Do Investment Banks Matter?
The Impact of the Near Loss of an Equity Underwriter

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The financial crisis provides a natural experiment to understand investment banks' underwriting function. On the day of their equity underwriter's near failure, stock prices of clients of Bear Stearns, Lehman, Merrill and Wachovia fell by more than 5%, on average. This decline was more than 1% lower than the conditional return predicted by a market model, a destruction of equity value of more than $3 billion. The price impact was worse for companies with more opaque operations and fewer monitors, suggesting that underwriters play an important role in monitoring newly public companies. I find no evidence that the abnormal price decrease was related to underwriters' role as market maker or lender.

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I. Introduction

Immediately prior to Lehman Brothers' bankruptcy filing in September of 2008, the *Wall Street Journal*'s Deal Journal proposed that "…Lehman Brothers Doesn't Matter Anymore."[1] In contrast, this study finds that investment banks still matter to their equity underwriting clients. Stock prices of the clients of Bear Stearns, Lehman Brothers, Merrill Lynch and Wachovia fell by more than 5% when it appeared that their initial public offering (IPO) underwriter might collapse, a single day return that was more than 1% lower than the conditional return predicted by a market model. This 1% negative abnormal return represents more than $3 billion in lost equity value, on average, and more than 20% of the total initial underwriting spread.

The amount of client firms' underperformance is related to the importance of underwriter monitoring. Companies for which underwriter monitoring is less important, that is, companies with less opaque operations or with other monitors such as institutional investors, outperformed. This evidence is consistent with theoretical models such as Hansen and Torregrosa (1992) where IPO underwriters' reputation concerns mandate post-IPO monitoring.

The amount of underperformance is not associated with proxies for clients' dependence on equity financing. This finding is different from James (1992) who proposed that underwriters possess relationship-specific information similar to that of commercial banks and auditors. This evidence is surprising, since the financial crisis was accompanied by a fall in the public equity market which might disproportionately affect

[1] http://blogs.wsj.com/deals/2008/09/10/mean-street-why-lehman-brothers-doesnt-matter-anymore/

equity dependent companies. However, the result must be interpreted cautiously, since the lack of a statistically significant relationship may merely reflect the limited number of observations.

I test and reject several alternative explanations for the observed negative abnormal returns that are unrelated to equity underwriting: i) loss of a relationship bank (lending), ii) loss of a market maker and iii) loss of an investor. First, event day excess returns were not significantly worse for underwriting clients whose underwriter was also their lender. The lack of abnormal negative returns when underwriters were lenders is not evidence against the importance of relationship banking documented by Slovin, Sushka and Polonchek (1993), but likely reflects the fact that lending is less important to newly public companies and that these underwriters were unlikely to be their clients' most important lenders. Second, event day excess returns were not significantly worse for underwriting clients whose underwriter was also their NYSE specialist or NASDAQ market maker. While Ellis, Michaely, and O'Hara (2000) show that the underwriter is an important market maker immediately post-IPO, underwriters in the sample are either not their clients' most important market makers more than two months post-IPO or the loss of a single market maker is not that important. Third, evidence is inconclusive that event day excess returns were worse for underwriting clients whose underwriter was also an investor. Companies for which underwriter monitoring is more important have lower abnormal returns even after controlling for these three alternative hypotheses.

Finally, if the observed abnormal return was the result of investors' reassessment of underwriters' clients' quality due to underwriters' distress, there should be no positive price impact from the resolution of this distress. While it appeared on the event dates that

Bear Stearns, Lehman Brothers, Merrill Lynch and Wachovia might cease operations, each equity underwriter subsequently was acquired. Client firms gained approximately 1% on average after their troubled underwriters were acquired. This positive post-event return provides support for the assumption that the events were exogenous to the banks' underwriting business. It also suggests that the measured negative event date returns were not the result of investor updating on underwriter quality.

This paper adds to the literature on the role of investment banks as financial intermediaries. It provides an empirical estimate of the importance of equity underwriters and their role as post-IPO monitors. In addition, it sheds light on the financial crisis, looking at the potential impact of weakness in the investment banking industry on investment banking clients. If investment banks are too weak to commit to credibly monitor post-IPO companies, access to equity finance may be negatively impacted. The analysis also has implications for companies selecting an underwriter – IPO clients should consider the financial strength of their underwriter, not just the underwriter's underwriting capabilities.

The paper proceeds as follows. I present the literature and empirical predictions in Section II. Section III describes the data, Section IV the methodology and Section V presents the empirical findings. Section VI concludes.

II. Literature and Empirical Predictions

A. Do underwriters matter?

The analysis first examines the impact of an exogenous near-failure of an equity underwriter on the equity value of its clients. If the underwriter plays no special role to

its post-IPO clients, there should be no impact on its clients' equity value. In contrast, if the underwriter plays an important role, the stock price of the client should fall. The first empirical exercise is to document negative abnormal returns for troubled underwriters' clients.

The finding of a negative excess return is necessary but not sufficient evidence to prove the existence of a special post-IPO role for underwriters. While the literature focuses on the importance of underwriter monitoring and information production, the underwriter is part of a larger bank which may also be acting as a lender, a market maker, or as an investor in its clients. The prospective loss of these services, rather than the loss of underwriter monitoring, may be the source of the observed negative returns. I first present two information-based explanations for the observed negative returns, monitoring and relationship underwriting (non-transferrable private information). I then review alternative hypotheses for the negative abnormal returns, three of which are based on other underwriter functions (lending, market making and investing) and one based on investor updating on quality.

B. Monitoring

Academic studies highlight the importance of the equity underwriter in certifying and monitoring, especially for initial public offerings. Easterbrook described the importance of underwriter monitoring of the manager-stockholder conflict, "When it issues new securities, the Company's affairs will be reviewed by an investment banker or some similar intermediary…" (Easterbrook (1984, p. 654)). Beatty and Ritter (1986) demonstrate the relationship between IPO pricing and investor uncertainty about

valuation. They argue that the underpricing equilibrium is enforced by investment bankers who have reputation capital at stake. Carter and Manaster (1990) model the importance of exogenously determined underwriter reputation and show that underwriter prestige is negatively related to the magnitude and variance of post-IPO price run-up. Both suggest a role for investment banks to produce information about companies seeking to go public before they certify them because they want to protect their reputation capital.

Hansen and Torregrosa (1992) extend these papers to a model where the certification role of underwriters mandates post-IPO monitoring. They theorize that banks receive rents from their reputations for monitoring, and that banks continue to monitor since shirking would be unlikely to result in gains that offset the losses to reputational capital. This post-IPO monitoring is mandated by investment banks' reputation concerns and would be discontinued if the value of the rents from that reputation went away (for example if the underwriter went bankrupt or their IPO underwriting business was discontinued). It is not necessary for the underwriter to possess non-transferable private information for its post-IPO monitoring to be valuable, it is only necessary that the underwriter be motivated to invest in information production to protect its reputation.

Existing empirical evidence for the provision of post-IPO monitoring by underwriters is subject to concerns about endogeneity of company characteristics and underwriter selection, which might produce the observed relationships between underwriter reputation, stock performance and risk. For example, Hansen and Torregrosa (1992) present indirect evidence that underwriting syndicates monitor corporate

managers by finding that spreads are lower when management ownership is higher. Jain and Kini (1999) conclude that there is demand for third party monitoring in the IPO market and find a positive relationship between investment bank reputation and post-issue performance. An important contribution of this paper is to use the underwriters' exogenous near failures to estimate the importance of their monitoring and thus avoid the problem of endogeneity of underwriter selection.

An additional difficulty in testing for underwriter monitoring is that the exact mechanism for post-IPO monitoring is unclear. It may be through the company's continued contact with investment bankers or investment bankers' contacts with investors. The reputation asset may be at the underwriter level, or at the level of the senior investment bankers who worked on the underwriting. Unfortunately it is difficult to distinguish empirically between these alternatives. One proposed mechanism that has been the most studied empirically is the underwriter affiliated research analyst. However, researchers have not found affiliated analysts to be the best predictors of stock price performance. Michaely and Womack (1999) find that stocks recommended by underwriter affiliated analysts underperform. Das, Guo and Zhang (2006) find that IPOs with high coverage from non-affiliated analysts outperform relative to those with low residual coverage. Fang and Yasuda (2008) find that the severity of conflict of interest has a negative effect on the performance of lower ranked analysts, regardless of bank reputation. These papers implicitly question the value of underwriter monitoring, to the extent that underwriter monitoring is produced by affiliated analysts.

It is possible that published analyst recommendations are not good proxies for analyst monitoring or even the level of analyst information production. The Wall Street

Journal noted that equity analysts at Goldman Sachs and Morgan Stanley disseminate daily information on stocks they cover to institutional investors and trading clients, and that these tips may differ from analysts' published research.[2]

A likely mechanism for post-IPO monitoring by underwriters is "non-deal road shows." Similar to the "road show" presentations given by company management to potential investors in the IPO process, the underwriter continues to arrange presentations by company management to institutional investors after the IPO. Typically, in this process the underwriter-affiliated research analyst organizes visits by company management to institutional investors in the institutional investors' home city[3] or proactively coordinates a visit to the company headquarters. Unfortunately, there is no publicly available information on the extent or value of this type of meeting.

