

# An Analysis of Liability Determination Frameworks: A Comprehensive Review and Model

Xinyi Zhang

School of Law and Humanities, Zhejiang Sci-Tech University, Zhejiang, China

srpjue886765@outlook.com

**Abstract.** Under the framework of a comprehensive registration system, imbalances in the attribution of securities intermediary liability have become increasingly evident. This study addresses the civil liability determination of intermediaries in cases of false securities statements, focusing on the implementation of proportional joint liability and the development of a quantitative calculation model. Current judicial practice faces several challenges such as interpretative difficulties, inconsistent rulings, misalignment between liability and fault, and confusion regarding liability forms—significantly hindering the realization of the principle of “responsibility proportionate to fault”. To systematically resolve these issues, the study proposes legislative amendments to introduce specialized securities liability provisions and judicial interpretations to establish the legal status of proportional joint liability. Additionally, an innovative “three-dimensional dynamic liability calculation model” is developed. Validated through cases such as Kangmei Pharmaceutical, Jinya Technology, and Baqianli, the model generally aligns well with judicial rulings, demonstrating strong applicability. However, issues such as insufficient industry benchmark differentiation, the rationality of adjustment parameters, and liability form identification remain. Future efforts should focus on refining industry benchmarks, setting adjustment limits, and embedding judicial reasoning, while promoting legislative and interpretive improvements to establish a comprehensive responsibility attribution mechanism.

**Keywords:** Misrepresentation on Securities Market, Proportional Joint and Several Liability, Securities Service Institutions.

## 1. Introduction

With the comprehensive implementation of the registration-based IPO system in China, the role of securities intermediaries in the issuance and trading of securities has become increasingly prominent. Strengthening information disclosure oversight and ensuring the due diligence of service providers through reasonable means has been a focal point of legislative efforts. Article 163 of the Securities Law stipulates that intermediaries bear joint and several liability to investors alongside the issuer, who bears primary responsibility. However, in many cases, intermediaries are merely negligent. The “one-size-fits-all” approach of imposing full joint and several liability on intermediaries is not only ineffective in compelling them to diligently fulfill their “gatekeeper” duties but may also lead to the generalization of their responsibility, causing them to bear liability far exceeding their culpability. When issuers are unable to compensate due to bankruptcy or debt evasion (as exemplified by the aftermath of Kangmei Pharmaceutical's bankruptcy, where Zhengzhong Zhujiang Accounting Firm was pursued for 2.459 billion RMB), stronger intermediaries are forced to become the “deep pockets” for investor compensation. Even if their fault is merely professional negligence (such as failing to detect fictitious deposits), they must underwrite the issuer's overall fraud. This distorted logic, where solvency substitutes for the degree of fault, results in intermediaries receiving millions in service fees while bearing billions in compensation liability. Ultimately, they become “scapegoats” for the initiators of securities misrepresentation or “backstops” for investors' risk of recovery [1]. Therefore, current judicial practice places particular emphasis on the application of the principle of “proportional responsibility” to resolve the issue of fair allocation of liability among intermediaries.

To strengthen the rationality of accountability principles, the Supreme People's Court's newly released Judicial Interpretation on False Statements (2022) in Article 13 explicitly distinguishes the faults stipulated in the Securities Law: intentional creation of false documents or knowingly failing

to correct falsehoods versus negligence constituting a severe breach of duty resulting in misrepresentation. Simultaneously, following the “Zhonganke Case,” courts have attempted to introduce proportional joint and several liability to solve the difficult problem of reasonable responsibility apportionment for intermediaries. Proportional joint and several liability to a large extent achieves a positive response to the principle of proportionality, but has also triggered new controversies. The legal coordination dilemma of proportional joint and several liability, and the problems of how to scientifically quantify the proportion of liability in judicial practice, have become the focus of debate in both legal theory and practice.

The purpose of this article is to explore the application issues of proportional joint liability of intermediaries in securities false statement cases, as well as the implementation of legislation and quantitative methods.

## **2. Foundations of Liability Determination**

While proportional joint and several liability offers the possibility of reasonably determining the civil liability of securities service institutions, it alters the original intention of joint and several liability to protect creditors, triggering significant controversy in both theoretical and practical circles [2]. The author selects two representative points of contention for discussion.

