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## Article

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## Securities regulation and implicit penalties<sup>☆</sup>

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### ABSTRACT

The extant literature offers extensive support for the significant role played by institutions in financial markets, but implicit regulation and monitoring have yet to be examined. This study fills this void in the literature by employing unique Chinese datasets to explore the implicit regulation and penalties imposed by the Chinese government in regulating the initial public offering (IPO) market. Of particular interest are the economic consequences of underwriting IPO deals for client firms that violate regulatory rules in China's capital market. We provide evidence to show that the associated underwriters' reputations are impaired and their market share declines. We further explore whether such negative consequences result from a market disciplinary mechanism or a penalty imposed by the government. To analyze the possibility of a market disciplinary mechanism at work, we investigate (1) the market reaction to other client firms whose IPO deals were underwritten by underwriters associated with a violation at the time the violation was publicly disclosed and (2) the underpricing of IPO deals undertaken by these underwriters after such disclosure. To analyze whether the government imposes an implicit penalty, we examine the application processing time for future IPO deals underwritten by the associated underwriters and find it to be significantly longer than for IPO deals underwritten by other underwriters. Overall, there is little evidence to suggest that the market penalizes underwriters for the rule-violating behavior of their client firms in China. Instead, the Chinese government implicitly penalizes them by imposing more stringent criteria on and lengthening the processing time of the IPO deals they subsequently underwrite.

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## 1. Introduction

Becker (1968), Stigler (1970) and Posner (1974) point out that if the law is complete, conflicts can be resolved by the courts without any government intervention. However, it is very costly to resolve problems of market failure since, in reality,

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the law is incomplete. The scope for government regulation of the economy has thus gradually expanded. Aoki et al. (1997) argued that regulation can be considered the result of the legal system's endogenous evolution. However, it remains unclear whether regulatory agencies play only an explicit role. The extant research suggests that these agencies may also influence the operation of the economy in an implicit manner (Chen et al., 2008; Jiang et al., 2009). In this study, we examine the impact of the implicit power of regulatory agencies on the behavior of underwriters in the initial public offering (IPO) process in China. North and Thomas (1973) pointed out the importance of studying implicit rules, or so-called informal constraints. This is of particular importance in transition economies such as China, where an understanding of only formal or explicit rules is insufficient. China is currently undergoing a transition from a planned to a market economy and from a traditional to a modern society. In such a rapidly transforming society, government regulation may be an important substitute mechanism for the law (Chen et al., 2008). China's current system of government regulation plays a role in maintaining market order, protecting the interests of consumers and society at large, and promoting industrial development (Yu, 1994).

Securities markets play an important role in market economies. Research on the regulatory behavior of governments and the consequences of that behavior can have important practical implications. China's securities market opened about 20 years ago and its capacity has recently undergone rapid expansion, both in the number of listed companies and the amount of financing. The expansion of this market has occurred so rapidly that a number of poor-quality companies have been allowed to enter the market, a situation that can be attributed to the country's securities issuance system. Since inception, stock issuances underwritten by securities firms require approval from the China Securities Regulatory Commission (CSRC). However, as the information between investors and issuers in the IPO process is severely asymmetric, a trustworthy third-party is required to ensure the normal operation of the IPO process. Issuers rely on this third party to convey information to investors and to prove that their stocks are fairly priced. Underwriters undertake this task as an intermediary agent of quality certification and information production (Huang, 2005).

Underwriters are expected to exercise due diligence in the listing selection process, to convey truthful information about issuers to the capital market and to facilitate the overall development of the capital market. In reality, however, they may not fulfill these expectations. The incomplete law and weak law enforcement that are prevalent in transition economies potentially provide strong incentives for misbehavior. To serve short-term interests, some underwriters recommend to the capital market companies that exhibit poor performance. Some listed firms are found to have engaged in severe violations of the law soon after an IPO, thus disturbing the normal operations of the market. The CSRC has formulated laws and regulations accordingly. However, these laws and regulations often lag behind the rapidly developing and ever-changing capital market. In many circumstances, reliance on existing laws and regulations undoubtedly provides inefficient or even ineffective supervision. In addition, standard enforcement mechanisms are often unable to function effectively in the early stages of market development, meaning these types of problems in transition economies cannot be resolved simply by the courts or through law enforcement or regulation. Mechanisms beyond law enforcement are needed to avoid supervisory and control failure. For example, an implicit contract may be a necessary complement to an explicit contract. To discourage irresponsible behavior on the part of underwriters, it may be more effective for securities regulatory authorities to supplement explicit mechanisms with implicit punitive measures. For example, if a violation occurs shortly after an IPO, then the CSRC may assess the joint liability of the underwriters involved and may scrutinize other companies recommended by these underwriters more closely or apply stricter criteria to them. This "soft knife of strict control" may have a significantly negative impact on these underwriters' market share.

In this paper, we investigate the impact of listed companies' violations on the underwriters who were associated with their IPOs. We show that the market share of these underwriters decreases significantly, even though the market response to the disclosure of rule-violating behavior is insignificant. We further find that the approval time for subsequent IPO applications recommended by underwriters associated with violations is significantly longer than that for other applications. Hence, we conclude that the decline in market share experienced by underwriters associated with violations can be attributed primarily to implicit government regulation.

The remainder of the paper is organized as follows. Section 2 reviews the related literature. Section 3 discusses the institutional background, theoretical analysis and research hypotheses. Section 4 describes the sample and data sources, and provides descriptive statistics. Sections 5–7 provide the empirical analysis and our test results. Section 8 concludes the paper.

## 2. Literature review

China's securities underwriting system has a short history of only 20 years and the research on it to date has focused mainly on the role played by underwriters. Few studies have examined the government's regulatory role in the IPO process. We review the relevant literature in two major areas: (1) government regulation and implicit contracts and (2) underwriter reputation.

### 2.1. Government regulation and implicit contracts

Many scholars have investigated the role of government regulation in both analytical and empirical settings. In Keynes' (1936) summary of the economic theories that have prevailed since Adam Smith first proposed his "invisible hand" theory, which Keynes challenges, he advocates state policy intervention in the economy to achieve full employment and economic

growth. Keynes claims that the free competitive market mechanism cannot attain balanced economic development and that a rational government should intervene in the economy. Stigler (1971) proposes regulatory capture theory, which posits that industry actively seeks government regulation whose design and implementation are primarily targeted at allowing it to enjoy greater benefits. Posner (1974) argues that the laissez-faire market approach is particularly vulnerable and inefficient, thus providing a public interest theory to underpin the necessity of government regulation.

More recent studies provide support for these theories. Glaeser and Shleifer (2003), for example, demonstrate that since the 19th century, government regulation has provided an effective response to the challenges of a changing economic environment when legal mechanisms are not guaranteed to be impartial. Shleifer (2005) proposes “enforcement theory,” arguing that government regulation is a trade-off between the costs of social disorder and dictatorship. Government regulation has many advantages in controlling disorder effectively. Government agencies could be more ready and effective, than courts, to monitor violations of the law. Pistor and Xu (2002) also call for securities market regulation on the basis of “the imperfection of the law.”

China's economic transition has adopted an exogenous institutional change model, i.e., it constitutes government-led reform based on the government's understanding of a dynamic market economy. The institutional arrangements made during this transition, and their resulting policy effects, may deviate from the objectives of government policy. Hence, Zhu and Ling (2005) posit that the Chinese government should implement appropriate controls to promote a smooth market transition. Zhang (2007) finds the Chinese stock market in the transitional period to operate imperfectly, which could lead to serious market failures. As the market has been unable to reach Pareto efficiency, effective government supervision has become a necessity. However, government intervention can be costly. To expand their authority and supervisory capacity, government agencies require administrative approval at different stages of economic transactions. It is also possible for these agencies to exchange their rights for direct or indirect economic benefits. The CSRC is the main authority empowered to regulate China's securities market. Chen et al. (2003) document two important roles played by the CSRC: (1) supervision of listing firms and ensuring the normal operation of the capital market and (2) evaluation of firms' eligibility to enter that market.

