

## **The Impact of Clients' Alleged Financial Reporting Fraud on Underwriter Reputation**

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### **Abstract**

This paper examines underwriter reputation loss by using a sample of investment banks that have served corporate clients prior to the discovery of clients' alleged financial reporting fraud. The results indicate that underwriters lose reputation upon the filing of lawsuits against their clients. The magnitude of reputation loss is greater for clients causing larger recent dollar losses to investors, hiding misdemeanors longer, and for the IPO clients with larger weights in the underwriters' portfolios. As the number of clients being sued increases, an underwriter loses credibility in certification, and the market penalizes the underwriter more severely. However, underwriters can avoid severe market discipline by diversifying their underwriting activities. Besides, we find little evidence that the market disciplines entrant commercial banks as underwriters who also diversify across traditional banking business.

## 1. Introduction

Financial reporting fraud has received tremendous press and public attention in recent years. High profile accounting fraud cases, such as WorldCom Inc., wiped out a stock that had been worth about \$185 billion at its peak in 1999.<sup>1</sup> In one of the largest class-action settlements ever, Citigroup Inc. agreed to pay \$2.65 billion to settle a suit brought by WorldCom investors. The lawsuit alleges that Citigroup and other investment banks didn't conduct adequate due diligence before bringing WorldCom bonds to the market in May 2000 and May 2001. Besides Citigroup, the defendants include J.P. Morgan Chase & Co., Deutsche Bank AG and Bank of American Corp.<sup>2</sup> Although, the negative stock price reactions to the disclosures of wrongdoings are well documented for reporting firms (see, for example, Kellogg (1984); Karpoff and Lott (1993); Gerety and Lehn (1997)), the impact of clients' financial scandals on their underwriters' reputations remains to be examined.

If an underwriter mis-certifies a client and raises capital for a non-meritorious project, investors may suffer losses, as evidently demonstrated by the stock market crash since the beginning of 2000, and the failure of many high profile giant firms.<sup>3</sup> Capital markets may discipline the underwriters that misrepresent their clients either due to incompetence or because of intentionally fraudulent collusion. In this study, we examine the discipline mechanism of stock price reaction. The reputation loss of an underwriter should be translated into its lower stock price, which indicates the potential revenue loss in the future and the possible legal liability

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<sup>1</sup> "MCI to State Fraud Was \$11 Billion; Final Restatement to Grow By Billions from Reversals in Accounting Practices," Wall Street Journal, Mar 12, 2004, p. A3.

<sup>2</sup> "Citigroup Will Pay \$2.65 Billion To Settle WorldCom Investor Suit", Wall Street Journal, May 11, 2004, p. A1.

<sup>3</sup> See Chemmanur and Fulghieri (1994) for a theoretical exposition of underwriter reputation, issuing firm quality, and security price.

in present value.<sup>4</sup> We test these negative underwriters' stock prices reactions to clients' alleged financial reporting fraud as the market discipline hypothesis.

The market's ability to discipline financial intermediaries becomes increasingly important to regulators due to the integration of financial services in the decade of 1990s, which poses tremendous new challenges to policy makers. In addition, related to the third pillar of Basel II, market price information is considered a potentially important regulatory tool that complements the first two pillars.<sup>5</sup> There is extensive literature examining market discipline on commercial banking activities.<sup>6</sup> To our best knowledge, though, ours is the first paper examining such an issue for underwriters. The enactment of the Gramm-Leach-Bliley Act in 1999, which permits combining commercial banking, investment banking, and insurance within a financial holding company, makes this paper especially timely. Because we also analyze if there is a difference between the market reactions to entrant commercial banks' and to incumbent investment banks' mis-certification, it fills a significant void in the bank regulation literature.

We study a sample of industrial firms that are sued in securities class actions for alleged financial reporting fraud during 1996 to 2002. We identified the underwriters that served these clients in bond or equity offerings within the 5-year period prior to the class period ending date. We also analyze separately the initial public offering underwriters. In most of the lawsuits, the class period ending date represents the time of wrongdoing discovery or the announcement of radically unfavorable financial information. Therefore, we focus our analysis on the time periods surrounding this event date. The second important event date is the lawsuit filing date.

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<sup>4</sup> In an effort to partition the effects of reputation loss and lawsuit liability, we hand collected the detailed lawsuit information and identified if an underwriter was sued along with its client.

<sup>5</sup> The new Basel Capital Accord (also known as Basel II) that provides capital and risk management guidelines to virtually all commercial banks with extensive global operations consists of three pillars: (1) minimum capital requirements, (2) supervisory review of capital adequacy, and (3) public disclosure and market discipline. See the web site of Bank for International Settlements (<http://www.bis.org/index.htm>) for more information on Basel II.

<sup>6</sup> For an excellent review on this subject, see Flannery (1998).

The unfortunate news of firms' failure may not indicate any wrongdoings. However, a lawsuit filing greatly increases the probability that firms have engaged in unlawful misconducts. In this case, the failure of underwriters' screening is more evident.

Our results indicate that underwriters lose reputation capital when their clients are sued for financial reporting fraud.<sup>7</sup> However, the significant negative stock reactions cluster in the later part of our sample period and only upon lawsuit filing. There is little evidence of market reaction on the class period ending date, which indicates that the market does not penalize underwriters just because the clients fail. It reacts to the stronger signal of a lawsuit filing where the probability of wrongdoings is higher. Besides, prior to the stock market crash in 2000, there is little evidence that the market reacts to the events considered in this paper. These findings indicate that the extent of market discipline depends on the overall market sentiment. The interaction between market discipline and overall market condition may complicate further the usage of market price information as a regulatory tool.

Upon the lawsuit filing, the mean three-day cumulative market-adjusted abnormal return (CAR) for underwriters is  $-0.36\%$ . This is equivalent to \$16 million of underwriters' market value loss for an average underwriter size. This number corresponds to an average of \$1.4 billion of client's recent market value loss using a 3-day event window surrounding the class period ending date. All the numbers are significantly different from 0. In particular, during years 2001 and 2002 the negative three-day CARs for underwriters are highly significant with the numbers of  $-1.14\%$  and  $-0.6\%$ , respectively. The findings are consistent with the market discipline hypothesis.

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<sup>7</sup> The control for potential lawsuit liabilities of underwriters is not significant in the multivariate analysis, although it is significantly negative in the univariate test.

The extent of discipline is heterogeneous. Further analysis regarding the nature of market discipline shows that the magnitude of reputation loss is smaller for investment banks diversifying their underwriting businesses across industries. The stock market reacts more negatively if investors suffer more recent dollar damages due to issuing firms' wrongdoings, if clients can hide their misconducts longer, and if an issuing firm has a larger portfolio weight as an IPO client. As the number of clients being sued increases, an underwriter loses credibility in certification, and the market penalizes the underwriter more severely. The above findings are mainly driven by the stock price reactions for incumbent investment banks. We find little evidence that the market disciplines entrant commercial banks in a systematic way because they have broader banking businesses than most of the incumbent investment banks.

The rest of the paper is organized as follows. Section 2 discusses the determinants of market discipline and underwriter reputation loss. It also reviews the client-intermediary relationship literature. Section 3 describes the sample selection and event study method. Section 4 presents the results of market discipline and underwriter reputation loss. Section 5 concludes.

## **2. Market Discipline, Underwriter Reputation, and Client-intermediary Relationship**

### *2.1. Market reaction and corporate fraud*

Studies on corporate wrongdoing show that corporate fraud has a significant negative impact on shareholder wealth. Kellogg (1984) reports significant price declines when fraudulent misstatements are uncovered. Similarly, Karpoff and Lott (1993) show that frauds are associated with decreases in firm values and earnings. More recent studies on corporate illegalities also find strong negative stock price reactions to the announcement of financial reporting fraud. For example, Gerety and Lehn (1997) examine a sample of 62 firms charged with financial disclosure violations (e.g., inflation of revenue or earnings, or shifting of revenue or earnings) by

SEC during the years 1981-1987. They find that the stock prices of firms involving financial reporting fraud performed 7.4% worse on average than their industry-matched firms. Palmrose, Richardson, and Scholz (2001) study the market reactions to earnings restatement announcements and find significantly negative mean abnormal returns of -9.2 percent. In summary, these studies support a negative significant stock market reaction to the announcement of restatements and alleged financial reporting fraud.