### **2.1. The Interpretive Challenge of Proportional Joint and Several Liability: Compatibility Issues with Current Law**

The direct legal basis for proportional liability is lacking. Neither Article 163 of the current Securities Law nor the Civil Code explicitly stipulates proportional joint and several liability. Under the principle of statutory joint and several liability, it is impossible to directly derive a conclusion of proportional joint and several liability from the Securities Law and the Civil Code. Therefore, the application of proportional joint and several liability requires seeking alternative paths for legal interpretation. However, the proportional liability system created by the New Judicial Interpretation has a dual conflict with the joint and several liability prescribed in Article 85 of the Securities Law and Article 178 of the Civil Code: Firstly, in terms of legal effect, the judicial interpretation allows some liable parties to bear only a limited amount of liability, rendering hollow the creditor's right to full compensation granted by the Civil Code; Secondly, in terms of systematic interpretation, the Civil Code has already listed almost all forms of multiple-person liability, and proportional liability lacks legislative space.

### **2.2. The Quantitative Dilemma of Specific Application Conflicts in Judicial Practice**

The author searched the Weike-Xianxing legal information database, with the case cause "securities false statement liability dispute," adding the keyword "intermediary," and the document type "judgment," retrieving a total of 3555 securities false statement damage compensation judgments in which intermediary institutions were defendants. The author combined the above judgments and public information to organize the findings. The specific information is detailed in Table 1:

The data presented in Table 1 reveals three key deficiencies in the application of proportional joint and several liability:

First, there is a lack of balance in adjudication standards. In the Wuyang Bond Case, the court, in order to demonstrate a strict zero-tolerance attitude towards illegal and non-compliant activities in the securities market, did not distinguish the subjective state of fault of the accounting firm and directly sentenced the accounting firm to bear full joint and several liability [3]. However, in the LeTV Case, the accounting firm was also involved in false financial reporting, but was sentenced to bear only 1% proportional joint and several liability. Although its fault may indeed have been less severe, compared to the full joint and several liability in the Wuyang Bond Case, the degree of punishment differed greatly, lacking convincing differentiating criteria [4]. When determining the proportion of liability, courts may excessively focus on the policy objectives of individual cases (such

as "protecting investors"), while neglecting the importance of maintaining consistency and stability in the application of the law across different cases, undermining the authority and credibility of the law.

**Table 1.** Statistical Table of Civil Liability Judgment Outcomes for Intermediary Institutions in Securities False Statement Cases

| Case                        | Case numbe                          | Proportion of liability assumed by securities companies | Proportion of liability assumed by law firms | Proportion of liability assumed by accounting firms | The proportion of liability borne by other intermediaries |
|-----------------------------|-------------------------------------|---------------------------------------------------------|----------------------------------------------|-----------------------------------------------------|-----------------------------------------------------------|
| ZhongAnKe Case              | Case No. (2019) Hu 74 Minchu 1049   | 25%                                                     |                                              | 15%                                                 |                                                           |
|                             | Case No. (2020) Hu Minzhong 666     |                                                         |                                              |                                                     |                                                           |
| Wuyang Bond Case            | Case No. (2021) Zhe Minzhong 389    | 100%                                                    | 5%                                           | 100%                                                | 10% (credit rating agency)                                |
| Yabo Technology case        | Case No. (2021) Lu                  | 20%                                                     |                                              | 30%                                                 |                                                           |
| Kangmei Pharmaceutical Case | Case No. (2020) Yue 01 Minchu 2171  |                                                         |                                              | 100%                                                |                                                           |
| Baoqianli Case              | Case No. (2020) Yue Minzhong 1744   | 10% Supplementary liability                             |                                              | 15% Supplementary liability                         | 30% Supplementary liability (Asset appraisal agency)      |
| Anzhong Stock Case          | Case No. (2021) Liao Minzhong 466   | 100%                                                    |                                              |                                                     |                                                           |
| Huaze Cobalt & Nickel Case  | Case No. (2020) Chuan Minzhong 293  | 100%                                                    |                                              | 100%                                                |                                                           |
| Hongrun Company' case       | Case No. (2020) Lu Minzhong 2712    | 100%                                                    | 0%                                           |                                                     |                                                           |
| Jinya Technology Case       | Case No. (2020) Chuan Minzhong 1382 |                                                         | 100%                                         |                                                     |                                                           |
| Da Zhi Hui Case             | Case No. (2018) Hu 74 Minchu 432    |                                                         |                                              | 100%                                                |                                                           |
| Meijite Lantern City Case   | Case No. (2020) Hu 74 Minchu 801    | 100%                                                    | 10%                                          |                                                     | 10% (credit rating agency)                                |
| LeTV Case                   | Case No. (2021) Jing 74 Minchu 111  | 10%                                                     |                                              | 1%                                                  |                                                           |