Explicit contracting refers to government regulation through laws and regulations. Another form of regulation, namely, implicit contracting, is also common. Baily (1974), Gordon (1974) and Azariadis (1975) proposed implicit contract theory after investigating the relationship between employers and employees. They show that risk-averse employees reach unspoken, long-term insurance contracts with risk-neutral companies to avoid income uncertainty. Azariadis and Stiglitz (1983), Chari (1983) and Hart (1983) introduced the incomplete and asymmetric information assumption to implicit contract theory to render it more realistic and explanatory. In the years since, a variety of research fields have adopted implicit contract theory. For example, it has been employed to examine “customer relationship-type” bank lending (Sharpe, 1990) and the relationship between executive pay and future performance (Hayes and Schaefer, 2000).

Academic research on implicit contracts in China is limited and focused primarily on macro-market issues. Zhang et al. (2001), for example, integrate Krugman's (1991) intervention theory of the exchange market into a theory of implied warranties on state-owned enterprises. They propose a model of implicit government guarantee contracts in the securities market and conclude that such guarantees are determined by their objective function in the stock market. They further argue that the attainment of this objective function relies on the relatively smooth development of the securities market. In addition to intervention through the imposition of market regulations, the government can also take administrative measures to control the size and spread of the stock market, thereby intervening in the market index. Zhang (2005) also demonstrate that, in the governance of state-owned commercial banks, the government's goal is the realization of political interests. It works with stakeholders through a collection of “signed” implicit contracts. The government also subsidizes the inefficient operations of these banks in pursuit of public functions. Zhou (2006) finds that the government must assure investors of a certain rate of return on their investment in the early stages of stock market development through an implicit commitment. Chen et al. (2008) suggest that the power of government regulation may have a spill-over effect in economies with an underdeveloped legal system. This spillover of regulatory power rests not only upon explicit contracts (such as government regulations and ordinances), but also works via consensus, albeit implicit, expectations of the rationale involved. Such consensus expectations, or an “invisible handshake,” constitute an implicit contract.

## 2.2. Underwriter reputation

Regulations are general rules or special actions developed and implemented by an executive agency to intervene directly in the market allocation mechanism or to change supply and demand decisions indirectly. They thus constitute a “discipline mechanism” (Spulber, 1999). There is also an important self-regulatory mechanism that constrains the behavior of economic entities, namely, a reputation mechanism.

Booth and Smith (1986) investigate the importance of underwriters' reputation capital and argue that corporations employ underwriters during IPOs to mitigate information asymmetry between themselves and investors in the IPO process. Underwriters both produce and deliver value in ensuring that an IPO price reflects the intrinsic value of the firm through authentication and information transfer. Chemmanur and Fulghieri (1994) find that high-quality enterprises take the initiative to hire highly reputed underwriters in an attempt to avoid adverse selection, differentiate themselves from low-quality issuers and obtain a high issuing price. Carter et al. (1998) test this finding empirically and document a positive correlation between the reputation of US underwriters and the quality of the firms whose IPOs they oversee.

The reputation mechanism can function effectively only when “cheaters” are punished for their dishonest behavior. Such punishment can take the form of being “crowded out” of the market, but sometimes also requires government intervention. Beatty et al. (1998) and Song and Uzun (2003) show that regulatory action by the US Securities and Exchange Commission (SEC) against violations committed by underwriters or their IPO clients has a significantly negative impact on the former’s reputation capital. Huang and Shi (2006) construct a two-stage game model under an asymmetric information structure, and conclude that regulators’ tolerance of underwriting violations leads to a tarnished reputation for both the regulators and the underwriters involved.

Several studies have examined the reputation mechanism in China’s securities market. Xu and Wei (2007), for example, examines the operation of the reputation mechanism of China’s investment banks by investigating ex-post IPO underpricing, the market share growth of these banks and the quality of their IPO client firms, among other factors. Other researchers have claimed that the reputation mechanism does not play a significant role in China’s securities market. For instance, Huang (2005) shows that CSRC investigations of underwriters produce minimal information and have an insufficient punitive effect on underwriters’ reputations. Liu et al. (2005) employs business volume as a proxy for underwriters’ reputation and empirically analyzes the relationship between such reputation and IPO client firm quality. He concludes that this relationship is distorted in China and that the information production and authentication functions of the country’s underwriters are ineffective.

### 3. Institutional background, theoretical analysis and hypotheses

#### 3.1. Institutional background

China’s securities market was established and has developed during the nation’s transformation from a planned to a market economy. A fully functioning stock issuance and listing system is one of the most important mechanisms in ensuring the healthy development of a securities market. China’s stock issuance system has undergone the four following major stages.

(1) January 1993 to December 1999: administrative allocation system stage

The most important feature of this initial stage was the administrative allocation of the IPO quota, in which both the central and local governments were involved. Permission to go public was not determined by a firm’s financial condition, but by its relationship with the central and local government. Lead underwriters had no power to choose client firms and their major strategy was securing issuance amounts and distribution.

(2) January 2000 to March 2001: transition stage of approval system

In terms of the issuance system, this stage differed little from its predecessor. Its main task was digesting the latter’s quota. However, there were a number of significant changes in the rules of scrutiny and in the listing process.

(3) March 2001 to December 2003: channel and approval system stage

In the third stage, each underwriter was allotted a certain number of channels. Each listing firm was recommended via one channel and channels could be reused.

(4) February 2004 to present: sponsor and approval system stage.

The implementation of the sponsor system, under which underwriters bear legal responsibility for their decisions, was a major breakthrough in China’s IPO system.

In this ongoing stage, the CSRC and the Securities Association of China have released more than a dozen regulations concerning underwriters, some of which directly assess their quality. These include “Trial Measures of Underwriter Credibility Assessment” (in effect since March 16, 2000), “Reputation Scoring Rules of Lead Underwriters” and “Interim Measures of Practice Quality Assessment for Lead Underwriters” (both effective from September 13, 2002 to December 31, 2004), “Interim Measures of Sponsor System on Securities Issuance and Listing” (effective from February 1, 2004 to December 1, 2008), and “Management Measures of Sponsor Business for Securities Issuing and Listing” (effective from December 1, 2008 to present). Underwriter reputation assessment formerly took place through the election of 10 outstanding underwriters each year mainly through rating the credibility of individual lead underwriters and the receipt of a poor score was punished through a cut in the number of channels available to the underwriter. Since implementation of the sponsor system, however, sponsoring underwriters have been held jointly liable for any violations committed by their client firms within two years of an IPO or within one year of a seasoned equity offering (SEO).

Although the government has formulated a number of regulatory laws, they remain incomplete in the country’s complex and volatile economic environment. Such incompleteness is a result of both the imperfect legal system itself and the insufficient punishment of violations. The law thus provides little deterrent effect and its ability to maintain social and economic order is weak. China is well known for the prevalence of Confucianism, a tradition that restrains undesirable behavior through moral standards (or “hidden rules”) rather than laws. Such hidden rules can compensate for the lack of laws, particularly in a dynamic economic environment. In addition, the high enforcement costs of laws challenge the effectiveness of legal systems. There are many issues involved in the assessment rules governing the behavior of underwriters. For example, the “Trial Measures of Underwriter Credibility Assessment” reward underwriters who receive a good rating, but impose few penalties on those who exhibit poor performance.