## 2.2. *Market discipline of financial intermediaries*

Similar to corporate wrongdoings, the failure of banks may be subject to market discipline. For example, Docking, Hirschey, and Jones (1997) document significantly negative stock reactions upon the announcement of increases in loan-loss reserves. Musumeci and Sinkey (1990) study the effect of international debt crisis. Besides equity returns, disciplinary actions by depositors (Goldberg and Hudgins, 2002; Billett, Garfinkel, and O'Neal, 1998), and by subordinated debt investors (Flannery and Sorescu, 1996; DeYoung, Flannery, Lang, and Sorescu, 2003; Evanoff and Wall, 2001) have been investigated to assess the appropriateness of using market information as a regulatory device.<sup>8</sup> However, the value and risk of banking firms may be difficult to access due to the opacity of their assets (Morgan, 2002). Even if there are significant security price reactions, there is little evidence that such market monitoring prompt managerial actions (Bliss and Flannery, 2002). More general issues involving the impacts of bank failures during Great Depression are discussed in Calomiris and Mason (2003a, 2003b).

The focus of our paper is on investment banking rather than traditional commercial banking activities. The gradual repeal of the Glass-Steagall Act during the decade of 1990s, however, makes the topic on the impact of this expanded banking power indispensable among

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<sup>8</sup> Gorton and Santomero (1990) provide a note that shows bank liabilities cannot be described as a linear, monotonic function of risk. In addition, bank regulation affects the pricing of risk of such debt instruments. Therefore, simple

the banking literature. Kanatas and Qi (2003) analyze theoretically the economics of combined lending and underwriting. They conclude that market power may provide commercial banks less incentives to innovate and incur underwriting efforts than investment banks.<sup>9</sup> The complex nature of financial holding companies due to the integration of commercial and investment banking makes the task of control and monitoring by regulators much more challenging.

Investors' reactions to events in underwriting at the holding company level demonstrate the effect of stand-alone activities on the conglomerate firms. They can shed some light on the impact of banks' newly expanded investment banking activities on the banks as a whole. It is unclear, however, how the market may react to commercial banks' mis-certification relative to that of investment banks. The less underwriting efforts of commercial banks contended by Kanatas and Qi (2003) indicates a less severe market penalty on commercial banks than on investment banks due to less disappointment. Besides, the scope economy of combined lending and underwriting means that commercial banks are more diversified than investment banks. They can, thus, absorb more negative impact from their clients, which also indicates less market reactions. However, the benefits of universal banking – information advantages and flexible financing – predict more market discipline because the belief of greater certification abilities causes greater disappointments and negative surprises. Therefore, we also examine if the market reactions differ between investment banks and commercial banks.

### 2.3. *Client-intermediary relationship*

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regressions are not likely to adequately address the relationship between the value of debt and underlying risk.  
<sup>9</sup> See also Song (2003a), which empirically examines the differences between investment banks and commercial banks as underwriters at the co-manager level. The participation of commercial banks as co-managers in an investment bank lead syndicate can enhance underwriting services due to the information advantages and the flexible financing opportunity (choice between bank loans and public debt) of commercial banks. On the other hand, the reputation of a lead investment bank can mitigate the conflicts of interest of a commercial bank when a client also borrows from the commercial bank co-manager.

Relationship is a keyword in the financial industry. It indicates ongoing interactions between parties for information exchange and the willingness to participate. For example, Diamond (1991) theoretically proposes a reputation-building model for borrowing firms and shows that bank monitoring provides a certification function for firms to raise public capital. Empirical findings show that the renewal of loans by lenders provides a positive signal about the borrowers. This sends a message to the capital markets that the borrowing firms are good and sound (see James, 1987). Datta, Iskandar-Datta, and Patel (1999) show similar results. They find that the existence of bank debt lowers the net yields of bonds issued by the firm's making debt IPOs (first debt issues). Billett, Flannery, and Garfinkel (1995) find that lenders with higher credit ratings are related to larger abnormal borrower returns upon loan announcements.

Similar to lending, underwriters provide certification when they help clients raise funds in the capital markets. The theoretical work by Titman and Trueman (1986) and Chemmanur and Fulghieri (1994) shows that underwriters with better information technology tend to develop a better reputation and underwrite for higher quality firms, which increases the securities prices clients receive. The role of underwriters as certifiers of issuing firms has been documented in several empirical studies (Beatty and Ritter, 1986; Carter, Dark, and Singh, 1998).

The aforementioned studies focus on what intermediaries may do for their clients. Few touch the issues regarding how clients affect their intermediaries, in particular, underwriters.<sup>10</sup> In addition, the nature of market discipline driven by false certification deserves further investigation to enhance the knowledge regarding the overall management of financial system.

#### 2.4. *Determinants of market reactions and variable definitions*

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<sup>10</sup> See Dahiya, Saunders, and Srinivasan (2003) for the study of wealth effects on lead lending banks when their borrowers suffer financial distress.

We test a market discipline hypothesis that the market reacts negatively to the information of clients' alleged financial reporting fraud and penalize underwriters for mis-certification. However, sorting out the failed firms due to misconducts from the unfortunate clients because risky projects do not work out is a very challenging task. Investors may believe that these questionable clients as honest failures and not react to such events.

We view underwriting activities like a portfolio. A diversified portfolio reduces the effect of idiosyncratic risk associated with an individual client. We construct a Herfindahl index to measure diversification of underwriting activities across industry segments based on two-digit SIC codes. The index for bond market is the sum of square of underwriting portfolio weights in industries. The portfolio weight in bond underwriting is yearly bond issue amounts underwritten in an industry by an underwriter divided by total bond amounts engaged by the same underwriter during the same period. We compose the index for bond and equity markets separately because the market structures of bond and equity underwriting are quite different. Most bond underwriters are also equity underwriters, but not the reverse. So we use a combined Herfindahl index, if the underwriter conducts business in equity underwriting, then industry diversification is the index in equity market, otherwise, it is the index in bond market.<sup>11</sup> We also control for the size of underwriters by using the market values of underwriters.

Another set of variables measure the relative importance of clients to underwriters, and vice versa. The larger the weight of a client in an underwriter's portfolio, the more important the client is to the underwriter. In the event of mis-certifying the client, the consequence can be more severe because the loss of a big client and thus larger future revenue. Conversely, if an underwriter has a larger weight in the client's underwriter relationships, then it should have a

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<sup>11</sup> We construct an alternative Herfindahl index using bond market first then equity market. We also use the number of issues rather than the dollar amounts to construct the Herfindahl index. However, the results are robust to

greater responsibility for the failure of screening and may suffer more reputation loss. The number of underwriter relationships is used to examine the ability of market to pin point the responsible underwriter. A high number of underwriter relationships can reduce the impact on individual underwriters in a group and makes the market discipline less effective.<sup>12</sup> We analyze IPO clients separately because they have more information asymmetry problem. Therefore, there is a greater reliance on underwriter's reputation. In the case of mis-certification, the penalty on underwriters should be larger.

The magnitude of damages in recent market crash is unbearable for many investors. The greater the damages, the more severe the market should penalize the underwriter. We measure the firm market value loss during the class period plus one day following the class period ending date as a proxy for investor damages. Clients' three-day CARs (-1, 0, 1) surrounding class period ending day and the market value of clients 60 trading days prior to the end of class period are also examined for the same reason. Besides, we use the interaction of clients' three-day CARs and firm value as a proxy for recent firm value loss.

In addition to the analysis of the difference between commercial and investment banks, which may have different reputations in underwriting, we examine if the market reacts more to underwriters with better reputations (use market share as a proxy following the work by Megginson and Weiss (1991)). More reputable underwriters may cause greater disappointments in the event of mis-certification. We also investigate the time lag between the beginning and the end of class period. The longer the time a client can hide information indicates less effective screening from the underwriter because the underwriter should have stopped working with the

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different specifications, so we drop the alternative measures.

<sup>12</sup> See Song (2003b) for the empirical analysis on how group reputations affect the incentives of individual underwriters in a group to serve clients that do not merit certification during the Internet bubble period.

firm before the unfavorable information becomes public knowledge. Furthermore, if the underwriter continues to tap capital from the markets, it could prolong the scandal.

Because some firms were sued multiple times, we control for the number of lawsuits for each client. As to underwriters, the first few incidences of client lawsuits may not cause any concerns. However, when more and more clients were discovered of wrongdoings, the market may react stronger to the cumulative events. Therefore, we numbered the observations for each underwriter chronologically to control for the sequence of client lawsuits. Detailed variable definitions are listed in Table 1.

### **3. Sample Description and Event Study Methods**

#### *3.1. Sample*

Corporate clients sued in federal securities fraud class actions during 1996-2002 (post-PSLRA) are identified from the web site of the Stanford Securities Class Action Clearinghouse (<http://securities.stanford.edu>).<sup>13</sup> Therefore, the sample is within the same regime of securities litigation requirement. We focus on the suits that are related to financial reporting fraud because part of underwriters' job is to verify the true financial condition of client firms and to screen these securities issuers for investors.