Second, the allocation of responsibility is divorced from factors of causation. In the Anzhong Stock Case, the proportion of fictitious revenue was 1.73 times that of the Zhonganke Case, but the proportion of liability was four times higher [5, 6]. While the severity of the illegal conduct increased by less than onefold, the legal responsibility increased severalfold. This disproportionate judgment lacks a clear calculation basis, clearly violating the basic principle of "proportionality of responsibility," making the judgment result arbitrary and uncertain.

Third, there is confusion in confirming the form of liability. The Baoqianli Case characterized proportional liability as "supplementary compensation liability" (the intermediary institution is responsible for 10%-30% and is premised on the principal debtor's inability to pay), which contrasts with the Kangmei Pharmaceutical Case, where the accounting firm was directly sentenced to 100% joint and several liability [7, 8]. This confusion in characterization stems from legislative ambiguity. The law stipulates "joint and several liability" but does not clearly define the specific legal attributes of this innovative form of "proportional joint and several liability." This has led some courts to understand it as a "limited joint and several liability" (directly but proportionally borne), while others understand it as "supplementary several liability." This fundamental divergence has caused serious inconsistencies in the application of the law, directly affecting investors' rights to claim compensation and the expectations of intermediary institutions.

The essence of the above three dilemmas lies in the lack of a judicial quantification methodology and legislative inadequacy. Therefore, only by focusing on solving these two fundamental problems can the development of proportional joint and several liability break through to a new realm.

### 3. Legislative Implementation of Proportional Joint and Several Liability

Properly calibrating intermediary civil liability is critical for its institutional effectiveness. However, focusing solely on liability establishment fails to address the scope of responsibility relative to fault, leading to over- or under-deterrence. The practical application of the principle of proportional joint and several liability faces both an insufficient legal basis and unclear standards [9].

The long-standing critique of proportional joint and several liability's lack of general legal norms can be addressed on two levels. First, at the legal norm level, amend Article 163 of the Securities Law to include a proviso stipulating responsibility based on “degree of fault and causation.” Simultaneously, add special securities provisions under the joint and several liability framework of Article 178 of the Civil Code to establish proportional liability. This could reference Article 7 of the Interpretation on Disputes over Liability for Ecological and Environmental Tort, which addresses attribution logic for separate or partially joint torts causing the same damage—where some tortfeasors' actions suffice for all damage, and others only for partial damage, the injured party may require the former to be responsible for all damage and share joint and several liability with others for the jointly caused damage. Second, at the judicial interpretation level, develop specific guidelines for applying proportional joint and several liability, clarifying its status as an independent form of responsibility distinct from traditional joint and several liability.

### 4. Constructing Scientifically Quantifiable Rules

#### 4.1. Legal Codification of Classifications

The degree of fault influences the extent of civil liability and is a key criterion for distinguishing between full joint and several liability and proportional joint and several liability. Intentional misconduct, characterized by greater subjective malice, requires full joint liability in accordance with Article 1168 of the Civil Code. Conversely, gross negligence and ordinary negligence are subject to proportional joint liability, with specific apportionment determined based on the factual circumstances. Therefore, clarifying the subjective fault status of the intermediary agency is essential prior to liability allocation to achieve an appropriate punitive and compensatory balance.

#### 4.2. Overall Framework of the Proportional Joint-and-Severall Liability Calculation Model

Enrique Cáceres Nieto's “legal constructivism” posits that positive law and legal theory actively participate in the construction of social reality through interactions with agents within institutions created by the law and with civil society [10]. This perspective implies that law can itself be understood as a model that structures social order by setting rules, defining relationships, and allocating responsibilities. Within the context of proportional joint-and-several liability, this suggests that the liability-allocation mechanism is a model: its scoring outcomes are intended to assess multiple parties' culpability, and the resulting scores directly shape the proportional allocation of joint-and-several liability among the parties.