During the implementation of the IPO channel system between 2001 and 2004, a large number of the 318 recommendation channels open to the country's 83 underwriters remained continuously free. According to statistics,<sup>1</sup> from July to August 2004, there were more than 150 free channels; between September and December of the same year, the suspension period for IPOs, there were more than 140 free channels, accounting for 45% of the total number available. It is thus clear that penalizing underwriters via a cut in their number of recommendation channels had a very weak punitive effect. Moreover, although the underwriters of IPOs or SEOs have had joint legal liability for the violations of their client firms since the end of 2004, no underwriters have been explicitly punished for such violations. Our aim in this study is thus to investigate how government regulators in China ensure that underwriters conscientiously and effectively follow the rules to provide underwriting services in a way that protects the interests of investors. More specifically, we explore whether there are efficient hidden rules that restrain underwriter misbehavior.

### 3.2. Theoretical analysis and hypotheses

In the past three decades of China's reform process, mandatory institutional changes have provided the engine of change. The government has played a more important role than the market in the economic system and institutional transition.<sup>2</sup> Although the fundamental objective of China's economic transition has been to transform the resource allocation mechanism from a government-planned to a market-based system, government influence has remained significant throughout the process. The government has also had an important impact on resource allocation in the securities market, as reflected by the "quota management" instigated under the approval system. The country's Securities Act of 1999 introduced the approval system, thereby abolishing quota management in stock issuance, but its establishment did not mean the market became completely free. The government retains the power to determine offering eligibility. In the process of assessing applications for public offerings, the CSRC not only evaluates issuers' eligibility and the authenticity of the materials submitted, but also judges' applications on the basis of a series of specific requirements and standards for such offerings.<sup>3</sup> The regulator also retains the right to veto public offering applications.

The regulator's role is to maintain the stability and development of the securities market. Scandals inevitably harm such stability and development, damage the reputation of the regulatory authorities and possibly affect the careers of the principal officials involved (Chen et al., 2008). Therefore, securities regulatory authorities impose penalties on rule-violating behavior and pursue the joint prosecution of all parties involved, including the client firms, underwriters and audit firms. As a result, the underwriters associated with rule-violating firms have a record with the securities regulators. We conjecture that the regulatory authorities step up their monitoring of underwriters with a bad record. When reviewing the public offering applications recommended by these underwriters, for example, they will scrutinize them more closely, thereby delaying the offering process and generating greater uncertainty. As a result, we expect the market share of underwriters with a bad record with the authorities to decline.

In addition to government influence, underwriters' market share is also subject to market forces. Given the large degree of information asymmetry between issuers and investors, the former's choice of underwriter serves as an important signaling mechanism to mitigate information asymmetry and ex-ante uncertainty. Based on this reputation mechanism, companies tend to choose underwriters with a good reputation to send a positive signal to the market, gain greater credibility and recognition from the market, and raise more funds. The prior literature shows that IPO underpricing is significantly lower among IPOs underwritten by reputable underwriters (e.g., Beatty and Ritter, 1986). If a violation comes to light shortly after a listing, thus indicating the poor quality of the underwriting services, then the public will lose confidence in the underwriter involved, damaging its reputation. Thus, if the reputation mechanism is effective, we would expect a potential client firm to be reluctant to choose an underwriter that is associated with a rule violation, thereby leading to a decrease in that underwriter's market share. The foregoing discussion leads us to our first hypothesis, as follows.

H1: If a listed company's violation of the rules comes to light shortly after an IPO, then the market share of the affiliated underwriters will decline.

Empirical research has provided rich evidence in support of the importance of the reputation mechanism to underwriters. It has been shown, for example, that high-quality businesses tend to select reputable underwriters and that reputable underwriters choose high-quality clients (Booth and Smith, 1986; Chemmanur and Fulghieri, 1994; Carter et al., 1998). However, the data for most of these studies come from developed capital markets. It is well known that although China's securities market has grown rapidly, it remains far from developed. Prior to 2000, the country's underwriting market was completely controlled by the government. Between 2001 and 2004, the underwriting system developed into a channel system, which gave the market greater influence. During this government- to market-driven transition period, China's stock market was chaotic. In 2005, the CSRC thus suspended IPO approvals for one year to consolidate underwriters and listed companies.

<sup>1</sup> ChongQing Times, 2005-1-5, [http://cqsb.hsw.cn/gb/cqsb/2005-01/05/content\\_1546822.htm](http://cqsb.hsw.cn/gb/cqsb/2005-01/05/content_1546822.htm).

<sup>2</sup> Lin (1994) pointed out that institutional change can be divided into two types: induced change and mandatory change. Mandatory institutional change is a system command substitution introduced by government mandate and law and is, in essence, state intervention.

<sup>3</sup> Such standards cover issuers' financial condition and management structure, the investment value and risk involved, and the legality of and compliance with relevant intermediary activities.

Market failure in the face of strong government intervention is highly likely, which means that the reputation mechanism may not necessarily work effectively in China's securities market. In support of this supposition, Xu (2008) found no significant relationship between Chinese IPO underpricing and underwriter reputation in a study of broker rankings using comprehensive business volume as a proxy for reputation. He argues that underwriter reputation communicates no valid information to the market in China. Zhang (2001) analyzes the issue from the angle of government control and argues that the lack of a reputation mechanism in China's securities market is due primarily to excessive control by the regulatory authority. He claims that such excessive control increases the uncertainty of the stock market, leads to monopolies, rent-seeking and corrupt practices, and distorts market expectations, thus inducing opportunistic behavior.<sup>4</sup> Liu et al. (2005) summarizes the reasons for the distorted relationship between underwriter reputation and IPO quality in China: (1) the lack of a mechanism to restrain IPO firms from telling lies; (2) the lack of an incentive mechanism to establish a reputation for telling the truth; and (3) the lack of a monitoring and punishment mechanism aimed at underwriters who assist in firms' fraudulent behavior. Based on the foregoing analysis, we argue that an underwriter reputation mechanism is absent in China and posit our second hypothesis, as follows.

**H2.** There is no market reaction to firms underwritten by underwriters whose other clients have violated the IPO rules.

Securities market regulation in China takes a centralized administrative approach. The country's Securities Act provides the core legal framework for the unified supervision of this market, and the CSRC plays the centralized supervisory role. Self-regulatory mechanisms play only a minor and supplementary role in assisting the monitoring and supervision of the CSRC.<sup>5</sup> If all of the listed companies recommended by an underwriter prove to be "well-behaved," then that underwriter will make a good impression on the CSRC. We thus expect the CSRC to give greater credence to the IPO recommendations of such underwriters and, accordingly, are more likely to approve them. If, in contrast, the listed companies previously recommended by an underwriter were poor performers that violated the rules soon after an IPO, then the CSRC is likely to scrutinize the subsequent IPOs recommended by these underwriters and subject them to stricter criteria in an attempt to penalize such irresponsible behavior.<sup>6</sup> Consequently, the approval process for the IPO applications recommended by violation-affiliated underwriters may be longer. Although there are no formal rules stipulating the specific penalties to be imposed on underwriters affiliated with rule violations, such a "soft knife" approach could potentially have a pronounced negative impact on an underwriter's market share and thus play an effective disciplinary role.

To a certain extent, these kinds of hidden or implicit rules could serve to supplement formal or explicit rules. Further, the inadequacy of the latter renders the former more important. As laws and institutions improve, some implicit rules may gradually turn into explicit rules, whereas others may remain implicit for the following reasons. First, no matter whether explicit or implicit in nature, rules are generated in response to a particular issue and are generally stable over time. Second, the implementation costs for certain implicit rules to become explicit can be high. For example, the formulation of specific criteria to measure the effects of such rules is difficult in practice. Collecting evidence according to explicit rules is also costly, making them difficult to enforce. Finally, once certain implicit rules become explicit, individuals with vested interests lose the right to appropriate or allocate resources and thus suffer losses. Such individuals are often those making the rules, making them very reluctant to transform implicit rules into explicit rules.