Regardless of the mechanism, a monitoring explanation for the importance of the underwriter results in the following prediction:

Prediction 1*: Companies for which underwriter monitoring is important (more opaque operations or fewer monitors/ information producers) will be the most negatively affected by the failure of their underwriter.*

C. Relationship Underwriting

In addition to acting as a post-IPO monitor, underwriters may possess valuable relationship-specific information that cannot be transferred easily. James (1992) posits

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[2] Craig, Suzanne, "Goldman's Trading Tips Reward its Biggest Clients," *Wall Street Journal*, August 24, 2009, p. A1.

[3] This process, labeled "Local Investor Relations" is considered by Hong, Kubik and Stein (2005) as an explanation for the correlation of the trades of local fund managers.

that equity underwriters have durable relationship-specific information similar to that of commercial banks and auditors. He notes that "in the process of evaluating the offer the investment banker obtains information concerning the firm's operations and management that would be useful in underwriting subsequent offerings." However, he is only able to test this with evidence from subsequent equity offerings. He finds evidence for relationship-specific information held by the underwriter – lower spreads for firms that make subsequent issues and less underwriter switching when the time between an IPO and subsequent SEO is smaller. Krigman, Shaw and Womack (2000) reexamine client loyalty with evidence from the 1990s and find that while client loyalty had declined, 70% of firms completing a secondary equity offering (SEO) within three years of their IPO select the same lead underwriter.

This paper adds to the literature on relationship underwriting by offering a more rigorous empirical test for the presence of underwriter-specific information - the impact of an underwriter's exogenous near failure. It is similar in spirit to the literature which seeks to quantify the importance of lenders as financial intermediaries by measuring the impact on clients of exogenous bank failures. For example, Slovin, Sushka and Polonchek (1993) found an average abnormal return of -4.2% on the stock prices of its lending clients during the impending insolvency of the Continental Illinois bank. More recently Ashcraft (2005) estimated the impact on local activity of the failure of healthy subsidiaries of a multi-bank holding company. While these papers consider the impact of exogenous bank or lender failures, this analysis considers the impact of exogenous underwriter near failures.

If the underwriter possesses non-transferrable relationship-specific information and a company is likely to need access to equity capital markets in the near future, this leads to the second prediction:

Prediction 2*: Companies which are the most equity dependent will be the most negatively affected by the failure of their underwriter.*

D. Relationship Lending

While the first two hypotheses test previously unconfirmed theories about the role of underwriters, alternative explanations may account for the results. The extensive theoretical and empirical literature on relationship banking suggests that if underwriters are the primary lenders for their clients, the loss of a lending relationship would result in a negative equity return.[4] This loss derives from the non-transferability of private information gathered by lenders. The negative relationship between clients' equity returns and the exogenous failure of the Continental Illinois bank was documented by Slovin, Sushka and Polonchek (1993).

Drucker and Puri (2005) find that loan underwriting increases the probability of getting future advisory business (including equity offerings), primarily for commercial banks. While the troubled underwriters in this sample are all primarily investment banks, rather than commercial banks, Drucker and Puri's results suggest that underwriters may be more likely to also be lenders. Petersen and Rajan (1994) find that banking relationships may be more important for younger and smaller companies such as IPOs.

[4] For a detailed survey of the relationship banking literature see Ongena and Smith (2000) and Boot (2000).

However, lending relationships may not be as important for the sample companies because newly public companies are likely to be equity financed rather than debt financed, and thus less reliant on access to bank credit. A relationship lending explanation predicts:

Alternative 1: *Companies whose underwriter is their primary lender (relationship bank) will be the most negatively affected by the failure of their underwriter.*

E. Market Making

The second explanation unrelated to equity underwriting is that the underwriter is a market maker for its clients. As Stoll (2003) notes, "The price investors would pay for the new shares must undoubtedly depend on the ease with which those shares can be sold in the future." If market makers reduce transactions costs or provide liquidity to investors, and if underwriters are the primary market makers for their clients, the observed negative return may simply reflect the importance of a loss of a market maker.

Ellis, Michaely and O'Hara (2000) present evidence on the first few months post-IPO and find that the lead underwriter always becomes a market maker and usually takes a substantial inventory position in the stock.[5] However, they find that price support lasts only throughout the 20th day post-trading. A market making explanation results in the following prediction:

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[5] Ellis, Michaely and O'Hara (2000) also detail the importance of the overallotment option and price stabilization. The overallotment option is only exercisable in the 30 days after the IPO and thus not relevant to this analysis.

Alternative 2*: Companies whose underwriter is a post-IPO market maker will be the most negatively affected by the failure of their underwriter.*

F. Investing

Underwriter-affiliated asset management divisions may invest directly in clients. If underwriters' asset management divisions liquidate shares because of an underwriter's distress, the additional supply of shares may depress prices. This price effect may be generated either by the actual sale of shares by the underwriter-affiliate, or fear by other investors of liquidation. While Ritter and Zhang (2007) do not find much evidence for systematic allocation of shares to underwriter-affiliated mutual funds, this would occur even if this liquidation imparts no information about the client.[6] While this explanation is based on the direct impact of the underwriter as an investor, it does not preclude a monitoring explanation. Affiliated divisions may invest because of a lower marginal cost of information production due to banks' ongoing information production about the client post-IPO.[7] An investing explanation results in the following prediction:

Alternative 3: *Companies whose underwriters are stockholders will be the most negatively affected by the failure of their underwriter.*

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[6] For the 1990-2001 period, Ritter and Zhang (2007) do not find evidence of investment banks dumping poor quality offerings on affiliated funds.

[7] Mola and Guildolin (2009) find little evidence for simultaneous effects between analyst recommendations and affiliated fund holdings, but this does not preclude the existence of important information flows within brokerage firms, such as between investment bankers and mutual fund managers.

G. Ex Post Updating on Underwriter Quality

A final alternative hypothesis to explain the negative event day returns is ex post updating by investors on the quality of the underwriter's certification. If an underwriter's near failure causes investors to reevaluate the underwriter's pre-IPO information production and certification process, sample companies should have negative event day abnormal returns. These negative returns would be evidence for pre-IPO certification then, but not necessarily for any post-IPO role for the underwriter.

For example, if an investor viewed Bear Stearns' March 2008 financial difficulties to be symptomatic of systematically poor decision making at Bear Stearns, the investor might reevaluate the certification provided by Bear Stearns on its IPO clients, even though Bear Stearns' financial difficulties stemmed primarily from its mortgage-related business. If an underwriter's difficulties led investors to update on its underwriting quality, negative reassessment of underwriters' clients should be permanent. If, instead, the observed negative abnormal return is due to concern about the continuation of the post-IPO functions of the underwriter, the post event abnormal return should be positive when uncertainty about the underwriter is resolved. This leads to the prediction:

Alternative 4: *If underwriters' failures lead investors to update on the quality of underwriters' clients, post-event event returns should be unaffected by the news that the banks' underwriting activities will continue.*

III. Data and Empirical Methodology

A. Sample

The sample of initial public offerings is collected from Securities Data Corporation's (SDC) New Issues Database. It includes all companies which listed Bear, Stearns, Lehman Brothers, Merrill Lynch or Wachovia as their Book Underwriter since January 1, 2004. It excludes public offerings of financial products (defined as offerings in SIC codes 6726 and 6798 which include Unit Investment Trusts, Face-Amount Certificate Offices, Closed-End Management Investment Offices, and Real Estate Investment Trusts). In addition, it excludes very small offerings (firms with an offer price below $4.00 a share and below $10 million in total offering size). This totals 311 underwriter-client pairs; 107 IPOs for Lehman, 39 for Bear Stearns, 49 for Wachovia and 116 for Merrill Lynch. The total number of companies is 227, because in some cases, the company was an underwriting client of more than one troubled underwriter. NASDAQ is the primary stock exchange for 51% of the companies, NYSE for 49% and the remaining less than 1% trade on the American Stock Exchange.

I create a comparison portfolio, the IPO Index, comprised of all companies that had initial public offerings since January 1, 2004, but did not have Bear, Stearns, Lehman Brothers, Merrill Lynch or Wachovia as their Book or Co-Manager. By definition this index excludes all of the sample companies. Like the sample, the IPO Index excludes all public offerings of financial products and very small offerings.

Data on prices, trading volume and shares outstanding are from the Center for Research in Security Prices (CRSP). Accounting variables are from the COMPUSTAT Industrial Annual or Quarterly data file.