This study uses the class period ending date cited in the client's securities fraud lawsuits as the event day to identify the underwriters having served in client's nonconvertible bond or equity issuances within the prior 5-year period. Class period ending date is the time when the information regarding a client's irregular behavior is uncovered. We also identify issuers' IPO underwriters. The information on underwriters and securities offers is taken from the New

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<sup>13</sup> Congress passed the Private Securities Litigation Reform Act (PSLRA) in 1995 to discourage non-meritorious securities fraud class actions. Johnson, Nelson, and Pritchard (2002) study the effect of PSLRA and conclude that PSLRA discourages frivolous securities fraud lawsuits. See Pritchard and Ferris (2001), for the study of the relations between firm characteristics and litigation.

Issues Database in SDC Platinum (Thomson Financial Securities Data). We analyze stock returns around both the class period ending date and the lawsuit filing date. The underwriter sample is comprised of investment banks with stock prices available in the daily return database of Center for Research in Security Prices (CRSP). If an underwriter is a subsidiary without its own traded stock, we use the parent holding company's stock price information if the first digit of parent's primary SIC code is 6. Thus, the main business of these firms is financial services.

There are many high profile mergers between underwriters in the 1990s, especially from 1997 to 2000. Song and Goldberg (2003) provide a list of merging underwriters and discussions of these mergers. We also search the Worldwide Merger and Acquisitions database of SDC Platinum for more recent merger transactions and less prominent underwriters. Appendix A reports a list of mergers between financial institutions with at least one entity included in our final sample during 1996 to 2002 based on the effective merger date. Note that the list is different from that in Appendix B reported by Corwin and Schultz (2003) because, in our study, we focus on publicly traded underwriters and the time period is also different. If an event date is following the merger effective date, we use the merged underwriter's stock returns in our analysis. Otherwise, we use the original underwriter's returns. We also use the announcement date of mergers to examine if these activities contaminate our event study results. Controlling for these merger events does not affect our results. Therefore, we drop these analyses.

Table 2 reports the frequency distribution of all sued firms with stock price information and of firms with underwriter information. Although the number of firms shrinks from 679 to 559, the distributions across years are quite similar. More than 50% of the sample occurs during the last three years (2000-2002). Panel B, Table 2 shows that most of the firms were sued only once in our final sample, 42 were sued twice and 3 were sued three times.

### 3.2. *Event study method*

We use the event study technique to measure the market reactions to alleged financial reporting fraud. Both market-adjusted and market model abnormal returns (AR) are calculated with the CRSP equally weighted index as a proxy for the market return. Because the findings are similar for both types of abnormal returns, we report the market-adjusted ARs. The OLS regression estimation period for market model is 60 trading days that ends 26 trading days before the event date. If the market is closed on the event day, the following day is used in the analysis. Both two-day (-1, 0) and three-day (-1, 0, 1) event windows are examined. It appears that the market continues to react on day 1. Therefore, we focus on the three-day analysis.

Panel A, Table 3, reports, by year, the stock price reactions of sued firms surrounding the allegation of financial reporting fraud (the class period ending date). The significantly negative cumulative abnormal returns (CARs), which are the sum of ARs during the 3-day event window, confirm the findings of prior studies. We do not observe increasing trend in Panel A. The average 3-day CARs is -27.7% in Panel B.

Table 4 presents the estimated sued firm value losses. Panel A shows that, on average, sued firms lose nearly \$3 billion during the class period. It corresponds to 46% drop in firm value based on the buy and hold returns during the class period plus one day (not reported). The magnitude of loss appears to increase over time. Prior to year 2000, the mean losses are less than \$1.5 billion. However, these numbers increase dramatically for years 2000 to 2002. All mean losses are above \$4 billion. Eight firms lost more than \$50 billion during this period. They are AT&T Corp., Bristol Myers Squibb Co., Johnson & Johnson, Lucent Technologies Inc., Nortel Networks Corp., Oracle Corp., Procter & Gamble Co, and WorldCom Group. Panel B reports

that mean (median) recent firm value loss is \$1.36 (0.15) billion surrounding the end of class period. Similar increased pattern is observed in Panel B.

### 3.3. *Descriptive Statistics*

Summary statistics for sued firms and event time intervals are reported in Table 5. The mean (median) market value of sued firms is \$7.5 (0.74) billion on the class period starting day. We also measure firm values at 60 trading days prior to the end of class period. The numbers are similar. Firms with public debt access appear to be much larger, the value is \$33.5 (11.5) billion in mean (median).

Mean frequency of bond issuance within the 5-year period prior to the allegation of financial reporting fraud is 6.7. The median is 3. The average total issue amount during the same period is \$ 1.9 billion with an average number of underwriter relationships of 3.2. Although there are more firms issuing equity within the 5-year period, the mean frequency is 1.7 with mean total amount of \$251.1 million. The average IPO issue amount is \$110.4 million. For all issuers, the mean (median) number of prior underwriter relationships is 1.5 (1). Among the 481 firms that IPO underwriters can be identified, there are 51 firms do not have any underwriter relationships within the 5-year period prior to the class period ending date and 20 of them conduct their IPOs prior to 1991. Excluding these 51 IPOs does not change the main conclusions of this paper but the findings are less significant for the full sample. However, the subsample analysis for investment banks remains robust.

Table 5 also reports three important time intervals. On average, the beginning of class period to the lawsuit filing is 434.2 days. The median value is 357.5 days, slightly less than 1 year. The start of class period represents the beginning of fraudulent behavior documented in the lawsuit. The end of class period is the time that the misconduct is revealed. The median (mean)

days of class period are 273 (338.3). The average days between the date of class period ending and that of lawsuits filing are 96. The median value is 29 days.

Information on underwriters is reported in Table 6. The mean (median) market value of sued firms' underwriters is about \$44.6 (30.5) billion. The number of observations for underwriters is larger than that of sued firms because of multiple underwriter relationships. The table uses firm-underwriter observations. The mean (median) underwriter reputation in bond underwriting measured as issue market share in percentage is 10.0 (10.4). The numbers in equity underwriting are 6.0 in mean and 5.46 in median. The mean (median) Herfindahl index for industry diversification is 0.20 (0.16). The larger the number, the less the underwriter is diversifying across industry segments.

The importance of a client to an underwriter during the year prior to the event date is presented by the portfolio weight – client (-1 yr). The mean value is 4.0 percent. The median is 1.5 percent. The average portfolio weight for IPO client is 3.5 percent. Since most of the clients only have one underwriter relationship within the 5-year period prior to the event date, the median value of underwriter importance to client (-1 yr) is 100 percent. The average number is 76.1 percent.

We also construct the portfolio weights using different time intervals (within the 5-year, 4-year, and so forth) and found only the measure during the immediate year prior to the class action ending date have some marginal explanatory power in determining market reactions but it is still very weak and mostly insignificant. Because the analysis is insensitive to the timing of security issuance prior to lawsuits filing, so we drop other weights with time intervals longer than one year in the analysis.

Table 6 also compares the differences between commercial and investment banks. Commercial banks are much larger than investment banks in firm size, but have smaller issue market shares in both bond and equity underwriting since they are entrants. Commercial banks are also less diversified than investment banks in underwriting activities. However, these banks are the largest banks, they all have huge traditional banking operation. Median commercial bank clients also have larger weights in the underwriting portfolios than median investment bank clients, but there is no difference in the measure for underwriter importance to client.

#### **4. Underwriter Reputation Loss**

Table 7 reports the results of market reactions for underwriters using market-adjusted abnormal returns surrounding the date of lawsuit filing. We also investigate the market reactions on the class period ending date (results not reported). However, in general, there is little evidence of underwriters' stock reaction upon the discovery of clients' potential misconducts. Instead, investors penalize underwriters when lawsuits are formally filed. Therefore, we focus only on the lawsuit filing date. We analyze both two- and three-day CARs and find that three-day CARs are more significant.<sup>14</sup> Appendix B reports the results of two-day CARs. It appears that the market continue to react negatively one day following the lawsuit filing with the exception in 2000. In 2000, market reverses the reaction from significantly negative to insignificant. Therefore, we focus on the findings of three-day CARs. We also use both market-adjusted and market model analyses. The findings using market model analysis are less significant but similar to those using market-adjusted analysis. Thus, we report only one set of findings, i.e., market-adjusted CARs. The results of market model CARs are reported in Appendix C.

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<sup>14</sup> We also examine the market reactions for longer event windows. However, there is little evidence that the market reacts to lawsuit filing during the month prior to the event date.