All of these reasons apply to securities regulation in China, and thus, regardless of the explicit rules that apply, the CSRC may impose implicit penalties on the underwriters of IPO firms that violate the rules. More specifically, we expect that during the IPO approval process, the CSRC may be stricter with companies underwritten by underwriters whose previous clients violated the rules, either by applying more stringent approval criteria or by extending the approval time. Accordingly, our third hypothesis is as follows.

**H3.** The approval time for IPOs underwritten by an underwriter with implied responsibility for a previous rule violation is longer than that for IPOs underwritten by other underwriters.

## 4. Data and descriptive statistics

### 4.1. Data and samples

Most of the data used in this study was obtained from the WIND database, including the Securities Exchange data, listed company data, non-compliance data, underwriter data and IPO data. We also hand-collected data from the CSRC website, the Securities Association of China website and the websites of the Shanghai and Shenzhen Stock Exchanges. Our main sample

<sup>4</sup> Zhang (2001) proposed a simple game model with four basic conditions to analyze the reputation mechanism: (1) the transaction must be repeated; (2) the information must be passed sufficiently quickly, otherwise the cost to maintain a good reputation would increase; (3) trader dishonesty must be punished to repay the costs; and (4) the dealer must have the expectation that the transaction is in his or her long-term interests, which corresponds to the first condition.

<sup>5</sup> Since 1997, China's two stock exchanges have been directly supervised by the CSRC. Item 167 of the Securities Act stipulates the eight security regulation duties of the State Council, but does not mention the role of self-regulation.

<sup>6</sup> According to the approval system, the regulatory authority should not only punish issuers upon discovery of fraudulent behavior, but should also audit IPO applications carefully to prevent firms from disclosing fraudulent information.

**Table 1**  
Sample selection.

	1997–2000	2001–2007
Total number of listed companies with violations	50	444
<i>Excluding:</i>		
Number with more than three years between IPO year and violation year	22	411
Number of repeats <sup>a</sup>	<u>6</u>	<u>6</u>
Remaining sample	22	27
Large <sup>b</sup>	7	11
Non-large	15	16

<sup>a</sup> The number of repeats refers to listed companies underwritten by the same underwriters. We focus on the most serious cases and regard the rest as repeat cases.

<sup>b</sup> Large refers to large-scale underwriters. Based on the ranking of underwriters released by the Securities Association of China, those ranked in the top 20 for at least three consecutive years are considered to be large.

comprises all A-share listed companies with violations between 1997 and 2007 and their corresponding underwriters. The maximum time span from listing year to violation year is six years in our sample. The longer the time span, the less likely it is that the corresponding underwriter will be held jointly liable for the violation. Hence, we restrict the sample to violations within a three-year time span (the median). We further divide the sample into two groups according to the size of the underwriters (Large and non-large).

Using December 31, 2000 as a cut-off point for our pre- and post-2001 subsamples, we identify 22 and 27 rule-violating firms, respectively, as shown in Table 1. We divide the sample in this way because, prior to 2001, China's underwriting system was based on administrative allocation, with the market playing a very limited role in the process. Underwriting businesses were mainly subject to government administration in the first years of our sample, thus providing us with a relatively

**Table 2**  
Distribution of violations.

Type <sup>a</sup>	1997–2000		2001–2007					
	Large	Non-large	Large	Non-large				
<i>Panel A: Distribution by penalty type</i>								
Internal criticism		1				1		
Public condemnation		2	8			9		
Public criticism	4	7	3			1		
Public penalty	3	5	1			4		
Total	22		27					
<i>Panel B: Distribution by violation time span</i>								
IPO year		1	2			3		
1 year after IPO year	3	5	3			1		
2 years after IPO year	2	3	3			7		
3 years after IPO year	2	6	3			5		
Total	22		27					
Violation type			N	Proportion (%)	0 years	1 year	2 years	3 years
<i>Panel C: Distribution of violation types from 1997 to 2000</i>								
Failure to provide accurate and timely forecast of performance			6	27.27		6		
Failure to disclose important events on time			2	9.09		1	1	
Failure to disclose important events on time and carry out duties in compliance with the law			2	9.09		1		1
Failure to carry out duties in compliance with the law			3	13.64			3	
Disclosure of false information or a misleading statement			8	36.36		3	1	4
Going public fraudulently			1	4.55				1
Total			22	100.00		50%	22.7%	27.3%
<i>Panel D: Distribution of violation types from 2001 to 2007</i>								
Failure to provide accurate and timely forecast of performance			3	11.11		3		
Failure to disclose important events on time			12	44.44	3	1	3	5
Failure to disclose important events on time and carry out duties in compliance with the law			2	7.41	1			1
Failure to carry out duties in compliance with the law			2	7.41			2	
Disclosure of false information or a misleading statement			8	29.63	1	2	3	2
Total			27	100.00	18.5%	22.2%	29.6%	29.6%

<sup>a</sup> There are five penalty categories. From least to most severe, they are internal criticism, public condemnation, public criticism, public penalty and criminal responsibility.



“pure” dataset to distinguish the government’s impact on underwriters’ market share from that of the market. Between 2001 and 2007, the country’s underwriting system evolved into an approval and sponsor system, in which the market began to play a role, and the government quota allocation system was abolished. Under the latter system, IPO applications were recommended by a lead underwriter and voted on by an approval committee, with final approval granted by the CSRC. The 2001–2007 subsample thus permits examination of the combined government-market effect on underwriters.

#### 4.2. Descriptive statistics

Descriptive statistics are provided in Table 2. As shown in Panel A, 11 cases were classified as “public criticism” cases in the 1997–2001 period, accounting for 50% of the sample, and eight (36% of the sample) were classified as “public penalty.” After 2001, four and five cases were classified as public criticism and public penalty, respectively, accounting for 14% and 18% of the sample. Cases subject to public condemnation accounted for 62.9% of the total sample. As can be seen from the table, the severity of punishment for violations by listed companies seems to have declined since 2001, which may suggest that an increasing number of firms are complying with the rules. It is also clear that fewer companies with violations were underwritten by large underwriters than small underwriters, thus suggesting that the quality of the former is higher than that of the latter. According to the time distribution of violations presented in Panel B of Table 2, violations before 2001 were most frequent one year or three years after the IPO, whereas those after 2001 were most frequent two years after the IPO. The statistics for the large and non-large subsamples show the time gap between violations and IPOs to be more evenly distributed for the former.

Panels C and D of Table 2 present the distribution of violation types for the 1997–2000 and 2001–2007 periods, respectively. The major observations can be summarized as follows.

- (1) There are six and three cases that failed to provide accurate or timely performance forecasts during the 1997–2000 and 2001–2007 periods, respectively. All occurred within one year of the IPO year. As forecast data comes from the IPO financial reports, the underwriters involved are directly related to the violations.
- (2) Two and 12 cases failed to disclose important events on time in the two respective periods. Of the 12 cases in the 2001–2007 period, three violations occurred in the IPO year and four more violations in the two-year period following the IPO.
- (3) There were two cases of failure to disclose important events in a timely fashion and two cases of non-compliance in the two subsample periods. Half of these occurred within the two-year period following the IPO.
- (4) There were eight cases of firms disclosing false or misleading information in each sub-period, which are deemed to be serious violations. These firms are characterized by poor financial performance and low-quality information disclosure, and their underwriters can be considered to have failed to exercise due diligence and are jointly liable for the violations.

As can be seen from the table, according to the rules stipulated by the sponsor system, the underwriters should have been held responsible for the majority of violations, as most occurred within two years of the IPO. In addition, since the liability of underwriters who underwrite companies in the growth enterprise market has been extended to three years after the IPO year, we include in our sample all firms committing a violation within this three-year period.

#### 4.3. Variable definitions

The variables used in this paper are defined in Table 3.