Table 1 presents summary statistics for the sample and the IPO Index portfolio. Sample companies have been public for over 2 years on average, and the minimum time between IPO and event date was more than 98 days. Like other newly public companies, companies in the sample are relatively small, with mean (median) sales of $1,093 ($396) million and assets of $2,411 ($832) million. Debt levels are low relative to the average publicly traded company, with median leverage of 30%, although higher than the IPO Index. The most represented industries were Business Services (SIC codes beginning with 73), followed by Chemicals and Allied Products (SIC code 28) and Electric, Gas and Sanitary Services (SIC code 49).

Jain and Kini (1999) find that clients of higher ranked underwriters have better post-IPO returns. The four banks studied were relatively highly ranked in equity underwriting, thus the sample may be expected to be of slightly higher quality than a random sample of IPOs.[8] To the extent that the sample companies are of higher quality than other newly public companies and higher quality companies differentially outperform on days of market crises, that would bias against finding any negative abnormal returns. Regardless, the valuation (measured by the price to earnings ratio or book to market) of the sample companies is lower or not significantly different from the other companies in the IPO Index, suggesting that these companies may not necessarily be of higher quality.

[8] The Carter-Manaster rank in equity underwriting for 1992-2000 as calculated by Loughlin and Ritter (2004) was 8.1 for Bear Stearns and Lehman, 9.1 for Merrill Lynch and 7.1 for Wachovia.

B. Event dates

The analysis is based on four separate bank events, collectively referred to as "failures." Of course, each event subsequently resulted in very different outcomes for the relevant investment banks and their employees. In each case the event date may be understood as a day in which there was substantial market uncertainty about the probability that the bank would be in business the next day. The event dates, $t = 0$, are as follows:

1) Bear Stearns, March 14th, 2008 – Bear Stearns announces $30 billion in funding provided by JP Morgan and the Federal Reserve. March 14th is the last trading day before the JP Morgan announcement on Sunday March 16th that it would acquire Bear Stearns for $2 a share, representing just over 1 percent of the firm's value at its record high close 14 months earlier. (Bear Stearns' stock price closed at $30 on March 14th, 2008)
2) Lehman Brothers, September 15th, 2008 – Lehman Brothers files for bankruptcy after failing to find a merger partner. (Lehman Brothers' stock price closed at $0.21 on September 15th, 2008)
3) Merrill Lynch, September 15th, 2008 – As Lehman Brothers goes bankrupt, Merrill Lynch announced that it would be acquired by Bank of America for approximately $50 billion, approximately half of its all-time peak value of early 2007 (Merrill Lynch's stock price closed at $17.06 on September 15th, 2008)
4) Wachovia, September 29th, 2008 – Citigroup announces an agreement brokered by the FDIC to acquire most of Wachovia for approximately $1 a share. The FDIC describes the transaction as "Not a failure," although the price was less than

14% percent of the high of $51 earlier that year. The following month, Wachovia is acquired by Wells Fargo. (Wachovia's stock price closed at $1.84 on September 29th, 2008)

IV. Methodology

A. Abnormal Returns

I calculate daily abnormal (excess) returns for each company using market model methodology. The abnormal returns are the difference between the actual return and conditional expected return obtained from a least squares regression estimated over a 40 day pre-event period t = -45 through -6, with time measured in trading days. Because the relevant events occurred suddenly, but around a period of dislocation in the capital markets, I do not include days -1 through -5 in the estimation period. The null hypothesis for the initial statistical test is that the abnormal return is equal to zero. Abnormal returns are calculated only on the day of the underwriter failure (t = 0), although the analysis is robust to a longer event window.[9] The analysis is also robust to longer estimation periods, although the estimation period is necessarily limited by the fact that the companies of interest are newly public. The basic specification is:

$$AR_{i,t} = \alpha + \varepsilon_{i,t}$$

[9] Expanding the event window to include -1 and 0 results in a cumulative abnormal return (CAR) of -1.79% vs. NASDAQ and -2.38% vs. the IPO Index. Expanding the event window to include -1, 0 and +1 results in CAR of -3.32% vs. NASDAQ and -3.66% vs. the IPO Index. Expanding the event window to include -2, -1 and 0 results in CAR of -3.47% vs. NASDAQ and -4.16% vs. the IPO Index. In each case the difference between the CAR and 0 is statistically significant.

where $AR_{i,t}$ is the abnormal return of company i at the event date t and α measures the extent of the underperformance.

Since performance tests are joint tests of the null hypotheses of no abnormal performance and the pricing model (Fama (1976)), the conditional expected return is estimated relative to several possible measures of market performance, including broad based market measures as well as measures which better match the daily return characteristics of the sample companies. In addition to the standard market measures (S&P 500, NASDAQ value weighted composite index and NYSE/AMEX value weighted index (all including dividends)), I construct several comparison portfolios to match the characteristics of the sample companies: i) 25 size and book to market quintile matched portfolios, ii) 2-digit SIC code matched portfolios, and iii) a portfolio of newly public companies (IPO Index).

The first comparison portfolio is matched by book-to-market and size quintiles, because Brav and Gompers (1997) provide evidence that IPOs are likely to be smaller and lower book-to-market than the overall market. To construct these 25 matched portfolios, I use all NYSE stocks to create size quintile breakpoints with an equal number of firms in each quintile. Size is measured as the number of shares outstanding times the stock price at the end of the quarter preceding the event date. Accounting measures are from the COMPUSTAT quarterly and annual files and define book value as book common equity plus balance sheet deferred taxes and investment tax credits for the fiscal quarter ending two quarters before the event date similar to Fama and French (1992).[10]

[10] If the book value is missing I substitute the most recent annual value.

Within each size quintile I form five book-to-market portfolios with an equal number of NYSE firms.[11]

In addition to differences in size and valuation, it is possible that the industry composition of the sample companies may be different from that of the market. Differences in industry concentration may arise from differences in IPO industry composition relative to the market, or differences in industry focus at the four investment banks. For each company I create a value weighted portfolio based on all of the companies in the CRSP universe that are in the same 2-digit SIC code. This allows for a more precise definition of industry than the 49 industry portfolios considered by Fama and French (1997).

Finally, I estimate conditional returns based on a reference portfolio comprised of recently public companies who were not equity underwriting clients of the troubled underwriters (IPO Index). This portfolio is weighted by companies' market values as of December 31, 2008. Young companies are an important reference point because the banks' failures impacted financial markets and liquidity. Matching the sample firms to an index of newly public firms can thus effectively control for events that affect the returns of all newly public companies. Using a portfolio of newly public companies as a benchmark will minimize spurious findings that reflect the impact of the collapse of market liquidity rather than the underwriters' failure. In aggregate, the resulting portfolio is also more similar to the sample companies as measured by book-to-market ratios and equity market values. The downside of this benchmark is that it reduces the likelihood of

[11] This adaption of the Fama and French (1992) methodology follows that of Brav and Gompers (1997).

estimating negative abnormal returns since there may also have been uncertainty at the event dates about some of the underwriters of these other newly public companies.

B. Difference-in-differences

I next exploit differences within the sample to understand why newly public companies' stock prices fall when their underwriter goes away. The equation estimated becomes:

$$AR_{i,t} = \alpha + \beta X_{i,t-1} + \varepsilon_{i,t}$$

where $AR_{i,t}$ is the abnormal return around the underwriter failure, α is the fixed effect of the failure on the full sample and $X_{i,t-1}$ is a proxy for the characteristic of interest from the accounting period immediately prior to the event date. The difference-in-difference estimations in the remainder of the paper present abnormal returns calculated relative to the IPO Index and the NASDAQ index. The IPO Index represents the most comparable reference portfolio, since it is comprised of companies similarly affected by the market-wide decline in liquidity. The NASDAQ composite is selected because of all the possible broad market benchmarks it is more likely to have smaller and newly public companies similar to our sample. Results are similar if other benchmark portfolios are used.

V. Empirical Findings

A. Abnormal event date returns

Does the price of newly public companies fall on the day that it is revealed that their underwriter may cease operation? Figure 1 shows the mean daily returns of the sample companies with dates in event time (event day equal to 0). The average event day

return is a decline of more than 5%. Table 2 tabulates these statistics for the sample companies and seven benchmark portfolios. Mean daily returns of troubled underwriters' clients were lower those of each of the benchmarks on the event date. Among the possible benchmarks, NASDAQ has higher event day returns than the NYSE Composite, perhaps because many of the large banks are included in the NYSE Composite.

The negative event date returns are not driven by severe underperformance of a single underwriter's clients. Figure 2 decomposes the mean daily returns of the companies in the sample by underwriter relative to event time. All have negative event date returns. Bear Stearns' clients underperformed the least in absolute terms, although the overall market decline on that date was also the least extreme.

The remainder of the paper focuses on abnormal returns, the difference between each company's actual return and its conditional expected return calculated relative to various possible reference portfolios. Table 3 tabulates the event date abnormal returns by underwriter. On average and at the median, the sample companies underperformed relative to the conditional expected return estimated from most of the benchmark portfolios, except for those underwritten by Wachovia. Lehman-underwritten companies performed the worst, perhaps because Lehman's failure was unconditionally the worst.