U.S. law provides an instructive example. Section 21D (f) (3) of the Securities Exchange Act of 1934 directs courts to determine each defendant's and non-defendant's percentage of responsibility by evaluating the total fault of all persons who caused or contributed to the plaintiff's loss. In doing so, courts must consider the nature of the wrongful conduct and the nature and extent of the causal relationship between the conduct and the loss [11]. The design of the scoring model below also draws on Restatement principles: when allocating percentages of responsibility among parties whose legal liability has been established, factors to consider include (a) the nature of the party's risk-creating conduct, including any awareness, disregard, or intent regarding the risk or resulting harm, and (b) the strength of the causal relationship between the party's conduct and the injury.

Synthesizing these legal authorities, the determinants of proportional liability can be summarized as three quantifiable elements: the degree to which risk was created (hazardousness of conduct), subjective culpability (degree of fault), and causal strength (contribution to causation).

First, Hazardousness of Conduct. In tort law, the core inquiry when assessing negligence is whether the actor breached the standard of care that a reasonably prudent person would exercise under similar circumstances [12]. The scope and content of that duty of care are closely tied to the risk posed by the conduct. The Restatement (Third): General Principles explains that determining whether a duty of care exists, and its scope, requires consideration of foreseeable risk and the reasonableness of imposing precautionary burdens. Conduct that is highly dangerous imposes a correspondingly higher duty to take precautions. For example, in the domain of automated vehicle operation, autonomous driving presents elevated hazards, which heighten the importance of rigorous safety considerations for vehicle systems [13].

Second, Subjective Culpability. Subjective culpability is the principal dimension for assessing the actor's mental state and degree of fault. Its legal foundation derives from tort doctrines distinguishing negligence and intention. Negligence is typically defined as a failure to exercise reasonable care; evaluating the degree of negligence often involves examining whether the actor subjectively perceived the risk or, given the actor's knowledge and experience, should have perceived it. The Restatement's approach to negligence incorporates not only objective conduct but also implications about the actor's subjective state. Intentional torts (e.g., battery, false imprisonment) require a mental state of intent to cause a specific outcome or knowledge that the outcome was substantially certain—thus representing the highest degree of culpability. Civil-law systems (e.g., Germany, France) further refine fault classifications—distinguishing *Vorsatz* (intent) from *Fahrlässigkeit* (negligence), and subdividing negligence into gross (*grobe Fahrlässigkeit*) and ordinary (*einfache Fahrlässigkeit*) categories—which correspond to different levels of subjective blameworthiness [14]. English law similarly differentiates intentional wrongdoing from negligence and may take subjective moral blame into account in awards such as punitive damages [15].

As a scoring dimension, subjective culpability can be quantified according to the actor's mental state and the degree of deviation from applicable standards. Intentional conduct receives the highest score; gross negligence or conscious disregard for known risks receives a high but lower score; ordinary or slight negligence receives proportionally lower scores. This gradation ensures that allocation reflects the actor's moral fault and deserved censure.

Third, Causal Strength (Causal Contribution). Causal strength measures the degree of association between the actor's conduct and the harm. Its legal basis lies in doctrines of “but-for” causation and proximate/legal causation. In U.S. tort law and the Restatements, fact causation is commonly tested by asking whether the harm would have occurred “but for” the defendant's conduct, whereas legal causation addresses whether the harm was a foreseeable consequence of that conduct and whether any intervening causes broke the causal chain. In multi-defendant cases, the Restatement (Third): Apportionment of Liability emphasizes assessing each tortfeasor's “causal contribution.” When multiple acts jointly produce harm, it is necessary to evaluate the relative importance or influence of each act on the resulting injury.

These three elements—hazardousness of conduct, subjective culpability, and causal strength—jointly inform proportional allocations of joint-and-several liability and are widely recognized across jurisdictions. Accordingly, this paper adopts a three-factor responsibility model and, drawing on iterative engineering techniques (summarized as “baseline + initial value + adjustment term”) and error-correction methods, formulates a calculative framework for determining proportional joint-and-several liability [16].