Panel A, Table 7, shows that among the 7 years, the market reacts significantly negatively only in 1998, 2001, and 2002. The average three-day CARs are  $-0.36\%$  for all years. The median is more significantly negative with a value of  $-0.43\%$ . Panel B demonstrates that the market reacts more negatively when the clients are sued again than the first time lawsuits. However, the differences between CARs of first lawsuits and those of second lawsuits are insignificant.

Table 7 also reports the subsample analysis for commercial and investment banks. In general, the reactions for all underwriters are attributed to investment banks. Most of the commercial bank results are insignificant. Only in 1997, the CARs of commercial banks are significantly negative in both mean and median. However, there are only 8 observations associated with this finding.

Table 8 presents individual underwriters' stock price reactions based on the manager parent company names reported in SDC Platinum. Note that SDC Platinum does not always use the ultimate parent company name. For example, the parent company for RBC Capital Markets is Royal Bank of Canada and that for Credit Suisse First Boston is Credit Suisse Group. We classify if an underwriter is a financial holding company based on the list posted at the web site of Federal Reserve Board as of February 8, 2002. There are 15 FHC's because the surviving parent company of Interstate/Johnson Lane Inc and JW Charles Securities Inc is Wachovia Corp. The status of these companies changes over time, so the control for commercial banks or investment banks is based on these underwriters' status at the time of lawsuit filing. Most of individual underwriters' CARs are not significantly different from zero partly due to small sample sizes. Only Deutsche Bank AG, Merrill Lynch & Co Inc, and RBC Capital Markets have significantly negative CARs.

Table 9 reports market reactions results by the type of allegations. The majority of observation (551 out of 714) is sued for general financial reporting fraud. Some of these firms are also sued for artificially inflating the company's stock price. For example, investors of Ford Motor Company allege that its officers issued a series of false and misleading statements during the class period concerning the quality and safety of its products and assert that these misleading statements and material omissions artificially inflated the price of the company's stock during the class period. There is only one lawsuit filing against WorldCom is related to inflate bond price, which is also alleged of using improper accounting practice. In the case of AT&T Wireless Group tracking stock issuance, AT&T and its underwriters are sued jointly for failing to disclose ongoing business problems at AT&T Wireless in the Prospectus. The average market reactions for misstatement in IPO or SEO and for underwriters also sued in the class actions are both significantly negative. However, those for insider trading, inadequate internal control, and merger related lawsuits are insignificant.

Table 10 presents the results of the determinants of stock price reactions for underwriters. Because each underwriter may use similar underwriting technology to serve its clients, test inferences are based on robust standard errors of White (1980) while allowing observations to be correlated within underwriter. Panel A reports the results of three-day CARs for all underwriters.

Model (1), Panel A, shows that underwriters diversifying across industries can reduce the negative impact of clients' alleged financial reporting fraud.<sup>15</sup> The largest possible number for the industry concentration (Herfindahl index) is one, which means an underwriter only serves one industry. The smaller the number (approaching to 0), the more diversified is an underwriter.

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<sup>15</sup> See Boot and Schmeits (2000) for a theoretical analysis of the effectiveness of market discipline and the benefit of diversification in banking.

Therefore, the significant estimate of  $-3.1$  indicates that less diversification is associated with more negative CARs.

Despite the effect of diversification, the extent of market discipline is positively related to if the issuing firms are large IPO clients, days of class period intervals, and clients' recent firm value losses. IPO clients have greater informational asymmetry problems. In this case, underwriter reputation is more important in the certification process. Besides, an IPO underwriter is the first underwriter that brings a firm to the public market, thus, it may play a more prominent role in its client's intermediary relationship. In the event of false certification, the penalty should be more severe. In addition, a positive relation should be observed between market discipline and the duration that clients can hide information because the longer the time clients can cover up wrongdoings, the less effective is the underwriter's ongoing screening as client-intermediary relationships tend to be long term in nature. In addition, the estimates on numbered sequence of underwriter observations show that, as more and more clients are sued, the market questions more about the reputation of underwriters and penalizes underwriters more severely for the later lawsuits. The results are consistent with the market discipline hypothesis. However, the estimates on multiple underwriter relationships and if the underwriter is sued with the client are both insignificant. The latter is the variable that we use to partition the effect of lawsuit liability from that of underwriter reputation loss.

In Model (2), we examine if market reactions are stronger following 2000. The dummy variable indicating years 2001 and 2002 is significant. This confirms the univariate results mentioned earlier that market discipline depends on the overall market sentiment because the magnitude of clients' losses and the numbered sequence of observation for each underwriter are

also controlled for in the regression. Therefore, the more severe discipline is not only triggered by larger clients' losses and the sequence of the events but also the time period.

Panel B, Table 10 compares the differences between commercial and investment banks. It is obvious that the results of investment banks drive those in Panel A. In various robust checks, such as excluding IPO observations prior to 1990 or clients with the largest recent value losses in the top 5 percentiles, the findings for investment banks are qualitatively unchanged. Panel B also shows that the market does not systematically discipline commercial bank underwriters. The only estimate that is the same for both types of underwriters is on recent client value losses. These findings demonstrate that the efficacy of using market reactions to discipline commercial banks' underwriting activities is very limited. The low values of adjusted R-square in all models also indicate that one should be cautious when using market reactions as a regulatory tool.

## **5. Conclusions**

In this study, we investigate the impact of clients with alleged financial reporting fraud on their underwriters' reputation to enhance more understanding of the mechanism and management of financial system. In addition, the efficacy of market discipline as a regulatory tool gains more importance in recent years as financial intermediaries become increasingly complex. The enactment of Gramm-Leach-Bliley Act in 1999 allows the integration of various financial services within a financial holding company makes study of this sort very timely.

In general, we find that the market disciplines underwriters. However, the extent of reputation losses depends on many factors. The magnitude of market discipline is greater for clients causing larger recent dollar losses of investors, hiding misdemeanors longer, and for the IPO clients with larger weights in the underwriters' portfolios. As more and more clients being

sued, an indication of a serious problem in mis-certification, the market penalizes underwriters more severely. On the other hand, an underwriter can avoid severe market discipline by diversifying its underwriting activities across industries and reducing the impact of an individual client. However, most of these findings are attributable only to investment banks rather than to commercial banks.

The stock prices reactions of underwriters upon the discovery of clients' potentially fraudulent misconducts have important implications for policy makers, investors, and underwriters themselves. If the penalty is too small, then underwriters may not have enough incentive to keep their reputation capital at the socially optimal level. Policies that supplement market discipline should be in place to reinforce the lawful and ethical conduct of underwriters. If both market discipline and regulation cannot provide sufficient incentives, then investors should value the securities with more appropriate probability of wrongdoings and not blindly trust the system.

The results of investment bank analysis suggest that the discipline mechanism is indeed in place. Therefore, market information can be used for regulatory purpose. However, the findings of commercial bank analysis indicate that it should be applied cautiously. The disciplinary effect is limited because most of the largest financial intermediaries, such as commercial bank underwriters, are well diversified across different markets. The effectiveness of diversification greatly reduces the sensitivity of market discipline on a stand-alone activity. In addition, stock price reactions to underwriters' reputation losses also depend on the overall sentiment of the market, which may complicate the regulatory use of stock price information further.

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**Table 1**  
**List of variables**

Variable	Definition
Industry diversification – bond market or equity	Sum of square of (yearly amounts underwritten in an industry by an underwriter in bond underwriting/total amounts engaged by the underwriter in bond underwriting during the same period), i.e., the Herfindahl index. That for equity market is defined in the same manner. The value of 1 means no diversification across industry segments classified by the 2-digit SIC codes.
Industry diversification (both bond and equity markets)	Equals to “industry diversification – equity market” if underwriter engages in equity market; “industry diversification – bond market” otherwise.
Underwriting portfolio weight - client (-1 yr)	Amounts issued by a client within the 1-year period prior to the end of class period/yearly total amounts engaged by its underwriter*100
Underwriting portfolio weight - IPO client	Amounts of client’s IPO issue/yearly total amounts engaged by its underwriter*100
Underwriter importance to client (-1 yr)	Amounts underwritten by an underwriter within the 1-year period prior to the end of class period /total amounts issued by its client during the same period*100
Days of class period interval	Number of days between the start and the end of class period
Firm value losses during class period (\$billions)	Buy and hold returns during class period of sued firm multiplied by the market value of sued firm on the class period starting day
Recent firm value losses (surrounding class period ending date (\$billions))	Three-day (-1, 0, 1) market adjusted CAR of sued firm around class period ending day multiplied by the market value of sued firm 60 trading days prior to class period ending day
Sued firms’ two-day market-adjusted CARs (%)	The sum of the two-day (-1, 0) CAR surrounding class period ending day
Ln(sued firm’s market value)	Log(1+market value of sued firm 60 trading days prior to class period ending day in \$MM)
Ln(underwriter’s market value)	Log(1+market value of underwriter 60 trading days prior to lawsuit filing day in \$MM)
The numbered sequence of underwriter observations based on client’s lawsuit filing date	The number equals 1 if the observation is the first incidence that an underwriter appears in the sample based on client’s lawsuit filing date, equals 2 if it is the second incidence, and so forth.
Underwriter reputation - bond (equity) market	Yearly issue share of underwriter in bond (equity) underwriting market during the calendar year prior to the class period ending year.
Number of underwriter relationships (-1 yr)	Number of underwriters employed by sued firms in bond or equity market within the one-year period prior to class period ending day
Commercial bank underwriter (indicator var.)	Equals 1 if the underwriter is a subsidiary of a commercial bank or a financial holding company, 0 otherwise.
Post 2000 (indicator variable)	Equals 1 if the lawsuit filing date is in years 2001 or 2002, 0 otherwise.
Year 1997 (indicator variable)	Yearly dummy for 1997. Other yearly dummies are defined similarly.