### 5. Do listed firm violations lead to a decline in their underwriters’ market share?

#### 5.1. Market share and ranking

We examine underwriters’ change in market share within three years of a violation in the 1997–2000 and 2001–2007 periods, as calculated by their market share in the current year minus that in the previous year. Market share is measured on the basis of (1) the number of IPO deals underwritten by an underwriter in a given year divided by the total number of IPO deals that year and (2) an underwriter’s amount of IPO financing divided by the total amount of IPO financing that year.<sup>7</sup> To avoid the systemic effects of an increase in the total number of underwriters over time, we employ the market share of underwriters without violations as a benchmark to infer whether violations lead to a decrease in the market share of underwriters associated with them. We further investigate the change in underwriters’ rankings in each period, which is less subject to the market share dilution effect. Basically, we rank the underwriters in descending order according to their market share in

<sup>7</sup> Market share is calculated on the basis of underwriting business. If an underwriter underwrote no IPO business, then its market share is calculated as 0. The market share of underwriters that filed for bankruptcy is also calculated as 0 for the year after bankruptcy was filed. The main calculations in the case of reorganization, mergers and restructuring are based on the new post-merger market share. For example, if Shanghai Shenyin SWS Securities and Shanghai International Securities merged, then the market share of the resulting company was calculated by adding together those of the two original firms.

**Table 3**  
Variable definition.

Variable	Definition
Mark <sub>t</sub>	IPO market share in year <i>t</i> . It is calculated as the amount of IPO funds raised by the underwriter divided by the total IPO funds in year <i>t</i>
Mark <sub>t-1</sub>	IPO market share in previous year, i.e., <i>t</i> – 1. It is calculated in the same way as Mark <sub>t</sub>
Punish	Dummy variable that is equal to 1 if any of the underwriter's IPO client firms had a previous violation, and 0 otherwise
Lnsize	Natural logarithm of the underwriter's underwriting revenue
Iflist	Dummy variable that is equal to 1 if the underwriter is a listed firm, and 0 otherwise
Region	Dummy variable that is equal to 1 if the underwriter is registered in the East region, and 0 otherwise
UPR <sub>day</sub>	IPO under-pricing on the first day. It is calculated as follows $UPR = (P_1 - P_0) / P_0 - mreturn$ , where $P_1$ is the closing price on the first day, and $P_0$ is the issue price
UPR <sub>week</sub>	IPO under-pricing in the first week. It is calculated as above, with $P_1$ the closing price at the end of the first week
UPR <sub>month</sub>	IPO under-pricing in the first month. It is calculated as above, with $P_1$ the closing price at the end of the first month
Lnpro	Natural logarithm of the issuing price multiplied by the issuing number
Rsd	Standard error of the return in the month after the IPO
Lots	Lot winning rate
State	Dummy variable that equals 1 if the company is state-owned, and 0 otherwise
Lnasset	Natural logarithm of the company's total assets
Lagdate	Number of days from issuing date to listing date
Lev	Leverage of the company, calculated as total liabilities divided by total assets
Age	Number of years from establishment year to IPO year
Roe	Return on equity, calculated as net income divided by equity
Hu	Dummy variable that equals 1 if the company is listed on the Shanghai Stock Exchange, and 0 otherwise
Applytime	Length of time from shareholder decision to prospectus issuance
Punish <sub>after</sub>	Dummy variable that is equal to 1 if the company is underwritten after a violation, and 0 otherwise
Large	Dummy variable that is equal to 1 if the total amount of underwriting funds is ranked in the top 20 from 2004 to 2008, and 0 otherwise
Growth	Growth in firm revenues before IPO year
Year	Year dummy variables
Industry	Industry dummy variables

**Table 4**  
Market share and ranking.

	Variable	N	Median	Z	Pr >  Z	Mean	T	Pr >  t
<i>Panel A: Comparison of market share during 1997–2000</i>								
Number	diff <sup>a</sup>	22	–0.011	–0.883	0.337	–0.017***	–3.57	0.002
Funds	diff	22	–0.015	–1.253	0.247	–0.012**	–2.42	0.025
<i>Panel B: Comparison of market share during 2001–2007</i>								
Number	diff	27	–0.003	–1.303	0.193	–0.012*	–2.00	0.056
Funds	diff	27	–0.005 <sup>a</sup>	–1.881	0.060	–0.015**	–2.50	0.019
<i>Panel C: Comparison of ranking during 2001–2007</i>								
Ranking	Change <sup>b</sup>	27	3.000*	1.73	0.087	2.756*	1.88	0.070

<sup>a</sup> diff = adjusted market share in later year minus adjusted market share in current year.

<sup>b</sup> Change = market rank in later year minus market rank in current year; *t* statistics are shown in the parentheses.

\* *p* < 0.1.

\*\* *p* < 0.05.

\*\*\* *p* < 0.01.

the years from 2001 to 2007. If their market share declines, then the change in their ranking should be positive. A negative change in ranking, in contrast, indicates increased market share.

The results of our analysis of the change in market share and ranking are tabulated in Table 4. It can be seen in Panels A and B that both the mean and median changes in the number of deals and amount of IPO funding for underwriters associated with violations are negative, thus suggesting that their market share, on average, declined significantly after the violations occurred. These results are robust across the two subsample periods. As previously noted, in the 1997–2000 period, government regulation was the sole factor in the IPO approval process, with the market effect playing an insignificant role. We thus infer that the decline in underwriters' market share during this period was the result of government regulation. In the 2001–2007 period, IPOs were subject to the approval and sponsor system, in which both the government and the market played a role. The decline in underwriters' market share during this period may thus be the result of both government regulation and market selection. Panel C shows that the rankings of underwriters associated with violations declined in the year following those violations. Both the mean and median are positive and statistically significant at the 10% level.

Overall, these test results show that following violations, the market share of the underwriters associated with them declined significantly. However, further analysis is needed to distinguish the effects of government regulation from those of market selection.

**Table 5**  
Descriptive statistics of the variables.

Variable	N	Mean	Min	Median	Max	sd
Mark <sub>t</sub>	384	0.021	0.000	0.005	0.466	0.047
Mark <sub>t-1</sub>	384	0.019	0.000	0.005	0.466	0.044
Punish	384	0.068	0.000	0.000	1.000	0.252
Lnsiz	384	18.268	13.268	18.242	21.475	1.292
lflist	384	0.128	0.000	0.000	1.000	0.334
Region	384	0.763	0.000	1.000	1.000	0.426

**Table 6**  
Pearson correlation coefficient of each variable.

Variable	Mark <sub>t</sub>	Mark <sub>t-1</sub>	Punish	Lnsiz	lflist	Region
Mark <sub>t</sub>	1.000					
Mark <sub>t-1</sub>	0.526*** (0.000)	1.000				
Punish	-0.055 (0.286)	0.038 (0.457)	1.000			
Lnsiz	0.459*** (0.000)	0.489*** (0.000)	0.158*** (0.002)	1.000		
lflist	0.100** (0.049)	0.089* (0.079)	-0.010 (0.847)	0.151*** (0.003)	1.000	
Region	0.175*** (0.001)	0.174*** (0.001)	0.077 (0.132)	0.207*** (0.000)	-0.099* (0.053)	1.000

*t* Statistics are in parentheses.

\*  $p < 0.1$ .

\*\*  $p < 0.05$ .

\*\*\*  $p < 0.01$ .