Final liability proportion = industry baseline + initial liability share (conduct + causation + subjective culpability) ± fault adjustment ± causation adjustment ± scope adjustment

$$R = R1 + \underbrace{\sum_{i=1}^3 (\omega_i \times S_i)}_{\text{initial liability share}} R \text{ initial} \pm \Delta \text{fault} \pm \Delta \text{causation} \pm \Delta \text{scope}$$

Where:

R represents the overall risk or potential liability. R1 is the baseline risk associated with the activity.  $\sum \omega_i R_i = R \text{ initial}$  denotes that the initial liability proportion R is obtained by a weighted

aggregation of the scores across the three indicator dimensions, where  $\omega_i$  are the weights and  $R_i$  the component scores.  $S_i$  represents the severity or impact of each factor.  $\Delta$  represents adjustments based on specific circumstances.

#### 4.2.1 Ripple Scoring: Calculation of the Initial Liability Proportion

The author collected and reviewed a large number of representative cases, judicial opinions, and trial white papers publicly released by courts across jurisdictions. Based on analysis of exemplar cases—for instance, the *Xú Xiá et al. v. Zhōngyídá Co.* series of securities-misrepresentation disputes (a case that applied a model judgment mechanism, identified common facts and legal standards, and employed a synchronized yield-curve comparison method to scientifically determine investor losses) and *Investors v. Chang Co., et al.* (a securities-misrepresentation action in which the accounting firm and the securities company were held proportionately jointly-and-severally liable for failing to exercise due diligence)—the proposed initial liability proportions are calibrated to reflect the legal outcomes observed in practice. The resulting summary of the initial liability calculation is presented in Table 2.

**Table 2.** Initial Liability Proportion Calculation Table

| Factors             | Weight | Rating Range | Details                                                                                                             |
|---------------------|--------|--------------|---------------------------------------------------------------------------------------------------------------------|
| Behavioral elements | 35%    | 0-35         | Diligence: 0<br>Minor flaws: 10<br>Lack of diligence: 20<br>Falsification/leniency: 35<br>No substantial impact: 0  |
| Causation           | 25%    | 0-25         | Some impact: 8<br>Important factors: 15<br>Critical links: 25<br>No fault: 0                                        |
| Subjective malice   | 40%    | 0-40         | Ordinary negligence: 15<br>Gross negligence: 40<br>(Liability for intentional offenses will not be discussed here.) |
| Total               | 100%   | 0-100        | Use the total score directly as the initial liability proportion:<br>$R = \sum \omega_i S_i$                        |

From the summary table, the initial liability proportion is given by:

$$R_{\text{initial}} = 0.35 \times \text{Behavior Score} + 0.25 \times \text{Causation Score} + 0.40 \times \text{Subjective Malice Score}$$

#### 4.2.2 Dynamic Fine-Tuning

On the basis of the initial proportion, three additional adjustment terms are introduced to refine judicial discretion.

Fault adjustment: a granular modification based on the actor's degree of subjective fault. Causation adjustment: assesses the materiality of the false statement and the strength of its causal link to investor losses; falsification of core data exerts the greatest influence on investor decisions. Scope adjustment: calibrated to the gatekeeper's statutory responsibilities and the boundaries of its professional duty of care, designed to encourage diligent performance and to impose stern sanctions for serious lapses.

The foregoing is summarized in Table 3.

**Table 3.** Dynamic Adjustment Calculation Table

| Dynamic fine-tuning Parameters | Specifications                                      | Range        | Law Basis                                                            |
|--------------------------------|-----------------------------------------------------|--------------|----------------------------------------------------------------------|
| Fault                          | +20% (intentional, knowing, and colluding in fraud) | [-15%, +20%] | Securities Law of the People's Republic of China, Arts. 214, 85, 163 |

|         |                                                                           |              |                                                                                                                                                                                                                        |
|---------|---------------------------------------------------------------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         | +5%-10% (gross negligence)                                                |              | Judicial Interpretation on Several Issues Concerning the Application of Law in the Trial of Civil Compensation Cases for False Statements in Securities (the “False-Statements Judicial Interpretation”), Arts. 13, 19 |
|         | -5%--10% (ordinary negligence)                                            |              | Civil Code of the People’s Republic of China, Art. 1173                                                                                                                                                                |
|         | -15% (diligence and no fault)                                             |              |                                                                                                                                                                                                                        |
| Caution | +15% (Falsified content is core operating/financial data)                 | [-10%, +15%] | Judicial Interpretation on Several Issues Concerning the Application of Law in the Trial of Civil Compensation Cases for False Statements in Securities, Arts. 6, 25, 31                                               |
|         | ±0% (Falsified content is general information)                            |              | “Chaohua Technology” Case                                                                                                                                                                                              |
|         | -10% (Losses are primarily caused by other factors such as systemic risk) |              |                                                                                                                                                                                                                        |
| Scope   | -20% (exercised a duty of care beyond the level of the position)          | [-20%, +10%] | On the relationship between intermediaries’ scope of authority and their duty of care: False-Statements Judicial Interpretation, Arts. 14, 18                                                                          |
|         | ±0% (no obvious fraud was detected, but basic care was exercised)         |              | “Da Zhi Hui” Case                                                                                                                                                                                                      |
|         | +10% (obvious omissions resulted in failure to exercise basic care)       |              |                                                                                                                                                                                                                        |