Table 4 shows the abnormal returns of the sample companies relative to the following reference portfolios: i) S&P 500 Index, ii) NASDAQ, iii) NYSE, iv) CRSP, v) size and book-to-market matched portfolios, vi) IPO Index and vii) SIC-code matched portfolios. In each case, the estimated constant measure of abnormal return, α, is negative. Abnormal returns are negative and are statistically significant, ranging from -1.5% to -0.5%. Using the IPO Index as the reference portfolio, this specification implies

excess value destruction of $12 million for a troubled underwriter client of mean equity value – total value destruction, on average, of more than $3 billion in aggregate.

B. Post-IPO Monitoring

In order to test Prediction 1, I calculate several proxies for the importance of underwriter monitoring. In each case the proxies are calculated as of the fiscal quarter preceding the event date. Underwriter monitoring should be more important when the company's operations are more opaque and when there are fewer other monitors. The following table summarizes the proxies and the expected relationship with abnormal returns. Summary statistics for the measures are presented in Table 5:

Importance of Monitoring	Expected Sign
Opacity of company operations:	
1. Log days since IPO (*LISSUETIME*)	+
Dispersion of IBES analyst estimates:	
2. SD of FY+1 EPS Estimates$_t$ (*SD_FY1*)	-
3. SD of FY+2 EPS Estimates$_t$ (*SD_FY2*)	-
Importance of underwriter to monitoring:	
4. Number of book underwriters (*BOOK_N*)	+
5. Log number of equity analysts (*LNUMANALYST*)	+
6. Difference between underwriter affiliated analyst estimate and other analyst estimates (*UDIFF)*	-
Institutional block holders:	
7. Percentage held by institutions (*PINSTITUTION*)	+
8. Mean percentage held by blockholders (*PBLOCKS*)	+
9. Presence of other intermediaries (*VCFIRM*)	+

In addition to testing separately each proxy's relationship with abnormal returns, for parsimony, I create a monitoring index. For each of the nine measures for which the company is in the bottom quartile of the level of information opacity or in the top quartile

of the level of other monitors the company receives one point. Thus the theoretical maximum monitoring index level is 9, which would be a company with low levels of information opacity and high levels of other monitors. High levels of the index indicate lower importance of underwriter monitoring.

The first measure is the log of days since IPO *(LISSUETIME)*. The longer the time since IPO, the longer the company's public reporting history and the more information available about a company. Older companies have also had more time to develop and communicate with an investor base. Thus there should be a positive relationship between *LISSUETIME* and abnormal returns. The next two variables are the standard deviation of I/B/E/S analysts' one and two year forward earnings estimates measured as of the quarter preceding the event date (*SD_FY1* and *SD_FY2*). The mean standard deviation of I/B/E/S EPS estimates was 0.3375 and 0.4536 for 1 year and 2 year forward estimates, respectively. D'Mello and Ferris (2000) propose that when analysts' estimates diverge, a likely reason is that earnings for that company are difficult to estimate. Higher standard deviations of earnings estimates should be associated with more opaque companies and thus there should be a negative association between abnormal returns and the standard deviation of earnings estimates.

The remaining variables measure the relative importance of underwriter monitoring. If there are other monitoring intermediaries, the underwriter should be relatively less important. The first measure is the number of book underwriters, which is the total number of book underwriters according to SDC (*BOOK_N*). On average, each company has slightly more than two underwriters. Each member of the equity

underwriting syndicate represents an additional source of monitoring and external information production. Thus there should be a positive coefficient on *BOOK_N*.

If underwriter-affiliated analyst coverage of the company is the source of monitoring, coverage by other research analysts may serve the same purpose. On average, each company has approximately eight research analysts. More analysts should mean more monitoring. Thus higher returns (a positive coefficient) should be associated with the log of the number of I/B/E/S analysts with estimates for the company measured as of the quarter preceding the event date *(LNUMANALYST)*.

To measure the uniqueness of the underwriter-affiliated analyst's opinion, I calculate the difference between the 1 year forward underwriter-affiliated analyst estimate and the mean of other analyst estimates (*UDIFF)*. On average, the affiliated analyst has a 1 year forward EPS estimate that is 2 cents higher than the mean of all other analysts, although the median difference is zero. If the affiliated analyst has the most positive news about a company, than the stock price reaction to the underwriter's failure should be worse (negative coefficient on *UDIFF*).

Investment banks and research analysts are not the only monitors of public companies. Investors also produce information about companies in which they invest. This leads to two other proxies. First, institutional stockholders should invest more in information acquisition, since they tend to hold larger blocks of stock and thus can spread their costs over a larger investment. Market microstructure research suggests that institutional holders are indeed informed traders (Seppi (1992), Hessel and Norman (1992), Lang and McNichols (1997)). Second, if there are large blockholders or high percentages of management ownership, agency problems may be lower and the company

may require less monitoring. I use the CDA Spectrum Institutional Holdings database to gather information on institutional and blockholder ownership. Institutional ownership is measured as the percentage of shares outstanding held by institutions, the sum of the number of shares held by institutions divided by the total number of shares outstanding, all measured as of the quarter ended prior to the event date. Blockholder ownership is measured as the mean block size of institutions and block holders (13D filers), the mean of the percentage of shares outstanding held by each blockholder as of the quarter prior to the event date (*PBLOCKS*). Both ownership measures should be positively associated with abnormal returns.

Brav and Gompers (1997) note that another important financial intermediary for newly public companies is their venture capital investor. Venture capitalists may have reputation concerns that lead them to continue to monitor the company post-IPO, and may continue to serve on the board of directors. The presence of a venture capital investor is measured by a dummy variable equal to 1 when SDC's IPO database indicates that a company was venture-backed. The VC-backed dummy (*VCFIRM*) should be positively associated with abnormal returns.

Table 6 shows the results of specifications testing the relationship between these proxies and event day abnormal returns. The dependent variable in Table 6 is the abnormal return calculated relative to the conditional expected return based on either the IPO Index or the NASDAQ Composite Index. The results of the estimations are similar, regardless of the benchmark portfolio. Each specification tests a different monitoring proxy and the final specification tests the monitoring index, which combines the proxies.

The analysis supports Prediction 1. As shown in Table 6, event day abnormal returns are more negative when the company's operations are more opaque, for example when analysts' estimates for the company are more dispersed. Event day abnormal returns are higher when there are more monitors, for example when: i) the number of other book underwriters is higher, ii) more analysts cover the company, iii) the affiliated earnings estimate is not significantly higher than other analysts' estimates, iv.) institutions are shareholders, v.) shares are held in larger blocks, and vi.) when the company is venture-backed. In each case, the sign of the coefficient was as predicted, except for days since IPO. The lack of statistical significance for some of the coefficients may reflect the relative lack of power given the limited number of observations or the imprecision of the monitoring proxies.

The coefficients on institutional and blockholder ownership are positive and statistically significant. A one standard deviation increase in institutional ownership mitigates the expected 3 percent event day abnormal stock price decline by almost 1 percent. Similarly, a one standard deviation increase in block size mitigates the abnormal decline by almost 0.5 percent (see specifications 7 and 8 relative to the IPO Index). The importance of institutional shareholders and blockholders has several interpretations. First, institutional shareholders may actively monitor the company and reduce agency costs through activist shareholding or reduction of agency conflicts. Second, institutional shareholders may produce information that is directly dispersed to the market, reducing the relative importance of the underwriter as an information provider. Finally, institutional shareholders may be more likely to be long term investors and thus be less

likely to sell into a sudden overall market decline, even if they are ultimately planning to exit a stock due to the prospects for reduced underwriter monitoring.

A critical part of underwriting is the acquisition of analyst coverage by the newly public company. Ljungqvist, Marston and Wilhelm (2006) do not find evidence that analysts tailor their recommendations to attract mandates. Thus, it is possible that underwriter monitoring is merely equity analyst monitoring. If this is the case, all companies covered by troubled investment banks' research analysts should have negative event day returns. Underwriting clients should not have lower returns than any other covered company. I estimate an abnormal return for 1,646 companies covered by research analysts from the four troubled underwriters (2,977 observations). Abnormal event day returns for companies covered by troubled underwriters' analysts ranged from -0.9% to -0.6% and varied in statistical significance depending on the market benchmark for which the conditional return was estimated.[12] For each market benchmark, the estimated abnormal return for companies underwritten by troubled investment banks was significantly lower than that of companies that had only analyst coverage from troubled investment banks. This result suggests either that the research analyst does differentially more monitoring of newly public companies that were underwritten by an affiliated investment bank or that the research analyst is not the sole monitoring agent.

[12] Results available upon request. Within the sample of all companies covered by research analysts from the four troubled underwriters, the negative abnormal return was mitigated if the analyst was top ranked by *Institutional Investor* magazine (All-star analysts). Within the sub-sample of underwritten companies the result is similar but not statistically significant. These top ranked analysts are more likely to get positions at other underwriters even if their own institution fails, and thus any private information would not be lost even if the underwriter failed. I am grateful to Alexander Ljungqvist and Felicia Marston for their help in compiling the *Institutional Investor* data.