## 5.2. Multivariate analysis of impact of a violation on associated underwriter's market share

In this section, we report the results of multivariate analysis of the impact of violations on the market share of the underwriters associated with them. If the IPO client firm of an underwriter violates the rules, then the underwriter's reputation will be damaged. We additionally expect its market share to be adversely affected. Multivariate analysis allows us to account for other factors that may affect an underwriters' market share, such as market share in the previous year, size, listing status, registration location and year. We run the regression based on the following equation (model I).

$$\text{Market}_t = \beta_0 + \beta_1 \text{Mark}_{t-1} + \beta_2 \text{Punish} + \beta_3 \text{Lnsiz} + \beta_4 \text{lflist} + \beta_5 \text{Region} + \text{Yeardummies} + \varepsilon \quad (1)$$

An underwriter's market share is calculated on the basis of both its amount of IPO funding and number of IPO deals, as previously discussed. We use the fund index to calculate an underwriter's market share in our analysis of the impact of listed companies' violations on that market share, and we then use the number of IPO deals to calculate market share as a robustness test. We also control for underwriter size in this model and, in general, expect a positive correlation between size and market share. As underwriters are financial firms, their size is not measured by total or net assets, but rather by the total revenue from their underwriting business. The underwriter's listing status (lflist) is also included in the regression, as we expect listed underwriters to enjoy a better reputation and greater market visibility; thus, listing status is expected to affect market share. In addition, we also control for the location in which the underwriters are registered. China's eastern region is considered to have a better legal environment and more developed economy, and thus more companies going public. Underwriters located in this region may therefore enjoy a "local advantage" and, accordingly, a larger market share.

## 5.3. Empirical results

### 5.3.1. Descriptive statistics

We make certain adjustments according to mergers, reorganizations and name changes among underwriters in the 2001–2007 period and obtain a total of 499 underwriter-year observations. After excluding observations with missing data, we retain 384 for our regression analysis. Table 5 provides the descriptive statistics of the main variables used in our regression. It is clear that the majority of the underwriters are not listed and most are registered in the eastern region.

The Pearson correlation coefficients of the variables are presented in Table 6, from which it can be seen that underwriters' market share is significantly correlated with their market share in the previous year. The market share in year  $t$  is negatively correlated with "Punish," but not at a statistically significant level. As expected, market share is positively correlated with underwriters' size, listing status and registration in the eastern region.

### 5.3.2. Regression results

We run the multivariate regression and the results for the testing of model I are presented in Table 7.

As shown in Table 7, the estimated coefficient on Punish is negative and significant ( $p < 0.01$ ), thus supporting our hypothesis that an underwriter's market share will decrease significantly in the next period if its IPO client firms commit

**Table 7**  
Regression results.

	(1) Mark <sub>t</sub> (amount of IPO funding)	(2) Mark <sub>t</sub> (number of IPO deals)
Mark <sub>t-1</sub>	0.401*** (7.71)	0.175*** (3.33)
Punish	-0.022*** (-2.68)	-0.008* (-1.74)
Lnsize	0.011*** (5.82)	0.008*** (7.42)
lflist	0.002 (0.40)	0.004 (1.31)
Region	0.006 (1.21)	0.005* (1.91)
Yeardummies	Yes	Yes
Intercept	-0.170*** (-5.25)	-0.114*** (-6.31)
N	384	384
Adj. R <sup>2</sup>	0.338	0.307

*t* Statistics are in parentheses.

\*  $p < 0.1$ .

\*\*\*  $p < 0.01$ .

violations. Consistent with our expectation that market share is serially correlated, the coefficient on Mark<sub>t-1</sub> is positive and significant ( $p < 0.01$ ). The positive and significant coefficient on Lnsize suggests that the larger the underwriter, the greater its market share. The coefficient on Region is also positive and significant, thus indicating that underwriters in the eastern region enjoy a local advantage. Lastly, the coefficient on lflist is positive, but insignificant.

In summary, the analysis in this section provides supporting evidence for Hypothesis 1, which posits that an underwriter's market share will decline significantly after one of its client firms commit a violation.

## 6. Market response to client firm violations

Our analysis shows that if a listed company violates the rules shortly after an IPO, then its affiliated underwriter experiences a significant drop in market share. However, as previously discussed, it remains unclear whether this decline is the result of government regulation/penalties or market selection. In this section, we thus investigate the market response to the discovery of violations by the client firms of an underwriter. We analyze two aspects of this response: (1) the underpricing of the IPOs underwritten by affiliated underwriters and (2) the stock market response to other listed firms underwritten by these underwriters upon discovery of violations.

### 6.1. IPO under-pricing following violations by listed companies

The IPO under-pricing phenomenon has been widely documented since the 1960s. It refers to an IPO price being set lower than the market price in the secondary market, with its stock price rising substantially in the first day of public trading. Prior research shows such under-pricing to be negatively correlated with underwriter reputation (e.g., [Beatty and Ritter, 1986](#); [Carter and Manaster, 1990](#)). Therefore, by examining the under-pricing of the new IPOs underwritten by a given underwriter, we can determine whether a client firm's violation impairs the reputation of the underwriter associated with that violation. If there is greater under-pricing of new IPOs among underwriters associated with violations, then this would suggest that the decline in underwriters' market share can be partially attributed to market selection as a result of the reputation mechanism. If, in contrast, we find no such greater under-pricing among these underwriters, then we can infer that the main factor in that decline is government penalties/regulation.

#### 6.1.1. Model

Based on the foregoing discussion, we employ the regression specified in model II below to test the relationship between underwriter violations and the under-pricing of new IPOs. Our main test variable is Punish, a positive and significant coefficient on which would suggest that an underwriter's reputation is tarnished by a client firm violation and that the market penalizes it by demanding greater under-pricing. As IPO under-pricing is also affected by many other factors, such as new share issuance size, stock price uncertainty and the lot winning rate (Lots), we follow [Chen et al. \(2004\)](#) and [Xu \(2008\)](#) in including a number of control variables in the following model.

$$\text{UPR} = \beta_0 + \beta_1 \text{Punish} + \beta_2 \text{Lnpro} + \beta_3 \text{Rsd} + \beta_4 \text{Lots} + \beta_5 \text{State} + \beta_6 \text{Lnasset} + \beta_7 \text{Lagdate} + \beta_8 \text{Lev} + \beta_9 \text{Age} + \beta_{10} \text{ROE} \\ + \beta_{11} \text{Hu} + \text{Yeardummies} + \text{Industrydummies} + \varepsilon \quad (2)$$

We employ three measures for under-pricing (UPR), namely, first-day, first-week and first-month under-pricing, as it sometimes takes longer than one day for the market to price an IPO efficiently. [Beatty and Ritter \(1986\)](#) argue that IPO size is related to business-related speculation. The smaller the offering size, the greater the degree of such speculation. A large offering size is normally seen for large companies, which are usually subject to more stringent supervision by the government and regulatory agencies, as well as more monitoring by large investment groups. Therefore, information asymmetry is relatively small for these firms, and the degree of under-pricing should be lower. Hence, we control for the offering size

(LnPro) in the model and expect a negative coefficient on this variable. Following Beatty and Ritter (1986), we employ the standard deviation of returns after the IPO to measure IPO uncertainty. We expect it to be positively correlated with underpricing.

Chowdhry and Sherman (1996) argue that underpricing may be due to information leakage during the IPO process. We thus include “Lots” in our model. The lower its value, the higher the degree of underpricing is expected to be. In addition, we control for other firm characteristics, including size, leverage, age, ROE, listing on the Shanghai Exchange, and year and industry fixed effects.

### 6.1.2. Sample and descriptive statistics

In this analysis, we focus on new IPOs underwritten within one year of a violation announcement by the underwriters involved. Of the 28 listed companies with violations included in this analysis, we identify the corresponding IPOs underwritten by the same underwriters within one year of the violation notice and obtain a total of 77 IPOs. We assign a 1 to the Punish variable for these IPOs. We further identify another 445 IPOs in the WIND database, and assign a 0 to the Punish variable for them. As a result, we have a total of 522 IPOs underwritten by the two types of underwriters in the same period.

Table 8 presents the distribution of IPOs for the two types of underwriters over time and the mean underpricing in each year during the 2001–2007 period.

