vehicles. A graph model treats persons, firms, accounts, devices and addresses as nodes and treats transfers, shareholdings and shared contact data as edges. Suspicious control can then be inferred from structure rather than from ownership records alone. Methods from graph based fraud detection transfer directly to this task [11,12], and graph neural networks can score candidate links at scale [13,14]. Two safeguards are essential. Every inference should be a lead for a human investigator, not a finding. Access should be logged and limited to an open enforcement file.

5.2 Module M2: Preservation Oriented Procedure Design

The single most avoidable loss occurs before enforcement begins. Preservation was not applied for in 60.3 percent of terminated cases [17]. Three changes would raise that coverage. Courts can issue a standard risk notice at filing that explains preservation in plain language. The cost of a preservation bond can be lowered through insurance products for small claims. Trial judges can record an enforceability check in the judgment, so that the operative part states amounts and obligations in a form that an enforcement officer can apply at once. National practice already moves in this direction, since preservation enforcement reached 5.837 million cases in 2025 [16].

5.3 Module M3: Cross-Region Enforcement and Transfer to Bankruptcy

Cross-region enforcement moves a case to a court outside the local environment of the debtor. It is the direct answer to local protection (D3) and to the out of province asset problem of tier three cases. Its recorded output supports this design [2]. Transfer to bankruptcy answers a different factor. When a debtor has truly lost solvency (D2), further coercion produces nothing. A collective procedure distributes what remains, closes the file and allows an honest debtor to return to economic life. The Shenzhen personal bankruptcy experience shows both the promise and the narrow scope of current pilots [7]. A national personal insolvency rule would convert a permanent backlog into a finite process.

5.4 Module M4: Graded Credit Sanction and Repair

The defaulter list and the consumption restriction rules are powerful, and that power creates risk [24]. Ding shows that undifferentiated joint sanctions raise serious questions of proportionality [6]. A graded design answers both concerns. Sanctions should scale with the evidence of capacity and refusal, not with the size of the debt alone. A debtor who cooperates and discloses assets should face lighter restrictions. A clear repair path should remove the record once obligations end. In parallel, criminal liability for refusal to enforce needs a uniform filing standard across police, prosecution and courts, because an unpredictable standard removes the deterrent effect.

5.5 Implementation Path and Data Governance

The four modules do not need to arrive together. A staged path fits the ranking. In the first stage courts can raise preservation coverage, because this needs no new technology and it targets the clearest upstream leverage point. In the second stage the graph platform can be piloted in one province on a defined case type, such as private lending above one hundred thousand CNY. Evaluation should compare the pilot group with a matched control group rather than with the previous year, since caseload growth alone can move the ratios. In the third stage the credit rules and the insolvency rules can be revised on the evidence produced by the first two stages. Data governance runs through all three stages. The platform would join tax, banking, registry and telecom records, so the legal basis of each source should be stated in advance. Retention periods should be fixed. Every query should be tied to a case number and to the identity of the officer who made it.

Table 5 Mapping of Modules to Factors

Module	Target factors	Primary expected effect
M1	S1, S2, S4, L4	Wider asset coverage, fewer blind terminations
M2	L1, S3	Earlier control of assets, less transfer during trial
M3	L3, D2, D3	Neutral venue and an exit route for insolvent debtors
M4	D1, L2, D4	Higher cost of default and a credible repair path

6 DISCUSSION

6.1 Scenario Analysis

Preservation coverage is the most controllable variable in the panel. Suppose coverage in high risk cases rises by twenty points, which would move the share of terminated cases without preservation from about 60 percent to about 40 percent. Under the transmission model of Section III the realisation rate would gain 3.0 points at α equal to 0.15, 5.0 points at 0.25 and 7.0 points at 0.35. Even the low estimate is larger than the total three year gain observed in the realisation rate. This supports moving effort upstream into the trial stage.

6.2 Interpretation

The ranking carries a policy message that is easy to miss. The highest scoring factor is real insolvency, and no enforcement technique can create value that does not exist. Treating that share of cases as a failure of the courts distorts both assessment and behaviour, since it encourages the distorted use of termination that appears as factor L3. A separate statistical category for enforcement impossibility would improve measurement and reduce that pressure. The second message is that technology should be aimed at S1 and S4, where the obstacle is genuinely informational. The third message is that credit sanctions should become more precise rather than more severe. Precision protects the credibility of the sanction, and credibility is what makes voluntary performance rise.

6.3 Limitations

Three limits apply. The criterion scores are expert assignments drawn from documentary evidence, so the ranking is a structured judgment rather than an estimate from case level data. The regional panel covers one city and one case type, so the tier structure may not generalise. The transmission coefficient in the scenario model is assumed rather than estimated. Future work should replicate the analysis on case level enforcement records and should estimate the coefficient with a matched design. A grey relational design would also help to test how stable the ranking is under different score assignments [25].

7 CONCLUSION

This paper measured the enforcement performance of civil and economic dispute cases in China and explained the gap that remains. The voluntary performance rate reached 61.01 percent in 2025, while the completion rate stayed near 39 percent under a caseload that grew by 15.43 percent. A twelve factor entropy weighted assessment placed real insolvency, digital asset concealment and a weak credit base at the top of the ranking, and placed the structural factors last. We proposed a four module framework that assigns each module to the factors it can actually move. The wider lesson is simple. The enforcement gap is the echo of market credit risk inside the judicial system, so it cannot be closed by coercion alone. It needs better data, earlier procedure, a working exit through insolvency, and a credit regime that is precise enough to be fair.

COMPETING INTERESTS

The authors have no relevant financial or non-financial interests to disclose.

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