D. Relationship Underwriting

Companies that are equity dependent and likely to seek to access the capital markets should also be affected by the loss of their underwriter if the underwriter possesses soft information that would be costly for a different underwriter to collect. I construct an index of equity dependence based on Kaplan and Zingales (1997) as calculated by Lamont, Polk and Saa-Requejo (2001). Baker, Wurgler and Stein (2008) find that firms that rank higher in this index have investment that is more sensitive to stock prices (although they exclude Q from the index given the nature of their tests). The equity dependence measure is:

$$KZ_{it} = 1.002 \times \frac{CF_{it}}{A_{it-1}} - 39.367 \times \frac{DIV_{it}}{A_{it-1}} - 1.315 \times \frac{C_{it}}{A_{it-1}} + 3.139 \times LEV_{it} + 0.283 \times Q_{it}$$

where CF_{it}/A_{it-1} is cash flow (the sum of OIBDPQ for the 12 months trailing the event date) over lagged assets (ATQ); DIV_{it}/A_{it-1} is cash dividends (DV) over assets; C_{it}/A_{it-1} is cash balances (CHEQ) over assets; LEV_{it} is leverage ((DLCQ+DLTTQ)/assets); and Q is the market value of equity (price (PRCCQ) times shares outstanding (CSHOQ)) plus assets minus the book value of equity (SEQQ +TXDITCQ-PSTKQ) all over assets. All items are calculated as of the last fiscal quarter end prior to the event date.

The newly public firms in the sample have a mean (median) KZ index of 0.21 (0.52), which is not significantly lower than the mean (median) KZ index of the IPO Index companies of 1.23 (0.80). As expected, both levels are higher than the mean of -0.15 estimated by Lamont, Polk and Saa-Requejo in a comprehensive market sample from 1968 to 1995.

The specifications presented in Table 7 do not support Prediction 2. There is no consistent statistically significant relationship between equity dependence and abnormal returns. This may either reflect noise in the measure of equity dependence or that underwriters do not possess valuable non-transferrable information. Of course it is difficult to separate monitoring from equity dependence, since some of the measures of asymmetric information may also be associated with higher amounts of non-transferrable information.

One component of the KZ Index that appears to be related to abnormal returns is the cash to capital ratio. Companies with the most cash on hand are the least affected by the failure of their underwriter, perhaps because they have ample liquidity to invest. This result is interesting, because the monitoring hypothesis predicts the opposite sign (companies with more cash on hand may need more monitoring).

Another component of the KZ Index is the debt to capital level. Companies with more debt may underperform, although again, the result is not statistically significant. This result is surprising, since debt holders may serve as an additional source of monitoring. However, another explanation is suggested by Bharath, Dahiya, Saunders and Srinivasan (2007) who find that lenders are likely to be chosen to provide underwriting services. Thus perhaps the real effect of the underwriter's failure is that of the lender's failure. This effect is considered in the next section.

E. Relationship Lending

If the underwriter is a lender, there should be a negative event day return due to the loss of relationship-specific lending information. The Capital IQ database lists all

suppliers to publicly traded companies, including lenders, based on the company's most recent 10-K filing. This list includes any lenders to a company, regardless of if the loan is drawn. Of 289 observations matched to Capital IQ, only 4 companies (2%) listed the underwriter as a lender.[13] Specifications 1 and 3 of Table 8 add a dummy variable equal to 1 if the underwriter was one of the company's lenders, including undrawn revolvers. While the coefficient on the underwriter serving as a lender is negative, it is not statistically significant. In light of the limited number of companies in which the underwriter was the lender, it is unlikely that Alternative 2, companies whose underwriters were their lenders underperform, explains the observed abnormal returns.

Alternatively, if the company has no debt, it has no lenders, and thus the underwriter is not a lender. The second and fourth specifications of Table 8 estimate the coefficient on a dummy variable equal to 1 if the company has no debt. The coefficient on this dummy is positive, but very small and not statistically significant. The sum of the coefficient on the no debt dummy variable and the constant is negative, indicating that even companies with no debt had negative abnormal returns when their underwriter failed. However, this test is not as robust as the previous one, because a company with no debt outstanding may still be exposed to the underwriter as a lender if the underwriter is a provider of an undrawn revolver.

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[13] Capital IQ lender data is not available historically. The database was accessed on May 21, 2008 and identifies lenders based on companies' most recent 10-K filings as of that date. If a company renegotiated its bank loan subsequent to the event date and filed a 10-K between the event date and May 21, 2008, the lender may be incorrectly identified. Expanding the definition of lender to include the ultimate acquirer of the underwriter (i.e. companies underwritten by Bear Stearns where JP Morgan is a lender) results in 14% of the database having the underwriter as lender, but does not change the results.

F. Market Making

Ellis, Michaely and O'Hara (2000) document that underwriters act as market makers in the month following an initial public offering, and document that price support lasts through the 20th day post-trading. The minimum time elapsed between IPO and event date was 98 days. Thus, at the time of their failures, the underwriters would be unlikely to be providing price support for the companies in this sample.

After the immediate post-IPO period, the underwriter may or may not act as a market maker. For example, while Innophos' IPO was lead underwritten by Credit Suisse, Bear Stearns and UBS, only Credit Suisse and UBS were among the top three market makers in the stock by 2008. [14] Of the four underwriters in the sample, only Bear Stearns and Lehman Brothers were NYSE specialists.

The detailed trading information used in Ellis, Michaely and O'Hara is not widely available, so it is difficult to measure directly the importance of underwriters as market makers. However, the NASTRAQ database provides a proxy for the underwriters' market making with detailed quote information for the 136 stocks traded on the NASDAQ market.

The quote data is from a random sample of one day of NASTRAQ quote data from December 31, 2007.[15] I follow Huang (2002) in omitting the following trades and quotes to minimize data errors: quotes with an ask price or bid price less than or equal to zero; quotes with an ask size or bid size less than or equal to zero; quotes with bid-ask spreads greater than $5 or less than zero; quotes associated with trading halts or

[14] Credit Suisse (20%), UBS (15%) and Morgan Stanley (8.4%) were the top 3 market makers in IPHS from IPO to 4/08.
[15] The results are robust to selecting a different day to estimate these measures.

designated order imbalances; before-the-open and after the-close trades and quotes; trades and quotes involving errors or corrections; trades with price or volume less than or equal to zero; ask quote, at, if $|(a_t - a_{t-1}) / a_{t-1}| > 0.50$; and bid quote, b_t, if $|(b_t - b_{t-1})/b_{t-1}| > 0.50$. When there are multiple quotes at the same second according to the time stamp the prevailing quote for each dealer is formed by taking the highest bid and the lowest offer.

I use the quote data to construct two measures of the underwriter's importance as a market maker. The first measure is a dummy variable equity to 1 if the underwriter had an inside quote. This would be equal to 1 if the underwriter had the highest bid or the lowest ask at any one hour interval in the day. The mean number of companies for which the underwriter had any inside quote was only 10%. The second measure is the aggregate dollar volume of the underwriter's quotes in a day (the sum of all the ask quotes plus the sum of all the bid quotes). The mean bid volume on that day was only $2,992 and the mean ask volume was only $3,177. These summary statistics confirm the anecdotal evidence that underwriters may not always be the primary market maker for their IPO underwriting clients after the immediate post-IPO period. In fact, the leading market maker for most of the companies was NASDAQ's super montage.

For companies traded on the NYSE and AMEX, I create a dummy variable equal to 1 if the underwriter was a specialist in the company's stock. To determine whether the underwriter was a specialist, I use the Internet Archive to access the client list of Bear Wagner (Bear Stearns' NYSE specialist subsidiary) as of June 2007. [16] If the company is listed as a company for which Bear Wagner is a specialist and Bear Stearns was the

[16] http://www.archive.org/index.php Previously known as the Wayback Machine, the Internet Archive is an Internet library offering permanent access to historical web pages. Bear Wagner information accessed at: http://web.archive.org/web/20070608213639/www.bearwagner.com/companies.html

underwriter, the specialist dummy variable will be equal to 1. Lehman Brothers has blocked access to its historical website, so a similar list of its specialist clients is not available. However, Barclay's currently operates Lehman Brothers' specialist firm. I accessed Barclay's list of specialist companies as of June 2009. If Barclay's is a specialist for a company as of June 2009, and Bear Wagner was not a specialist for the company[17], the specialist dummy variable will be equal to 1 for Lehman's underwriting clients. Of the 112 firms in the sample that were traded on the NYSE or AMEX, the underwriter was a specialist for 46 firms.

I aggregate the market making proxies, creating a market maker dummy variable equal to 1 if the underwriter had an inside quote or if the underwriter was a specialist in the company. By this definition, the underwriter was a market maker for 26% of the sample companies.