As shown in Panel B of Table 8, the mean UPR for the first day, week and month for IPOs underwritten by underwriters associated with violations is greater than that for IPOs underwritten by other underwriters in the overall sample. Among the three underpricing measures, UPR<sub>day</sub> is greatest, followed by UPR<sub>week</sub> and UPR<sub>month</sub>. We suspect that the market overvalues IPOs on the first day, thereby driving up the price, which gradually returns to a rational level thereafter. In addition, the pattern of IPO underpricing over time is consistent with the overall performance of the Chinese stock market. We find no consistent pattern when comparing the IPO underpricing for firms underwritten by the two types of underwriters in each year: that of those underwritten by underwriters associated with violations is higher in certain years (2001, 2002, 2003 and 2004) and lower in others (2005, 2006 and 2007).

### 6.1.3. Regression results

We present our regression results in Table 9, from which it can be seen that the coefficient on the main variable is negative, but insignificant. The results are consistent across the three underpricing measures and those for the other control variables are consistent with the prior literature: IPO offering size is negatively correlated with underpricing, that is, there is less underpricing among large companies. The coefficient on Rsd is significantly positive, which is consistent with greater IPO underpricing for stocks characterized by greater uncertainty. We also see a negative and significant coefficient on Lots. All of the results are robust to the different measures of underpricing.

The foregoing tests and analysis demonstrate that the market's response to a decline in an underwriter's reputation is not significant.

## 6.2. Market response to the announcement of violations

In this section, we investigate whether the market responds to the announcement of violations. If the violations of a client firm have a negative impact on the reputation of the underwriters involved, then the market should also display concern over the quality of other listed companies underwritten by those underwriters (Beatty et al., 1998), which we expect to be exhibited in a decline in the market value of these listed firms. Accordingly, we examine the three-, five- and

**Table 8**  
IPO Distribution and annual underpricing.

Type <sup>a</sup>	2001	2002	2003	2004	2005	2006	2007	Total	
<i>Panel A: IPO distribution for two types of underwriters</i>									
1	3	15	5	7	2	12	33	77	
0	76	56	62	93	13	53	92	445	
Total	79	71	67	100	15	65	125	522	
Underpricing	Type	All sample (%)	Mean of annual underpricing						
			2001 (%)	2002 (%)	2003 (%)	2004 (%)	2005 (%)	2006 (%)	2007 (%)
<i>Panel B: Underpricing for two types of underwriters</i>									
UPR <sub>day</sub>	1	145.08	106.25	125.31	60.86	80.48	24.62	98.77	208.21
	0	126.70	195.79	152.32	72.93	69.36	48.28	81.65	185.28
UPR <sub>week</sub>	1	134.44	101.31	117.05	68.29	58.96	45.73	85.34	194.63
	0	122.84	191.56	150.80	71.14	63.64	42.25	82.84	178.15
UPR <sub>month</sub>	1	131.28	74.48	117.08	68.85	53.60	61.87	84.79	189.96
	0	120.42	190.71	147.58	66.61	54.01	41.11	87.04	179.67

<sup>a</sup> “1” represents an underwriter associated with a violation, i.e., an underwriters whose client had a violation in the previous year; “0” indicates an underwriter with no associated violation.

**Table 9**  
Regression results for model II.

	(1) UPR_day	(2) UPR_week	(3) UPR_month
Punish	−0.006 (−0.04)	−0.079 (−0.57)	−0.090 (−0.57)
Lnpro	−1.519*** (−8.80)	−1.470*** (−8.80)	−1.682*** (−8.90)
Rsd	8.689 (1.60)	9.450* (1.80)	9.259 (1.56)
Lots	−0.573*** (−8.85)	−0.511*** (−8.15)	−0.609*** (−8.59)
State	−0.054 (−0.56)	−0.061 (−0.65)	−0.069 (−0.65)
Lnasset	0.974*** (6.98)	0.936*** (6.93)	1.143*** (7.47)
Lagdate	−0.013*** (−6.60)	−0.012*** (−5.90)	−0.015*** (−6.69)
Lev	−2.032*** (−4.84)	−1.968*** (−4.85)	−2.416*** (−5.26)
Age	−0.020 (−1.07)	−0.020 (−1.13)	−0.023 (−1.13)
Roe	−0.003 (−0.28)	−0.003 (−0.33)	−0.002 (−0.17)
Hu	0.482*** (2.90)	0.503*** (3.12)	0.506*** (2.78)
Yeardummies	Yes	Yes	Yes
Industrydummies	Yes	Yes	Yes
Intercept	12.72*** (8.72)	12.40*** (8.78)	12.60*** (7.89)
N	425	425	425
Adj. R <sup>2</sup>	0.800	0.798	0.760

*t* Statistics in parentheses.

\*  $p < 0.1$ .

\*\*\*  $p < 0.01$ .

seven-day cumulative abnormal returns (CARS) of listed companies underwritten by underwriters associated with violations surrounding the violation announcement.

We employ buy and hold abnormal returns (BHAR) to measure the market reaction. We calculate the three-day [−1, 1], five-day [−2, 2] and seven-day [−3, 3] BHAR as follows.

$$BHAR_i = \prod_{t=1}^n (1 + R_{it}) - \prod_{t=1}^n (1 + R_{mt}),$$

where  $R_{it}$  is the return of stock  $i$  on day  $t$ ,  $t = 1, 2, \dots, 7$ , and  $R_{mt}$  is the value-weighted rate of return of all A-shares on day  $t$ , considering re-investment of cash dividends.

Because the shorter the time gap between the listing day and the violation day, the more likely it is that the underwriter shares joint liability for the violation, we divide violations into four categories based on the time gap: violations that occur in the IPO year and those that occur one, two and three years after it. Table 10 provides the means and *t*-tests of the CARs.

If an underwriter's reputation is tarnished by the announcement of a violation by one of its client firms, then we would expect the market value of the other listed companies it has underwritten to decline. Accordingly, we would expect negative CARs during the event window. However, as shown in Table 10, there is little evidence of negative CARs for the other listed companies underwritten by an underwriter associated with a violation. The mean CARs [−1,1] are significantly negative for violations occurring within one year and three years of an IPO. Those for all other event windows and other categories are a mix of positive and negative numbers, but all are insignificant. We can thus conclude that when the client firm of an

**Table 10**  
Cumulative abnormal returns during event window.

	Variable	Mean	<i>T</i>	Pr >   <i>t</i>
[−1, 1]	Violation in IPO year	−0.001	−0.53	0.599
	Violation in first year after IPO	−0.005**	−2.29	0.023
	Violation in second year after IPO	−0.001	−0.46	0.649
	Violation in third year after IPO	−0.004*	−1.94	0.053
[−2, 2]	Violation in IPO year	−0.004	−1.14	0.255
	Violation in first year after IPO	0.003	0.95	0.346
	Violation in second year after IPO	0.002	0.53	0.594
	Violation in third year after IPO	0.009	1.62	0.108
[−3, 3]	Violation in IPO year	−0.004	−0.79	0.431
	Violation in first year after IPO	0.001	0.30	0.765
	Violation in second year after IPO	0.003	0.56	0.575
	Violation in third year after IPO	0.010	1.52	0.131

*t* Statistics in parentheses.

\*  $p < 0.1$ .

\*\*  $p < 0.05$ .

underwriter commits a violation, there is no consistently negative market response to the other listed companies underwritten by the same underwriter.

Combined with our empirical evidence of IPO under-pricing, these results suggest that the decline in market share for underwriters involved with violations is the result of neither the reputation mechanism nor the market effect, but is more likely to be due to government penalties/regulation.

## 7. Are there hidden rules in securities regulation?

To some extent, government regulation provides an alternative to the legal system. Although the CSRC is the main government authority tasked with supervising the securities market and maintaining its stability and development, it has no authority to bypass the legal process, to assess the direct loss to investors of a scandal or to order those responsible to provide compensation (Chen et al., 2008). We conjecture that the CSRC instead takes an implicit approach to fulfilling its duties. IPO allocation is the result of a process involving companies, the CSRC, the government at different levels and underwriters. The CSRC may also adopt subtle methods to regulate the approval process, so as to achieve its objectives. To discipline underwriters in a way that ensures they fulfill their responsibilities as financial intermediaries and reduce the occurrence of violations, the CSRC can exercise pressure or impose implicit penalties on those involved in violations. We conjecture that the CSRC may do so by lengthening the approval process or imposing stricter criteria on the IPO applications underwritten by underwriters associated with previous violations.