**Table 2**  
**Frequency distribution of sample**

The sample contains non-financial firms that were subject to securities fraud class actions during 1996-2002 due to alleged financial reporting fraud. The heading “All sued firms” reports the sued securities issuing firms with stock price information. Panel A (B) reports the frequency by year (by client’s number of lawsuits).

	<b>All sued firms</b>		<b>Sued firms with underwriter stock information</b>	
	<b>Obs.</b>	<b>%</b>	<b>Obs.</b>	<b>%</b>
<b>Panel A. By year</b>				
1996	37	5.45	25	4.47
1997	64	9.43	49	8.77
1998	115	16.94	91	16.28
1999	101	14.87	85	15.21
2000	114	16.79	97	17.35
2001	106	15.61	84	15.03
2002	142	20.91	128	22.9
<b>Panel B. By client’s number of lawsuits</b>				
1	619	91.16	514	91.95
2	52	7.66	42	7.51
3	5	0.74	3	0.54
4	2	0.29		
5	1	0.15		
Total	679	100	559	100

**Table 3**  
**Sued firms' stock price reactions surrounding the class period ending date**

This table reports the market-adjusted cumulative abnormal returns (CARs), which are the sum of the three-day abnormal returns surrounding the event day in excess of CRSP equal-weighted index. The three-day event window is (-1, 0, 1). Day 0 is the day that class period ends. The sample contains non-financial firms that were subject to securities fraud class actions during 1996-2002 due to alleged financial reporting fraud. Panel A (B) reports the frequency by year (by client's number of lawsuits). Mean and median are tested by *t*-test and Wilcoxon signed-rank test, respectively.

	<b>Obs.</b>	<b>Mean</b>	<b>Median</b>	<b>Min</b>	<b>Max</b>
<b>Panel A. By year (%)</b>					
1996	25	-29.9***	-33.6***	-61.3	14.2
1997	49	-20.9***	-19.8***	-77.8	23.4
1998	91	-27.7***	-27.7***	-96.7	19.0
1999	85	-34.4***	-35.1***	-96.2	22.9
2000	97	-32.8***	-35.6***	-96.7	216.6
2001	84	-20.8***	-15.7***	-125.2	52.9
2002	128	-26.0***	-20.9***	-102.1	34.9
<b>Panel B. By client's number of lawsuits (%)</b>					
1	514	-28.0***	-27.9***	-125.2	216.6
2	42	-26.0***	-20.4***	-85.0	22.9
3	3	4.2	-5.9	-19.4	37.8
Total	559	-27.7***	-26.9***	-125.2	216.6

\*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% levels, respectively.

**Table 4**  
**Sued firms' market value losses**

Panel A reports sued firm value losses (cumulative dollar return based on the market value at the beginning of class period) during class period plus one day following the end of class period in \$billions. Panel B reports the recent sued firm value losses in \$billions. It is defined as three-day market-adjusted cumulative abnormal return (CAR) multiplied by sued firm's market value 60 trading days prior to class period ending day. Market return is CRSP equal-weighted index. The sample contains non-financial firms that were subject to securities fraud class actions during 1996-2002 due to alleged financial reporting fraud. The three-day event window is (-1, 0, 1). Day 0 is the day that class period ends. Mean and median are tested by *t*-test and Wilcoxon signed-rank test, respectively.

Year	Obs.	Mean	Median	Min	Max
<b>Panel A. Firm value losses during class period (\$billions)</b>					
1996	24	-0.34***	-0.13***	-1.92	0.05
1997	47	0.12	-0.20***	-4.81	17.27
1998	82	-0.45***	-0.19***	-5.47	3.21
1999	82	-1.43***	-0.23***	-22.75	1.58
2000	90	-4.36***	-0.36***	-134.90	1.14
2001	70	-4.66***	-0.82***	-75.58	12.52
2002	118	-5.60***	-0.80***	-137.09	5.06
Total	513	-2.99***	-0.30***	-137.09	17.27
<b>Panel B. Recent firm value losses surrounding the end of class period (\$billions)</b>					
1996	25	-0.29***	-0.13***	-1.32	0.03
1997	49	-0.33***	-0.12***	-5.29	1.09
1998	91	-0.61***	-0.10***	-13.42	0.35
1999	85	-1.15***	-0.18***	-17.68	1.12
2000	97	-2.33***	-0.22***	-47.48	1.44
2001	84	-2.05***	-0.12***	-44.03	1.82
2002	128	-1.47***	-0.20***	-26.31	3.14
Total	559	-1.36***	-0.15***	-47.48	3.14

\*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% levels, respectively.

**Table 5**  
**Summary statistics for sued firms' prior securities issuances and event time intervals**

The sample contains non-financial firms that were subject to securities fraud class actions during 1996-2002 due to alleged financial reporting fraud and with underwriter stock information. See Table 1 for variable definitions.

	<b>Obs.</b>	<b>Mean</b>	<b>Median</b>	<b>Min</b>	<b>Max</b>
Equity market value of sued firm on the class period starting day (\$Bn)	559	7.52	0.74	0	192.8
Equity market value of sued firm 60 trading days prior to class period ending day (\$Bn)	559	7.41	0.74	0.02	374.8
Sued firm market value of equity (\$Bn) - bond issuers	68	33.5	11.5	0.12	191.4
Number of bond issuance within the 5-yr period	68	6.7	3.0	1	59
Bond issuance in \$millions within the 5-yr period	68	1857.2	775.0	110	16052
Number of underwriter relationships within the 5-yr period - bond issuers	68	3.2	2.5	1	14
Number of equity issuance within the 5-yr period	447	1.7	1.0	1	7
Equity issuance in \$millions within the 5-yr period	447	251.1	112.2	5	4531.3
IPO issuance in \$millions	481	110.4	39.2	0.8	5661.3
Number of underwriter relationships within the 5-yr period - all issuers	559	1.5	1.0	0	14
Days between the start of class period and lawsuit filing	558	434.2	357.5	1	1843
Days of class period interval	558	338.3	273.0	0	1734
Days between the end of class period and lawsuit filing	559	95.7	29.0	0	878

**Table 6****Summary statistics for underwriter reputation, diversification, and underwriter-client ties**

The sample contains underwriters of non-financial firms that were subject to securities fraud class actions during 1996-2002 due to alleged financial reporting fraud. These underwriters have served the clients in bond or equity offerings within the 5-year period prior to the end of class period or in initial public offerings. The differences between commercial and investment banks in mean and median are tested by *t*-test and Wilcoxon test, respectively. The test significance is indicated under “Investment banks.” See Table 1 for variable definitions.

	All underwriters					Commercial banks			Investment banks		
	Obs.	Mean	Median	Min	Max	Obs.	Mean	Median	Obs.	Mean	Median
Underwriter market value of equity (\$Bn)	714	44.6	30.5	0.003	277.8	267	73.8	42.9	447	27.1***	24.3***
Underwriter reputation - bond market	509	10.01	10.41	0.09	18.04	135	9.28	10.66	374	10.27*	9.80**
Underwriter reputation - equity market	662	6.00	5.46	0.12	16.28	230	4.88	4.50	432	6.60***	6.21***
Industry diversification	696	0.20	0.16	0.07	1.0	256	0.2	0.2	440	0.19***	0.15***
Underwriting portfolio weight - client (-1 yr)	182	4.0	1.5	0.06	58.7	51	5.4	2.5	131	3.4	1.2**
Underwriting portfolio weight - IPO client	252	3.5	1.1	0.09	91	65	3.8	1.3	187	3.4	1.1**
Underwriter importance to client (-1 yr)	200	76.1	100	2.03	100	65	73.8	100.0	135	77.2	100.0

\*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% levels, respectively.