Table 9 shows the results of estimating the relationship between these proxies for the importance of the underwriter as a market maker and abnormal returns. I find no evidence to support Alternative 3, that companies whose underwriter was a market maker underperform. Companies whose underwriter was an active NASDAQ market maker had, if anything, higher abnormal returns. None of the specifications indicate a statistically significant relationship between the underwriter being a market maker and the company's abnormal return.

I estimated abnormal returns for an additional 543 companies for which Lehman and Bear Stearns served as NYSE specialists but not as an IPO underwriter. The average

[17] In addition to operating Lehman's specialist subsidiary, Barclay's purchased Bear Wagner in March 2009 from JP Morgan. Thus I effectively assume that no companies had both Lehman and Bear Wagner as specialists. The analysis is robust to relaxing this assumption.

abnormal return calculated relative to the NYSE benchmark was not statistically different from zero. This is significantly higher than the -1% abnormal return for the 46 NYSE/AMEX companies for which Lehman and Bear Stearns served as NYSE specialists and underwriters. This difference is complementary evidence that the underwriters' market making functions were not the primary drivers of the negative event date returns. This may be either because specialists are not important or because market participants assumed that the underwriters' market making functions would continue regardless of the outcome for the investment bank.

G. Investing

A final way in which an underwriter's failure may impact its clients' prices is through its role as an investor. The mechanism for this impact is two-fold. First, if any of the investment banks' asset management divisions were investors in these companies and these divisions disproportionately sold shares in connection with the failure, this would have a negative price impact. Second, even if underwriters' asset management affiliates did not actually sell their shares, market participants' fear of the price impact of a forced liquidation might depress prices.

CDA Spectrum data from the quarter preceding the event dates shows that in 95% of the issues, underwriters held less than 3% of the companies' stock. The analysis considers two measures of an underwriter's investment in the stock calculated from Spectrum data as of the quarter end preceding the event date: i) a dummy variable = 1 if the underwriter holds any shares (*UDUMMY*) and ii) the percentage of shares held by the underwriter (*UPER*). If a company is not in the Spectrum database, the underwriter

holding is assumed to be 0. The mean percentage of shares outstanding held by the underwriter was 0.6%. The coefficients on these measures are of different signs and the coefficient on the constant remains negative. Results presented in Table 10 do not support Alternative 4, that companies whose underwriters are stockholders will be the most negatively affected by the failure of their underwriter.

If the companies in which underwriters are investors have marginally worse abnormal returns, this may still indicate the presence of post-IPO information production by the underwriter. For example, Irvine, Simko and Nathan (2004) find that analysts affiliated with mutual fund investors have earnings estimates that are more accurate than forecasts of other analysts. If entities affiliated with the underwriter invest in companies underwritten by the bank, they may do so because they have a lower marginal cost of information production because of their underwriting affiliation.

H. Combined analysis

Finally, Table 11 aggregates the various analyses with the monitoring index described in Section VB. High levels of this index indicate that the underwriter is not an important monitor for the newly public company, either because the company has operations that are less opaque or because the company has many other monitors, or both. Specifications 5 and 10 of Table 11 include as explanatory values the monitoring index, the KZ index which proxies for equity dependence and the various measures of the underwriters' other functions. The monitoring index is positive and statistically significant in each specification, indicating that companies with low index values (high

information opacity and few other monitors) have the worst abnormal event date returns, even after controlling for their underwriter's role as a lender, investor or market maker.

I. Ex Post Updating

Each of the preceding analyses assumes a post-IPO role for the underwriter, be it information-based or not. Alternative 5 proposes that the banks' near failures led investors to update negatively on the quality of the trouble banks' underwriting clients. If this is the case, there should be no price impact when it is revealed that the underwriters will continue. I test this proposition by examining the post-event cumulative abnormal returns (*POSTCAR)* for 3 days following the event, t = +3 through +5.

I test the proposition that post-event cumulative abnormal returns are equal to zero by estimating:

$$POSTCAR_{i,t} = \alpha + \varepsilon_{i,t}$$

where $POSTCAR_{i,t}$ is the sum of daily abnormal returns of company i from the event date $t+3$ through t+5 and α measures the extent of the underperformance.

Table 12 shows the results of this test of cumulative abnormal returns for days 3 to 5 post-event. Once it is revealed that the investment banks will continue operations in some format, companies appear to outperform and earn back the negative event day returns.

V. Conclusion

For at least one day in 2008, the market believed that Bear Stearns, Lehman Brothers, Merrill Lynch and Wachovia might no longer be in business the following day.

These "failures" were exogenous to the banks' equity underwriting operations, and thus offer a natural experiment to estimate the impact of the loss of a primary investment banking relationship. On average, companies recently taken public by these banks suffered an abnormal decline in equity value of more than 1%, a total loss of more than $3 billion or 20% of the gross spread earned on the initial public offerings. This negative abnormal return implies that investment banks are important to their clients even after the IPO.

This paper presents evidence that investment banks are important because they are monitoring their post-IPO clients. The lowest abnormal returns were experienced by companies with fewer alternative monitors. The source of these abnormal returns was not the underwriters' function as a lender or market maker.

Despite initial uncertainty at the event date and Lehman Brothers' bankruptcy, the operations of all four banks were acquired by other banks and the underwriting function continued. Abnormal returns for each client were positive post-event, suggesting that once it was known that the banks' monitoring and information production function would be continued, the abnormal price decline was reversed. This suggests that the source of these abnormal returns was not negative updating after the underwriters' failures.

While none of these investment banks have ceased underwriting, the observed impact on past clients has important implications for future investment banking clients and investors in initial public offerings. These stakeholders may need to carefully evaluate the financial health of the underwriter's entire business, not just its underwriting skills. Uncertainty about the overall health of underwriters may reduce access to equity capital markets if underwriters can no longer credibly execute their certification and

monitoring role because investors fear that the underwriter may not be around to monitor the newly public company.

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FIGURE 1: MEAN DAILY RETURNS (0 = EVENT DATE)

The sample with troubled underwriter consists of the mean daily returns of 311 underwriter-company pairs with an IPO from 2004 to 2007 for which the failed underwriter was a bookwriter. IPO Index includes all companies with an IPO from 2004 to 2007 for which none of the failed underwriters were a lead or co-manager. Size and Book to Market is the mean return of a value weighted portfolio matched to each company in the sample by 25 size and book-to market quintiles. Nasdaq is the value weighted NASDAQ Composite Index.Dates are in event time with event date =0.