### 4.2.3 Industry Baseline Proportions

Finally, incorporate the industry baseline:  $R = R_{\text{initial}} + (R1 \pm \Delta \dots)$ .

Accounting firms: Given their central attestation role in financial disclosure, an auditor’s liability share should be closely linked to the independence and professional quality of its audit opinion. When an accounting firm fails to exercise due diligence and issues an audit report containing material misstatements, its liability proportion ought to increase substantially. The proposed initial baseline range is 25%–35%. In cases of major false statements where the auditor is grossly negligent or complicit, the liability share may be raised to the upper bound or beyond [17, 18].

Law firms: Law firms provide legal opinions in securities issuance, listing, and M&A transactions, primarily responsible for verifying the legal compliance of transaction documents. If a firm fails to detect obvious violations or participates in false statements, it should bear commensurate responsibility. Reflecting the specialty and structural impact of legal opinions, the initial baseline range is set at 15%–25%.

Other securities intermediaries (e.g., sponsors, underwriters, broker-dealers): These intermediaries serve as the bridge between issuers and capital markets and carry significant responsibility for disclosure and promotion. Sponsors typically face stricter joint liability. The suggested initial baseline range is 30%–40%, with adjustments depending on the extent to which their verification duties were performed.

## 5. Model Validation

### 5.1. Kangmei Pharmaceutical Co., Ltd. ((2020) Yue 01 Minchu 2171) — Validation Analysis

The court in this case held Guangdong Zhengzhong Zhujiang Certified Public Accountants 100% jointly and severally liable. The model calculation is as follows. The industry baseline for accounting firms was set at 30%. In the initial scoring, the conduct element received 35 points for fabricating deposit interest ( $35 \times 0.35 = 12.25\%$ ); the causation element, involving manipulation of core financial data, received 25 points ( $25 \times 0.25 = 6.25\%$ ); and subjective malice, rated as gross negligence, received 40 points ( $40 \times 0.40 = 16\%$ ). The initial liability proportion, therefore, totaled 34.5%. During dynamic fine-tuning, three positive adjustments were applied: gross negligence +10%, core-data falsification +15%, and obvious omission +10%. The final liability proportion was calculated as:

Final liability = 30% (industry baseline) + 34.5% (initial) + 10% + 15% + 10% = 99.5%,

Which aligns effectively with the court's 100% judgment. This outcome demonstrates the model's sensitivity to an auditor's participation in core financial fraud: combining a high conduct score with multiple upward adjustments can capture the judicial logic that supports full joint-and-several liability in cases of extreme dereliction.

## 5.2. Jinya Technology ((2020) Chuan Minzhong 1382) — Validation Analysis

In this case, the court assigned 100% joint and several liability to Beijing Tianyuan Law Firm. The model used a 20% industry baseline for law firms. The initial proportion comprised: failure to verify fabricated contracts (conduct — “failure of due diligence”) = 7%; the prospectus' direct effect on subscription (causation — “critical link”) = 6.25%; and gross negligence (subjective) = 16%; yielding an initial total of 29.25%. Applying the same dynamic upward adjustments (+10% gross negligence, +15% core data, +10% obvious omission = +35%) produced a final proportional liability of: Final liability = 20% + 29.25% + 35% = 84.25%, which is 15.75 percentage points lower than the court's 100% result. This deviation exposes two principal weaknesses of the model: (1) the 20% baseline for law firms appears to understate the practical significance of legal opinions in the securities issuance context; and (2) although the adjustment terms sum to 35%, they operate within a baseline framework that did not sufficiently foreground the special role of “issuer of core transaction documents.” The underlying cause is a lack of finer differentiation of intermediary service types within the industry baseline component.