**Table 7**  
**Stock price reactions to underwriters' reputation losses surrounding the filing of lawsuits**

The sample contains underwriters of non-financial firms that were subject to securities fraud class actions during 1996-2002 due to alleged financial reporting fraud. These underwriters have served the clients in bond or equity offerings within the 5-year period prior to the end of class period or in initial public offerings. The three-day event window is (-1, 0, 1). Day 0 is the event day. Market-adjusted cumulative abnormal returns (CARs) are the sum of the daily returns surrounding the event day in excess of CRSP equal-weighted index. Panel A (B) reports the frequency by year (by client's number of lawsuits). Mean and median are tested by *t*-test and Wilcoxon sign-rank test, respectively.

	All underwriters					Commercial banks			Investment banks		
	Obs.	Mean	Median	Min	Max	Obs.	Mean	Median	Obs.	Mean	Median
<b>Panel A. By year</b>											
1996	26	1.35	-0.07	-6.55	22.42	1	-0.01	-0.01	25	1.41	-0.14
1997	52	0.48	0.02	-8.77	12.55	8	-1.23**	-1.55**	44	0.79	0.41
1998	100	-0.90*	-1.17**	-13.28	18.68	39	-0.73	-1.39*	61	-1.00	-0.83*
1999	101	0.33	0.08	-15.24	17.80	50	0.12	0.25	51	0.54	-0.07
2000	125	-0.12	-0.19	-12.34	16.47	44	-0.23	-0.13	81	-0.05	-0.27
2001	120	-1.14***	-0.51***	-12.84	8.63	42	-0.30	-0.18	78	-1.59***	-1.24***
2002	190	-0.60**	-0.70**	-24.98	10.71	83	-0.29	-0.43	107	-0.83***	-0.90***
<b>Panel B. By clients' number of lawsuits</b>											
1	648	-0.32*	-0.41***	-15.24	22.42	234	-0.24	-0.35	414	-0.37*	-0.50**
2	62	-1.07*	-0.88*	-24.98	9.71	31	-1.00	-0.71	31	-1.14*	-1.15**
3	4	3.39***	3.49*	2.23	4.37	2	3.27	3.27	2	3.52	3.52
Total	714	-0.36**	-0.43***	-24.98	22.42	267	-0.30	-0.33	447	-0.40*	-0.55***

\*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% levels, respectively.

**Table 8**  
**Market reactions to underwriters' reputation losses by underwriter**

The sample contains underwriters of non-financial firms that were subject to securities fraud class actions during 1996-2002 due to alleged financial reporting fraud. These underwriters have served the clients in bond or equity offerings within the 5-year period prior to the end of class period or in initial public offerings. The three-day event window is (-1, 0, 1). Day 0 is the lawsuit-filing day. Market-adjusted cumulative abnormal returns (CARs) are the sum of the daily returns surrounding the event day in excess of CRSP equal-weighted index. The underwriter names are based on the parent company names in New Issue database of SDC Platinum. FHC stands for financial holding company. If the surviving company is organized as a FHC as of February 8, 2002, then it is indicated by "Yes." Among the FHC underwriters, First Security Corp merged with Wells Fargo. The surviving parent company of Interstate/Johnson Lane Inc and JW Charles Securities Inc is Wachovia Corp. See Appendix A for the mergers and acquisitions of underwriters included in the final sample.

**Table 8 (Continued)**

	FHC	Obs.	Mean	Median	Min	Max
AG Edwards & Sons Inc	No	2	-0.3	-0.3	-1.0	0.5
Advest Group Inc	No	2	-7.3	-7.3	-9.4	-5.3
Banc of America Securities LLC	Yes	38	-0.6	-0.1	-12.2	7.7
Bear Stearns & Co Inc	No	25	-0.5	-0.7	-11.6	7.3
CIBC World Markets Inc	Yes	12	-0.1	-0.2	-4.5	4.7
Citigroup	Yes	69	0.1	-0.4	-8.0	13.0
Credit Suisse First Boston	Yes	73	0.3	-0.2	-25.0	16.5
Deutsche Bank AG	Yes	43	-0.8*	-1.0*	-8.6	4.3
First Albany	No	1	1.5	1.5	1.5	1.5
Wells Fargo Bank NA	Yes	1	-0.2	-0.2	-0.2	-0.2
FleetBoston Financial Corp	Yes	34	-0.7	-0.2	-8.2	7.9
Friedman Billings Ramsey Group	Yes	1	-15.2	-15.2	-15.2	-15.2
Goldman Sachs & Co	No	71	-0.4	-0.7	-8.3	8.1
Interstate/Johnson Lane Inc	Yes	1	0.0	0.0	0.0	0.0
JP Morgan	Yes	53	-0.5	-0.4	-8.8	11.9
JW Charles Securities Inc	Yes	2	3.6	3.6	-2.0	9.1
Jefferies & Co Inc	No	2	-5.6	-5.6	-6.9	-4.2
Keycorp/Society National Bank	Yes	1	-1.8	-1.8	-1.8	-1.8
Legg Mason Wood Walker	No	1	-3.8	-3.8	-3.8	-3.8
Lehman Brothers	No	43	0.3	-0.3	-8.2	17.8
Merrill Lynch & Co Inc	No	78	-0.9**	-0.8**	-12.8	10.7
Morgan Keegan Inc	Yes	4	0.9	1.3	-0.9	2.0
Morgan Stanley	No	102	-0.3	-0.3	-13.3	18.7
National Securities Corp (US)	No	3	-4.4	-3.1	-12.0	2.0
RBC Capital Markets	Yes	4	-4.8*	-4.7*	-8.4	-1.5
Raymond James Financial Inc	No	9	-2.2	-1.9	-9.2	3.7
Rodman & Renshaw Inc	No	2	11.1	11.1	-0.1	22.4
Royal Bank of Scotland Group	Yes	3	2.0	2.7	-1.3	4.4
UBS	Yes	24	0.3	0.3	-13.3	4.5
US Bancorp	Yes	7	0.6	-0.2	-5.0	5.8
Wachovia Corp	Yes	3	-1.7	-2.3	-3.6	0.9

\*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% levels, respectively.

**Table 9**  
**Market reactions to underwriters' reputation losses by type of allegation**

The sample contains underwriters of non-financial firms that were subject to securities fraud class actions during 1996-2002 due to alleged financial reporting fraud. These underwriters have served the clients in bond or equity offerings within the 5-year period prior to the end of class period or in initial public offerings. The three-day event window is (-1, 0, 1). Day 0 is the lawsuit-filing day. Market-adjusted cumulative abnormal returns (CARs) are the sum of the daily returns surrounding the event day in excess of CRSP equal-weighted index. The reasons for lawsuits are not mutually exclusive. Mean and median are tested by *t*-test and Wilcoxon sign-rank test, respectively.

	Obs.	Mean	Median	Min	Max
(1) General financial reporting fraud, such as false or misleading it business operation, prospect, financial condition	551	-0.42**	-0.43***	-24.98	18.68
(2) Artificially inflate stock price	329	-0.10	-0.44*	-11.95	22.42
(3) Inadequate internal control	5	-0.0001	0.0016	-3.38	4.80
(4) Inflate bonds/notes	1	-6.55	-6.55	-6.55	-6.55
(5) Misstatement & omissions in its IPO/SEO	55	-1.63***	-1.01***	-12.34	5.44
(6) Fail to disclose information about merger or acquisition	47	0.72	-0.16	-12.84	17.80
(7) Insider trading	114	0.08	-0.02	-13.27	16.47
(8) Underwriters are also sued in the class actions	47	-0.71*	-0.55*	-5.51	5.82

\*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% levels, respectively.

**Table 10****Determinants of underwriters' reputation loss surrounding lawsuits filing day**

The dependent variable is three-day market-adjusted cumulative abnormal returns (CARs) of underwriters. These underwriters have served the sued issuers in bond or equity offerings within the 5-year period or in initial public offerings prior to the end of class period. These issuers are non-financial firms that were subject to securities fraud class actions during 1996-2002 due to alleged financial reporting fraud. The three-day event window is (-1, 0, 1). Day 0 is the lawsuits filing day. Market-adjusted CARs are the sum of the daily returns surrounding the event day in excess of CRSP equal-weighted index. Panel A reports the regression results for all underwriters. Panel B reports the subsample comparison between commercial banks and investment banks. Test inferences are based on robust standard errors of White (1980) while allowing observations to be correlated within underwriter. See Table 1 for variable definitions.