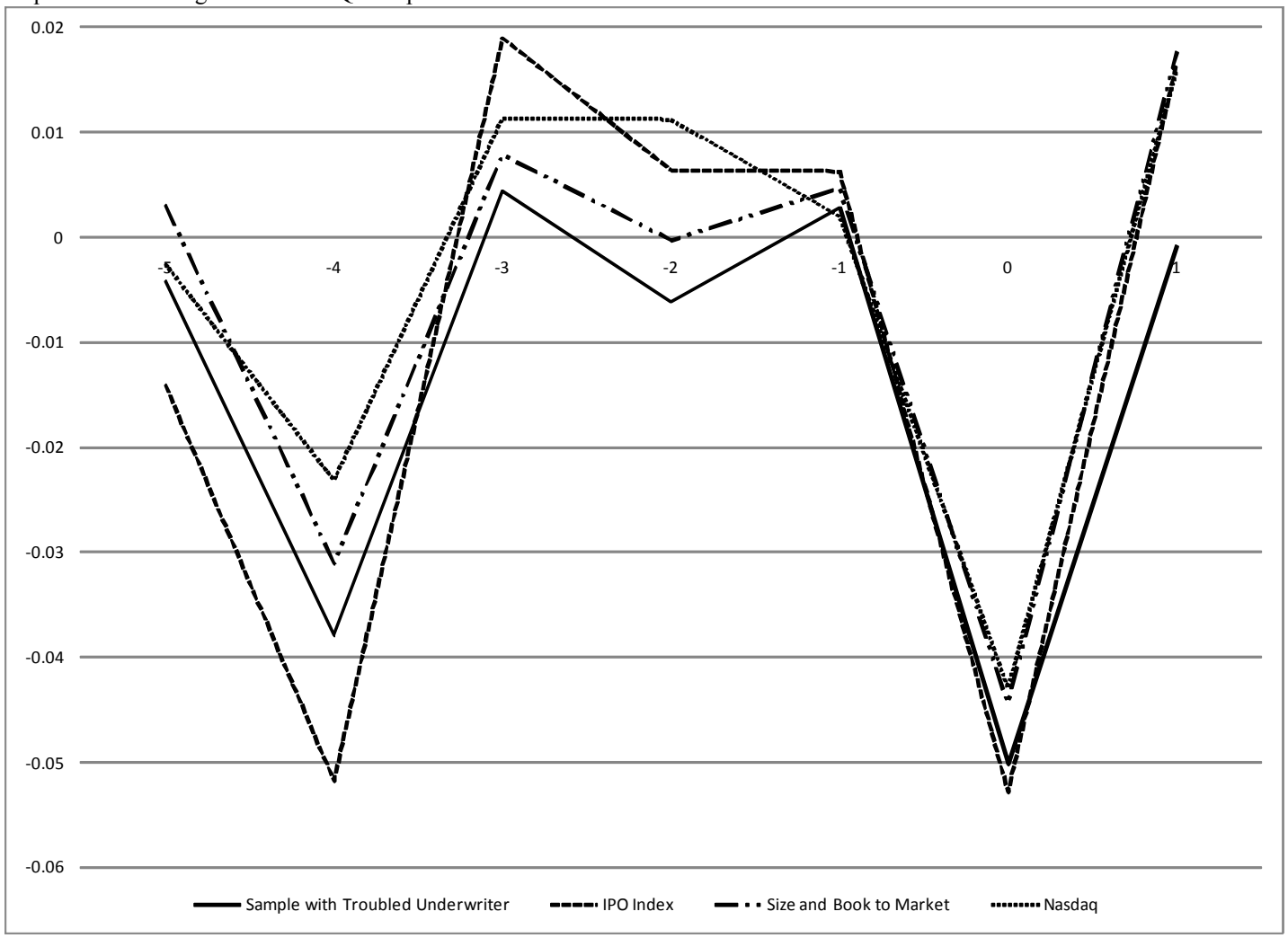

FIGURE 2: MEAN DAILY RETURNS OF COMPANIES (BY FAILED UNDERWRITER) (0 = EVENT DATE)

Merrill, Lehman, Bear Stearns and Wachovia IPOs are the mean daily returns of 311 underwriter-company pairs with an IPO from 2004 to 2007 underwritten by Merrill, Lehman, Bear Stearns and Wachovia, respectively. Dates are in event time with event date = 0.

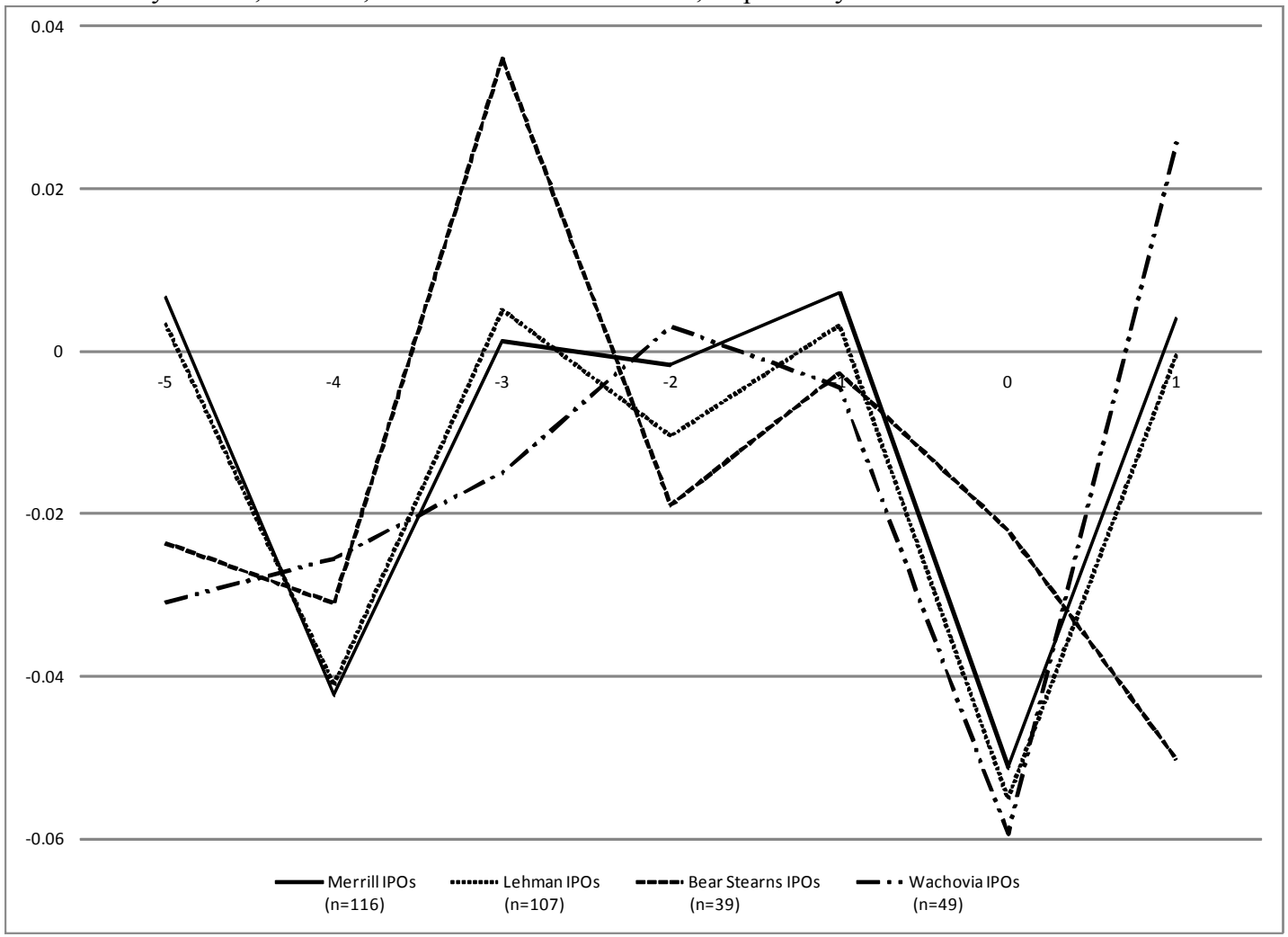

Table 1: Summary Statistics for Sample and IPO Index, by Event Date

The sample consists of 227 newly public companies with an IPO from 2004 to 2007 for which the failed underwriter was a bookwriter, for a total of 311 underwriter-company event day observations. IPO Index includes all companies with an IPO from 2004 to 2007 for which none of the failed underwriters were a lead or co-manager. Accounting variables are measured as of the fiscal quarter preceding the event date, price variables are measured as of 5 days prior to the event date. T-tests for difference were conducted between the IPO sample of companies underwritten by a troubled underwriter and the IPO Index, comprised of all other recent IPOs. Diff. = Mean(IPO Index) - Mean(Underwriter IPO sample). The null hypothesis is no difference in the means. ***, ** and * indicate difference is significant at the 1%, 5%, and 10% levels, respectively.

Underwriter		Lehman Brothers			Merrill Lynch			Wachovia			Bear Stearns			Total Sample		
Event Date		15-Sep-08			15-Sep-08			29-Sep-08			14-Mar-08			Event Date		
Variable		*Means*	*Diff.*		*Means*	*Diff.*		*Means*	*Diff.*		*Means*	*Diff.*		*Means*	*Diff.*	
Days since IPO	IPO Index	1,042.0	68.3		1,042.0	157.0	***	1,056.7	170.5		878.1	42.0		1,023.8	114.2	***
	Sample	973.7			885.0			886.2			836.1			909.6		
Sales LTM	IPO Index	362.2	-989.3	***	362.2	-500.1	***	362.2	-819.9	***	308.9	-656.8	***	355.5	-737.1	***
	Sample	1,351.4			862.2			1,182.0			965.7			1,092.6		
Total Assets	IPO Index	722.1	-1,879.2	***	722.1	-1,565.9	***	724.0	-1,961.9	***	655.9	-1,269.2	***	714.1	-1,696.4	***
	Sample	2,601.3			2,288.0			2,685.9			1,925.1			2,410.6		
Total Debt	IPO Index	236.9	-821.6	***	236.9	-574.5	***	236.9	-924.8	***	210.2	-550.2	**	233.6	-709.1	***
	Sample	1,058.6			811.4			1,161.7			760.5			942.7		
Leverage	IPO Index	0.2	-0.1247	***	0.2	-0.1007	***	0.2	-0.1976	***	0.2	-0.2	***	0.2	-0.1321	***
	Sample	0.3			0.3			0.4			0.4			0.3		
Net Income	IPO Index	3.3	2.4		3.3	-10.2		3.3	-3.8		2.0	20.0	*	3.1	-1.3	
	Sample	1.0			13.5			7.1			-18.0			4.5		
Market Value	IPO Index	481.6	-437.7	***	481.6	-286.4	**	438.0	-441.4	***	499.7	-553.8	***	477.0	-396.4	***
	Sample	919.3			768.0			879.4			1,053.5			873.4		
Book to Market	IPO Index	0.57	-0.95		0.57	-0.51		0.90	-0.11		0.68	-0.01		0.64	-0.53	*
	Sample	1.52			1.08			1.01			0.69			1.17		
Price to Earnings	IPO Index	62.2	25.9		62.2	23.5		62.7	58.4		-12.8	-28.6		52.9	22.6	
	Sample	36.4			38.7			4.2			15.8			30.3		
KZ Index	IPO Index	0.33	0.11		0.33	0.07		0.33	0.61		0.78	0.21		0.39	0.18	
	Sample	0.22			0.26			-0.28			0.57			0.21		
Venture Backed	IPO Index	0.45	0.18	***	0.45	0.12	**	0.45	0.33		0.46	0.21	**	0.45	0.19	***
	Sample	0.27			0.33			0.12			0.26			0.27		

Table 2: Mean Event Day Return

The sample consists of 227 newly public companies with an IPO from 2004 to 2007 for which the failed underwriter was a bookwriter, for a total of 311 underwriter-company event day observations. Returns for each market benchmark reflect a weighted average of event day returns, weighted by the proportion of newly public companies underwritten by a troubled underwriter for the appropriate event date. The Size and Book to Market benchmark is composed of 25 size and book to market quintile matched portfolios. The SIC benchmark portfolio is generated by value weighting all public companies in the same two-digit SIC code as each sample company. IPO Index is a value weighted portfolio composed of all companies with an IPO from 2004 to 2007 for which none of the failed underwriters were a lead or co-manager.