To test these conjectures empirically, we collect the approval times for IPOs between 2001 and 2008. Going public is a complex process. First, agreement to a fund-raising program must be reached in a general meeting of shareholders, after which an underwriter provides counsel on the company's IPO application. The underwriter and the company then submit the application to the CSRC and wait for its approval. Approved IPO firms publish a prospectus notice within one to two months of approval, and are then listed on the Shanghai or Shenzhen Stock Exchange. In calculating approval times, we were unable to obtain the exact date on which listed companies submitted their applications to the CSRC, and we thus used the date disclosed in the prospectus as the date on which the IPO plan was approved by shareholders as a proxy. Our assumption was that after the plan had been approved, the company would have immediately begun listing preparation. As we could obtain only the approval times published by the CSRC from 2004 to 2008, we adopted the prospectus signing date as the approval date.

We divided underwriters into two categories: those that underwrote listed companies that committed violations within three years of an IPO and all other underwriters. The underwriters of 58 IPOs fall into the first category and those of 124 into the second. Fig. 1 presents a comparison of the IPO approval times for the two types of underwriters for each year. With the exception of 2005, it can be seen that the approval time for companies underwritten by underwriters associated with violations was longer than that for those underwritten by underwriters without violations. The discrepancy in 2005 may be because IPO approvals were effectively put on hold in 2005, and there were a large number outstanding from the previous year. To process them quickly, the CSRC may have temporarily stopped distinguishing between underwriters on the basis of violations. The aforementioned difference between the two types of underwriters increased significantly in 2007 and 2008. However, the time trend shows approval times becoming shorter over time, thus indicating a marked improvement in the efficiency of the approval process.

We also compare the mean and median IPO approval times for the two categories of underwriters for the overall sample. Both are longer for the IPOs underwritten by underwriters associated with violations, and the differences are statistically significant at the 1% level (see Table 11, Panel A). We also compare the approval times for IPOs underwritten by violation-associated underwriters before and after those violations were committed, and find a significant difference between both the mean and the median (see Table 11, Panel B). Overall, there is evidence to suggest that the IPO application processing time is longer for IPOs underwritten by underwriters associated with violations.

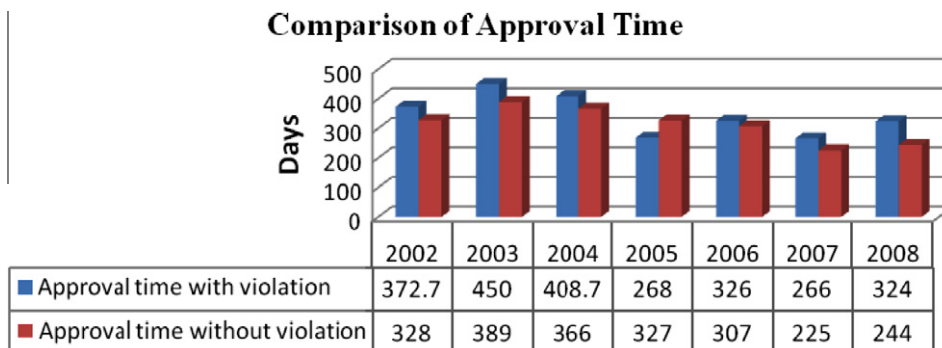


Fig. 1. Comparison of approval time.

**Table 11**  
Comparison of approval time.

	N	Mean	T	Pr >  t	Median	Z	Pr >  z
<i>Panel A: Comparison of approval times for two categories of underwriters</i>							
Approval time without violation	124	310	-3.33	0.0013	296	-3.071	0.002
Approval time with violation	58	377			377		
<i>Panel B: Comparison of approval times before and after violations</i>							
Approval time before violation	44	308	-2.63	0.010	288.5	-2.625	0.010
Approval time after violation	58	377			377		

**Table 12**  
Impact on approval times.

	(1) Applytime	(2) Applytime	(3) Applytime
Punish_after	54.120*** (2.80)	78.580*** (3.42)	76.080*** (3.23)
Large		-35.690** (-2.01)	-29.720 (-1.60)
State		21.950 (1.16)	21.230 (1.10)
Lnasset		2.374 (0.36)	-1.077 (-0.15)
Roe			-1.282 (-0.51)
Lev			-2.034 (-1.33)
Growth			0.336 (0.37)
Yeardummies	Yes	Yes	Yes
Industrydummies	Yes	Yes	Yes
Intercept	269.30*** (9.80)	199.90 (1.22)	287.40 (1.58)
N	182	150	150
Adj. R <sup>2</sup>	0.364	0.374	0.369

t Statistics are in parentheses.

\*\* p < 0.05.

\*\*\* p < 0.01.

To control for other factors that may affect the IPO approval process, we carry out further multivariate analysis based on model III:

$$\text{Applytime} = \beta_0 + \beta_1 \text{Punish\_after} + \beta_2 \text{Large} + \beta_3 \text{State} + \beta_4 \text{Lnasset} + \beta_5 \text{Roe} + \beta_6 \text{Lev} + \beta_7 \text{Growth} + \text{Yeardummies} + \text{Industrydummies} + \varepsilon \quad (3)$$

In this multivariate regression, approval time (Applytime) is the dependent variable. It is measured as the time gap between approval at the shareholder meeting and the signing date of the prospectus. We also control for underwriter size as a measure of underwriter ability. We expect a shorter approval time for IPOs underwritten by large underwriters. We further control for a number of firm characteristics, including size, profitability, financial leverage and growth. Finally, we distinguish between companies underwritten by underwriters associated with violations from other companies by the Punish\_after variable, and adopt the difference-in-difference method to run the regression for the 2002–2008 period. The results are tabulated in Table 12.

From these regression results, we can see that there is a positive coefficient on Punish\_after, which suggests that the approval time for IPOs underwritten by underwriters associated with violations is longer than that for other IPOs. This result is robust to controls for underwriter size and firm characteristics. Consistent with our prediction, the larger the underwriter, the shorter the approval time.

The average approval time for the IPOs of companies underwritten by underwriters associated with violations is about 70 days longer than that for other firms. This longer approval time potentially serves as an implicit penalty to underwriters involved with violations and may adversely affect their market share. Firms that are anxious to go public may turn to underwriters without violations to avoid any possible delays. We thus conclude that the Chinese government imposes an implicit penalty on underwriters associated with violations and this penalty plays an important disciplinary role.

## 8. Conclusion

This study investigates the impact of client firm violations on the market share of underwriters involved in the client firm's IPO. We show that client firm violations can lead to a decline in market share for associated underwriters. To determine whether this decline is due to government regulation/penalties or to market selection, we further analyze the underpricing of IPOs underwritten by underwriters associated with a violation and the market reaction of other listed firms underwritten by the same underwriter upon discovery of the violations. We find no significant impact in either situation. We thus conclude that the decline in underwriters' market share is most likely due to implicit government regulation. The CSRC may



not punish underwriters associated with violations of its rules in a formal and direct way. Instead, it employs a number of “hidden” regulatory instruments to penalize them, such as the imposition of stricter criteria during the approval process and extending the time required for approval. The market mechanism in transition economies is usually incomplete and inefficient, and government regulations thus play an important role. By imposing implicit penalties on underwriters, the CSRC can convey supervision information to the market, thereby encouraging underwriters to provide due diligence, improving the quality of listed companies and promoting the healthy development of the securities market.

One limitation of this study must be acknowledged. Our sample size is relatively small, which may potentially bias our results. They should thus be interpreted with caution.

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