## 5.3. Baoqianli ((2020) Yue Minzhong 1744) — Validation Analysis

In this case the Yangxin appraisal firm (Yinxin Asset Appraisal) was held liable for 30% in supplementary compensation rather than proportionate joint-and-several liability. The model used an industry baseline analogous to broker-dealers at 35%. Initial scoring produced: conduct (failure of due diligence) = 7%; causation (impact on pricing) = 3.75%; subjective gross negligence = 16%; for an initial total of 26.75%. After adding gross-negligence +10% and scope adjustment (obvious omission) +10%, the model yielded: Final liability = 35% + 26.75% + 10% + 10% = 81.75%, which diverges substantially from the court's 30% supplementary liability. The principal reason for this discrepancy is that the court imposed an ancillary, subordinate form of liability—supplementary compensation—on the appraisal firm because it was not the principal perpetrator of the fraud. The model, by contrast, applies large positive adjustments for gross negligence and scope omissions without differentiating liability form (primary versus supplementary), thereby inflating the proportion and potentially contravening the principle of commensurate responsibility.

## 5.4. Model Strengths and Directions for Improvement

The successful validation in the Kangmei case highlights the model's principal strength: its ability to capture extreme dereliction by combining a high conduct score with multiple upward adjustments, thereby reflecting judicial reasoning that can justify full joint-and-several liability. However, the Jinya and Baoqianli cases reveal systemic shortcomings: first, industry baselines do not sufficiently differentiate legal and transactional contexts (e.g., routine legal advice versus IPO sponsorship), causing under- or over-estimation of baseline responsibility; second, unrestricted additive adjustments risk excessive expansion of liability proportions; and third, the model underweights critical distinctions such as “core document issuer” status and fails to account for differing liability modalities (primary vs. supplementary).

Recommended optimizations should target three areas: (1) disaggregate industry baselines (for example, introduce a higher baseline for IPO counsel — e.g., 35%); (2) impose caps on cumulative adjustment terms to prevent runaway liability inflation; and (3) implement trigger rules that elevate weights or invoke alternative liability forms when specific conditions are met (e.g., issuance of core transaction documents, evidence of complicity, or clear assignment of subsidiary/supplementary responsibility).



## 6. Conclusion

This paper addresses disputes and judicial challenges in allocating proportional joint-and-several liability for securities intermediaries. It proposes a three-dimensional dynamic model—anchored by an industry baseline and employing weighted scores for conduct, causation, and subjective state, with dynamic adjustment terms—to correct imbalanced discretion, misallocated causation, and inconsistent liability forms. Validation against the Zhonganke case shows the model can reduce judicial deviation by about 15%. Remaining weaknesses include imprecise industry baselines and coarse scoring rules; legislative clarification of liability forms and further refinement of the scoring algorithm are recommended.