**Table 10 (Continued)**

	(1)		(2)	
	Estimate	<i>t</i> -stat	Estimate	<i>t</i> -stat
<b>Panel A. All underwriters</b>				
Industry diversification – bond and equity	-3.10	-1.72 <sup>*</sup>	-2.56	-1.53
Underwriter reputation - bond market	0.04	1.05	0.05	1.21
Underwriter reputation - equity market	-0.05	-1.16	-0.04	-0.79
No. of underwriter relationships (-1 yr)	-0.13	-0.90	-0.08	-0.54
Underwriter importance to client (-1 yr)	-0.01	-1.20	-0.01	-1.10
Underwriting portfolio weight - client (-1 yr)	0.02	0.35	0.01	0.32
Underwriting portfolio weight - IPO client	-0.06	-1.84 <sup>*</sup>	-0.06	-1.89 <sup>*</sup>
Ln(1+Days of class period interval)	-0.33	-1.82 <sup>*</sup>	-0.32	-1.81 <sup>*</sup>
Client value losses (\$Bn) – during class period	-0.004	-0.47	-0.005	-0.50
Client value losses (\$Bn) – recent	0.10	5.10 <sup>***</sup>	0.10	4.71 <sup>***</sup>
Sued firms’ three-day market-adjusted CARs (%)	-0.01	-1.12	-0.01	-1.11
Ln(sued firm’s market value)	0.24	2.08 <sup>**</sup>	0.22	1.92 <sup>*</sup>
Ln(underwriter’s market value)	-0.13	-1.18	-0.14	-1.12
Underwriter also sued (indicator var.)	0.32	0.59	0.03	0.06
Numbered sequence of underwriter observation	-0.01	-2.42 <sup>**</sup>	-0.01	-2.43 <sup>**</sup>
Numbered client lawsuit	-0.32	-0.42	-0.33	-0.45
Year 1997	-1.22	-0.91		
Year 1998	-2.69	-2.33 <sup>**</sup>		
Year 1999	-1.20	-0.92		
Year 2000	-1.00	-0.77		
Year 2001	-2.49	-2.00 <sup>**</sup>		
Year 2002	-1.90	-1.42		
Post 2000 (indicator var.)			-0.79	-1.92 <sup>*</sup>
Intercept	3.69	1.77 <sup>*</sup>	2.20	1.16
Adjusted R <sup>2</sup>	0.07		0.06	
Number of observations	637		637	

<sup>\*</sup>, <sup>\*\*</sup>, and <sup>\*\*\*</sup> denote statistical significance at the 10%, 5%, and 1% levels, respectively.

**Table 10 (continued)**

	Commercial banks		Investment banks	
	Estimate	<i>t</i> -stat	Estimate	<i>t</i> -stat
<b>Panel B. Commercial banks vs. investment banks</b>				
Industry diversification – bond and equity	0.97	0.34	-6.43	-3.26***
Underwriter reputation - bond market	-0.06	-1.21	0.08	1.37
Underwriter reputation - equity market	-0.06	-1.00	-0.05	-0.65
No. of underwriter relationships (-1 yr)	-0.10	-1.31	-0.24	-0.95
Underwriter importance to client (-1 yr)	0.001	0.13	-0.01	-1.10
Underwriting portfolio weight - client (-1 yr)	0.06	0.64	-0.02	-0.50
Underwriting portfolio weight - IPO client	-0.02	-0.22	-0.06	-1.84*
Ln(1+Days of class period interval)	-0.09	-0.33	-0.50	-2.07**
Client value losses (\$Bn) – during class period	0.002	0.09	-0.001	-0.13
Client value losses (\$Bn) – recent	0.08	1.84*	0.08	3.71***
Sued firms’ three-day market-adjusted CARs (%)	-0.02	-1.22	0.01	0.62
Ln(sued firm’s market value)	0.46	2.74**	0.11	0.66
Ln(underwriter’s market value)	-0.17	-1.73*	-0.25	-1.12
Underwriter also sued (indicator var.)	-0.11	-0.10	0.34	0.43
Numbered sequence of underwriter observation	0.004	1.32	-0.02	-4.73***
Numbered client lawsuit	-0.81	-0.61	0.53	0.80
Year 1997	-0.84	-0.88	-1.23	-0.86
Year 1998	-0.64	-0.48	-2.81	-2.33**
Year 1999	0.34	0.32	-0.95	-0.65
Year 2000	0.43	0.29	-0.43	-0.28
Year 2001	-0.16	-0.12	-3.05	-1.91*
Year 2002	-0.09	-0.08	-1.45	-0.98
Intercept	-1.33	-0.50	7.69	2.01*
Adjusted R <sup>2</sup>	0.08		0.14	
Number of observations	233		404	

\*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% levels, respectively.

## Appendix A

### Mergers and acquisitions between financial institutions considered in data construction

This table lists 46 mergers and acquisitions between financial institutions with at least one partner included in our final sample. The sample period is from 1996 to 2002 based on the effective merger date.

<b>Ann. date</b>	<b>Eff. date</b>	<b>Target name</b>	<b>Target parent name</b>	<b>Acquire name</b>	<b>Acquire parent name</b>
4/13/98	9/30/98	BankAmerica Corp	BankAmerica Corp	NationsBank Corp, Charlotte, NC	Bank of America Corp
6/30/97	10/1/97	Montgomery Securities, CA	NationsBanc Montgomery	NationsBank Corp, Charlotte, NC	Bank of America Corp
6/9/97	10/1/97	Robertson Stephens & Co	Robertson Stephens & Co	BankAmerica Corp	BankAmerica Corp
5/29/98	9/1/98	Robertson Stephens & Co	BankAmerica Corp	BankBoston Corp, Boston, MA	BankBoston Corp, Boston, MA
4/7/97	9/2/97	Alex Brown Inc	BT Alex Brown Inc	Bankers Trust New York Corp	Bankers Trust New York Corp
7/22/97	11/3/97	Oppenheimer (Oppenheimer Group)	Oppenheimer Group Inc	CIBC Wood Gundy Securities Inc	Canadian Imperial Bk Commerce
8/28/95	3/31/96	Chase Manhattan Corp	JP Morgan Chase & Co	Chemical Banking Corp, New York	Chase Manhattan Corp, NY
4/6/98	10/8/98	Citicorp	Citicorp	Travelers Group Inc	Citigroup Inc
9/24/97	11/28/97	Salomon Inc	Salomon Inc	Travelers Group Inc	Citigroup Inc
1/18/00	5/1/00	Schroders-Worldwide Investment	Schroders PLC	Salomon Smith Barney Holdings	Citigroup Inc
8/30/00	11/3/00	Donaldson Lufkin & Jenrette	AXA	CSFB	Credit Suisse Group
2/9/98	4/6/98	Wessels Arnold & Henderson LLC	Wessels Arnold & Henderson LLC	Dain Rauscher Corp	Dain Rauscher Corp
11/30/98	6/4/99	Bankers Trust New York Corp	Bankers Trust New York Corp	Deutsche Bank AG	Deutsche Bank AG
1/25/00	4/28/00	Black & Co Inc	Black & Co Inc	First Security Van Kasper & Co	First Security Corp, Utah
9/23/98	2/16/99	Van Kasper & Co	First Security Van Kasper & Co	First Security Corp, Utah	First Security Corp, Utah
3/14/99	10/1/99	BankBoston Corp, Boston, MA	BankBoston Corp, Boston, MA	Fleet Financial Group Inc, MA	Fleet Boston Corp, Boston, MA
9/16/97	2/2/98	Quick & Reilly Group Inc	Quick & Reilly Group Inc	Fleet Financial Group Inc, MA	Fleet Boston Corp, Boston, MA
9/28/99	12/10/99	Hambrecht & Quist Group Inc	Chase H&Q(Chase Manhattan)	Chase Manhattan Corp, NY	JP Morgan Chase & Co
9/13/00	12/31/00	JP Morgan & Co Inc	JP Morgan & Co Inc	Chase Manhattan Corp, NY	JP Morgan Chase & Co
4/11/00	8/1/00	Robert Fleming Holdings Ltd	Robert Fleming Holdings Ltd	Chase Manhattan Corp, NY	JP Morgan Chase & Co

**Appendix A (Continued)**

<b>Ann. date</b>	<b>Eff. date</b>	<b>Target name</b>	<b>Target parent name</b>	<b>Acquire name</b>	<b>Acquire parent name</b>
1/21/98	6/15/98	Genesis Merchant Group	Genesis Merchant Group	JW Charles Financial Services	JW Genesis Financial Corp
6/12/98	10/26/98	McDonald & Co Investments Inc	McDonald & Co Investments Inc	KeyCorp, Cleveland, Ohio	KeyCorp, Cleveland, Ohio
9/10/01	12/31/01	Piper Jaffray Investment Bank	US Bancorp	Libra Securities Holdings LLC	Libra Securities Holdings LLC
6/22/98	8/27/98	Midland Walwyn Inc	Midland Walwyn Inc	Merrill Lynch & Co Inc	Merrill Lynch & Co Inc
2/5/97	5/31/97	Morgan Stanley Group Inc	Morgan Stanley Group Inc	Dean Witter Discover & Co	Morgan Stanley Group Inc
4/28/00	6/12/00	JC Bradford & Co	JC Bradford & Co	PaineWebber Group Inc	PaineWebber Group Inc
4/14/99	6/14/99	Roney & Co, Detroit, Michigan	BANK ONE Corp, Columbus, Ohio	Raymond James Financial Inc	Raymond James Financial Inc
12/18/00	3/30/01	Morgan Keegan Inc	Morgan Keegan Inc	Regions Financial Corp	Regions Financial Corp
9/28/00	1/10/01	Dain Rauscher Corp	Dain Rauscher Corp	Royal Bank of Canada	Royal Bank of Canada
8/29/96	11/1/96	Richardson Greenshields of CA	James Richardson & Sons Ltd	RBC Dominion Securities Ltd	Royal Bank of Canada
8/1/01	11/1/01	Tucker Anthony Sutro	Tucker Anthony Sutro	Royal Bank of Canada	Royal Bank of Canada
11/29/99	3/13/00	National Westminster Bank PLC	National Westminster Bank PLC	Royal Bank of Scotland Group	Royal Bank of Scotland Group
5/15/97	9/2/97	Dillon Read & Co (UBS AG)	Dillon Read & Co (UBS AG)	SBC Warburg (Swiss Bank Corp)	Schweizerischer Bankverein
9/14/00	10/3/00	Branch Cabell & Co Inc	Branch Cabell & Co Inc	Tucker Anthony Sutro	Tucker Anthony Sutro
12/4/98	1/21/99	Hopper Soliday & Co	AIB Group	Freedom Securities Corp	Tucker Anthony Sutro
3/10/98	4/15/98	Cleary Gull Reiland & McDevitt	Cleary Gull Reiland & McDevitt	Freedom Securities Corp	Tucker Anthony Sutro
7/12/00	11/3/00	PaineWebber Group Inc	PaineWebber Group Inc	UBS AG	UBS AG
12/8/97	6/29/98	Schweizerischer Bankverein	Schweizerischer Bankverein	Union Bank of Switzerland	UBS AG
9/3/98	1/4/99	Libra Investments Inc	Libra Investments Inc	US Bancorp, Minneapolis, MN	US Bancorp, Minneapolis, MN
12/15/97	5/1/98	Piper Jaffray Cos	Piper Jaffray Cos	US Bancorp, Minneapolis, MN	US Bancorp, Minneapolis, MN
4/26/99	10/1/99	EVEREN Capital Corp	EVEREN Capital Corp	First Union Corp, Charlotte, NC	Wachovia Corp, Charlotte, NC
9/1/00	1/2/01	JW Genesis Financial Corp	JW Genesis Financial Corp	First Union Corp, Charlotte, NC	Wachovia Corp, Charlotte, NC
4/16/01	9/4/01	Wachovia Corp, Winston-Salem, NC	Wachovia Corp, Winston-Salem, NC	First Union Corp, Charlotte, NC	Wachovia Corp, Charlotte, NC
8/19/97	2/2/98	Wheat First Butcher Singer	WFS Financial Corp	First Union Corp, Charlotte, NC	Wachovia Corp, Charlotte, NC
10/27/98	4/1/99	Interstate/Johnson Lane Inc	Interstate/Johnson Lane Inc	Wachovia Corp, Winston-Salem, NC	Wachovia Corp, Winston-Salem, NC
4/10/00	10/26/00	First Security Corp, Utah	First Security Corp, Utah	Wells Fargo & Co, California	Wells Fargo & Co, California

## Appendix B

### Two-day stock price reactions to underwriters' reputation losses surrounding the filing of lawsuits

The sample contains underwriters of non-financial firms that were subject to securities fraud class actions during 1996-2002 due to alleged financial reporting fraud. These underwriters have served the clients in bond or equity offerings within the 5-year period prior to the end of class period or in initial public offerings. The two-day event window is (-1, 0). Day 0 is the event day. Market-adjusted cumulative abnormal returns (CARs) are the sum of the daily returns surrounding the event day in excess of CRSP equal-weighted index. Panel A (B) reports the frequency by year (by client's number of lawsuits). Mean and median are tested by *t*-test and Wilcoxon sign-rank test, respectively.

	All underwriters					Commercial banks			Investment banks		
	Obs.	Mean	Median	Min	Max	Obs.	Mean	Median	Obs.	Mean	Median
<b>Panel A. By year</b>											
1996	26	1.49	0.21	-4.14	33.10	1	-0.11	-0.11	25	1.55	0.43
1997	52	0.54	0.36	-4.61	12.95	8	-0.92	-1.23	44	0.80*	1.01*
1998	100	-0.48	-0.65*	-11.04	19.66	39	0.02	-0.65	61	-0.80	-0.64*
1999	101	0.30	-0.10	-7.63	12.79	50	0.29	0.32	51	0.31	-0.36
2000	125	-0.89**	-0.40**	-14.36	10.79	44	-1.05	-0.97	81	-0.81	-0.14
2001	120	-0.90***	-0.80***	-8.09	5.52	42	-0.36	-0.04	78	-1.19***	-1.31***
2002	190	-0.38**	-0.29***	-18.62	8.88	83	-0.09	0.17	107	-0.61**	-0.92**
<b>Panel B. By clients' number of lawsuits</b>											
1	648	-0.30**	-0.31***	-14.36	33.10	234	-0.14	-0.13	414	-0.40**	-0.46***
2	62	-0.77	-0.77	-18.62	9.07	31	-0.96	0.31	31	-0.58	-1.74**
3	4	0.20	0.35	-1.01	1.10	2	0.85	0.85	2	-0.46	-0.46
Total	714	-0.34***	-0.32***	-18.62	33.10	267	-0.23	-0.10	447	-0.41**	-0.51***

\*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% levels, respectively.

## Appendix C

### Market model stock price reactions to underwriters' reputation losses surrounding the filing of lawsuits

The sample contains underwriters of non-financial firms that were subject to securities fraud class actions during 1996-2002 due to alleged financial reporting fraud. These underwriters have served the clients in bond or equity offerings within the 5-year period prior to the end of class period or in initial public offerings. The three-day event window is (-1, 0, 1). Day 0 is the event day. Market model cumulative abnormal returns (CARs) are the sum of the daily abnormal returns surrounding the event day estimated from a market model. The estimation period is 60 trading days ending 26 trading days prior to the event date. Panel A (B) reports the frequency by year (by client's number of lawsuits). Mean and median are tested by *t*-test and Wilcoxon sign-rank test, respectively.

	All underwriters					Commercial banks			Investment banks		
	Obs.	Mean	Median	Min	Max	Obs.	Mean	Median	Obs.	Mean	Median
<b>Panel A. By year</b>											
1996	26	1.50	0.29	-5.05	22.17	1	-0.53	-0.53	25	1.58	0.40
1997	52	0.26	-0.38	-9.55	13.00	8	-0.28	-0.48	44	0.36	-0.34
1998	100	-0.93**	-1.34***	-14.23	17.38	39	-1.11*	-1.64***	61	-0.82	-1.29
1999	101	0.28	-0.01	-14.21	15.47	50	0.13	0.27	51	0.43	-0.11
2000	125	-0.32	-0.39	-12.31	23.44	44	-0.26	0.07	81	-0.35	-0.73
2001	120	-1.11***	-0.70***	-11.97	8.65	42	-0.14	0.11	78	-1.64***	-1.55***
2002	190	-0.36*	0.03	-20.35	11.17	83	-0.37	0.09	107	-0.36	-0.25
<b>Panel B. By clients' number of lawsuits</b>											
1	648	-0.30*	-0.32***	-14.23	23.44	234	-0.23	-0.16	414	-0.34	-0.36***
2	62	-1.03*	-0.77*	-20.35	8.92	31	-1.16	-0.43	31	-0.89	-1.28
3	4	1.02*	0.78*	0.30	2.22	2	0.54	0.54	2	1.50	1.50
Total	714	-0.36**	-0.32***	-20.35	23.44	267	-0.33	-0.19	447	-0.37*	-0.37***

\*, \*\*, and \*\*\* denote statistical significance at the 10%, 5%, and 1% levels, respectively