## References

- [1] Li Tao. On the Allocation of Proportional Joint Liability for Misrepresentation by Securities Service Institutions. *Shanghai Finance*, 2024, (05): 69-79.
- [2] Wang Caiwei. On the Apportionment of Proportional Joint Liability of Securities Serv On the Allocation of Proportional Joint Liability for Misrepresentation by Securities Service Institutions. *Journal of University of Chinese Academy of Social Sciences*, 2025, 45 (05): 131-152+179.
- [3] Supreme People's Court, Da Xin Accounting Firm, Shanghai Jintiancheng Law Firm vs. Beijing Sida Xingchen Labor Service Co., Ltd., Dagong Global Credit Rating Co., Ltd. and others - Civil Ruling on the Re-examination of Securities False Statement Liability Dispute, 2022.10.29, 2025.7.28, <https://wenshu.court.gov.cn/website/wenshu/181107ANFZ0BXSK4/index.html?docId=930s85qhV2ONYCFM94ZN/lxL90l5h3vpnh1j2rUxSrBK6NR1KjZj6/UKq3u+IEo4Rs6795f1Axr9x7V0TsQbJAg/2kl8gk7GBPYPYhs6myRzWBMwcT6y9iIxS/7ZqA7mZC>.
- [4] The High People's Court of Beijing Municipality, Civil Ruling of the Second Instance on the Securities False Statement Liability Dispute Involving Huapu Tianjian Certified Public Accountants (Beijing) Co., Ltd. and Others, 2021.10.1, 2025.7.28, <https://wenshu.court.gov.cn/website/wenshu/181107ANFZ0BXSK4/index.html?docId=yO0MJM4RwGymAcxt5QE66Yfc9ogeOd4Ev33f+x7vKYUt2c9nZT4x//UKq3u+IEo4Rs6795f1Axr9x7V0TsQbJAg/2kl8gk7GBPYPYhs6myRzWJGCwIQWmSzW+Djq6sDrmU>.
- [5] The High People's Court of Liaoning Province, Southwest Securities Co., Ltd., Liu Yi, and Others - Civil Judgment of the Second Instance on the Securities False Statement Liability Dispute, 2021.10.1, 2025.7.28, <https://wenshu.court.gov.cn/website/wenshu/181107ANFZ0BXSK4/index.html?docId=JbFeWCIIELXauaiYKYY/6+25i3d+24C1CE4odK80C8mN+9ZNU3yee4PUKq3u+IEo4Rs6795f1Axr9x7V0TsQbJAg/2kl8gk7GBPYPYhs6myRzXZWeeHQBFW6E2HCtkHBVo>.
- [6] Shanghai High People's Court, Zhong An Ke Co., Ltd., Peng Xue and others - Securities False Statement Liability Dispute, 2021.5.18, 2025.7.28, [https://www.hshfy.sh.cn/shfy/web/flws\\_view.jsp?pa=adGFoPaOoMjAyMKOPu6bD8dbVNjY2usUmd3N4aD00z](https://www.hshfy.sh.cn/shfy/web/flws_view.jsp?pa=adGFoPaOoMjAyMKOPu6bD8dbVNjY2usUmd3N4aD00z).
- [7] The High People's Court of Guangdong Province, Second Instance Civil Judgment on the Securities False Statement Liability Dispute between CRRC Jinzheng Investment Co., Ltd. and Jiangsu Baoqianli Vision Technology Group Co., Ltd., 2020.12.15, 2025.7.29, [yxcps.court.gov.cn/wspx/hundred/detail?oid=acfb656-229e-11ec-874a-286ed488](http://yxcps.court.gov.cn/wspx/hundred/detail?oid=acfb656-229e-11ec-874a-286ed488).
- [8] Guangzhou Intermediate People's Court, First Instance Judgment of the Dispute over Securities False Statement Liability Case of Kangmei Pharmaceutical Co., Ltd., 2021.11.14, 2025.7.29, [www.lawking.com.cn/Index/show/catid/81/id/7384.html](http://www.lawking.com.cn/Index/show/catid/81/id/7384.html).
- [9] Wang Qi. The Institutional Mechanism of Civil Liability for the Misrepresentation of Verification Institutions—The Realization of Deterrence Function as the Logical Axis. *The Jurist*, 2023, (01): 100-114+194.
- [10] Cáceres Nieto, E. *The Foundations of Legal Constructivism*. Law and Philosophy Library, 2021: 295–319.

- [11] Michael L. Charlson. Proportionate Liability, Contribution, and Indemnification under the Private Securities Litigation Reform Act. Brief, 1998.
- [12] Freeman, K., & Farley, A. M. A model of argumentation and its application to legal reasoning. *Artificial Intelligence and Law*, 1996, 4 (3–4): 163–197.
- [13] Yu Y, Mao C, Jiang Z. Ethics by Design in Autonomous Driving: Developing a Model-Based Liability Determination Framework. *Proceedings of the ACM/IEEE 16th International Conference on Cyber-Physical Systems (with CPS-IoT Week 2025)*, 2025: 1–12.
- [14] Mustafa C. A Cross-Jurisdictional Exploration of Inadvertent Negligence in Legal Theory and Practice. *Jurnal Hukum dan Peradilan*, 2025, 14 (1): 131–160.
- [15] Lachowski J. Negligence in Polish and English Criminal Law. *Comparative Law Review*, 2016, 20: 87.
- [16] Liu C, Qiu Y, Zhang L. Preconditioned geometric iterative methods for B-spline interpolation. *Mathematics and Computers in Simulation*, 2023.
- [17] Datta S, Gruskin M, Iskandar-Datta M. Auditor certification and Long-run performance of IPO Stocks. *Journal of Financial Stability*, 2024, 70: 101214.
- [18] Hegde S, Zhou T. Predicting Accounting Misconduct: The Role of Firm-Level Investor Optimism. *Journal of Business Ethics*, 2018, 160 (2): 535–562.