	Sample Return		Benchmark Return	
		SD		difference:
S&P 500 Index	-0.0502	0.0516	-0.0503	0.0000
NASDAQ	-0.0502	0.0516	-0.0430	-0.0072
NYSE Composite	-0.0502	0.0516	-0.0529	0.0027
CRSP	-0.0502	0.0516	-0.0483	-0.0019
Size and Book to Market	-0.0502	0.0516	-0.0444	-0.0058
SIC matched	-0.0502	0.0516	-0.0448	-0.0055
IPO Index	-0.0502	0.0516	-0.0529	0.0027

Table 3: Abnormal Return by Underwriter

Abnormal returns are the difference between the actual event day return and the conditional expected return calculated based on the listed benchmarks. The Size and Book to Market benchmark is composed of 25 size and book to market quintile matched portfolios. The SIC benchmark portfolio is generated by value weighting all public companies in the same two-digit SIC code as each sample company. IPO Index is a value weighted portfolio composed of all companies with an IPO from 2004 to 2007 for which none of the failed underwriters were a lead or co-manager.

		IPO Index	SIC Matched	NASDAQ Composite	NYSE	S&P 500	Size and Book to Market
	p25	-0.0459	-0.0458	-0.0565	-0.0489	-0.0521	-0.0519
Lehman	mean	-0.0221	-0.0229	-0.0302	-0.0167	-0.0227	-0.0196
	median	-0.0166	-0.0179	-0.0220	-0.0069	-0.0120	-0.0113
	p75	0.0076	0.0069	0.0080	0.0207	0.0142	0.0159
	N	107	107	107	107	107	107
	sd	0.0504	0.0534	0.0548	0.0589	0.0595	0.0541
		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	p25	-0.0294	-0.0219	-0.0218	-0.0241	-0.0256	-0.0147
Bear	mean	-0.0064	0.0003	-0.0003	0.0000	0.0005	0.0057
	median	-0.0083	-0.0052	-0.0025	-0.0016	-0.0028	0.0000
	p75	0.0081	0.0103	0.0135	0.0134	0.0133	0.0085
	N	39	39	39	39	39	39
	sd	0.0690	0.0764	0.0712	0.0726	0.0747	0.0833
		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	p25	-0.0239	-0.0187	-0.0185	-0.0102	-0.0117	-0.0352
Wachovia	mean	0.0021	0.0048	0.0221	0.0175	0.0177	-0.0026
	median	0.0077	0.0055	0.0156	0.0224	0.0188	0.0000
	p75	0.0275	0.0410	0.0576	0.0460	0.0457	0.0344
	N	49	49	49	49	49	49
	sd	0.0498	0.0522	0.0608	0.0564	0.0573	0.0549
		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	p25	-0.0388	-0.0428	-0.0467	-0.0362	-0.0435	-0.0377
Merrill	mean	-0.0151	-0.0199	-0.0208	-0.0055	-0.0106	-0.0133
	median	-0.0116	-0.0146	-0.0136	-0.0020	-0.0050	-0.0085
	p75	0.0056	0.0065	0.0036	0.0189	0.0152	0.0127
	N	116	116	116	116	116	116
	sd	0.0437	0.0429	0.0481	0.0516	0.0521	0.0475
		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	p25	-0.0378	-0.0392	-0.0430	-0.0345	-0.0409	-0.0365
	mean	-0.0137	-0.0145	-0.0147	-0.0050	-0.0089	-0.0114
	median	-0.0086	-0.0104	-0.0103	-0.0009	-0.0047	-0.0065
	p75	0.0102	0.0103	0.0135	0.0239	0.0188	0.0152
	N	311	311	311	311	311	311
	sd	0.0511	0.0540	0.0585	0.0587	0.0600	0.0568

Table 4: Event Date Abnormal Returns

The sample consists of 227 newly public companies with an IPO from 2004 to 2007 for which the failed underwriter was a bookwriter, for a total of 311 underwriter-company event day observations. The dependent variable is *Abnormal return*, the difference on the event day ($t = 0$) between the actual event day return and the conditional expected return calculated based on the listed benchmarks. The Size and Book to Market benchmark is composed of 25 size and book to market quintile matched portfolios. The SIC benchmark portfolio is generated by value weighting all public companies in the same two-digit SIC code as each sample company. IPO Index is a value weighted portfolio composed of all companies with an IPO from 2004 to 2007 for which none of the failed underwriters were a lead or co-manager. ***, ** and * indicate t-statistic is significant at the 1%, 5%, and 10% levels, respectively.

	Estimate	*[t-stat]*		N
S&P 500	-0.0089	*[2.63]*	***	311
NASDAQ Composite	-0.0147	*[4.44]*	***	311
NYSE	-0.0050	*[1.51]*		311
CRSP	-0.0067	*[2.01]*	**	311
Size and Book to Market Matched	-0.0114	*[3.52]*	***	311
IPO Index	-0.0137	*[4.73]*	***	311
SIC matched	-0.0145	*[4.74]*	***	311

Table 5: Summary Statistics for IPO Sample

The sample consists of 227 newly public companies with an IPO from 2004 to 2007 for which the failed underwriter was a bookwriter, for a total of 311 underwriter-company event day observations. IPO Index includes all companies with an IPO from 2004 to 2007 for which none of the failed underwriters were a lead or co-manager. Accounting and ownership variables are measured as of the fiscal quarter preceding the event date, price variables are measured as of 5 days prior to the event date, and market making variables are measured as of December 31, 2007.

				Distribution		
	N	Mean	*SD*	25th	50th	75th
Company Descriptors						
Sales LTM - $M	296	1,092.6	2,364.7	148.4	396.2	1,151.2
Total Assets - $M	303	2,410.6	5,204.4	303.9	832.2	2,255.8
Equity Market Value - $M	311	873.4	1,044.0	252.9	515.2	1,074.6
Total Debt - $M	281	942.7	2,212.0	15.0	304.3	784.0
Monitoring						
Days Since IPO	311	909.6	420.1	560.0	832.0	1,249.0
SD IBES EPS Estimates (1 yr)	301	0.1344	0.3375	0.0119	0.0299	0.0704
SD IBES EPS Estimates (2 yr)	300	0.1621	0.4536	0.0129	0.0291	0.0734
Number of Book Underwriters	311	2.2	1.0	2.0	2.0	3.0
Number of Equity Analysts	303	8.2	4.7	5.0	8.0	10.0
Underwriter est. less mean est.	212	0.0234	0.9158	-0.7500	0.0000	0.6339
% of shares held by institutions	311	0.5413	0.3256	0.2967	0.5153	0.7871
Percentage block size	311	0.0076	0.0050	0.0040	0.0069	0.0104
Venture Backed Dummy	311	0.2669	0.4430	0	0	1
Information Index	311	3.6	1.7	2.0	3.0	5.0
Equity Dependence						
KZ Index	280	0.2063	2.9003	-0.1474	0.5165	1.4544
Debt to Capital	257	0.4390	0.4934	0.0756	0.4072	0.6394
Cashflow to Capital	280	0.0892	0.2393	0.0239	0.1233	0.1866
Cash to Capital	279	0.3390	0.6623	0.0251	0.0815	0.3688
Tobin's Q	273	2.7903	4.3212	1.1499	1.5759	2.4997
Dividends to Capital	280	0.0329	0.0679	0.0000	0.0000	0.0328
Lending						
No Debt Dummy	281	0.1388	0.3463	0	0	0
Lender - Dummy	289	0.0173	0.1306	0	0	0
Market Making						
Inside Quote - Dummy	136	0.1029	0.3050	0	0	0
Market Maker - Dummy	311	0.2572	0.4378	0	0	1
Dollar Volume (Bid) - $100s	136	29.9	170.9	0	0	0
Dollar Volume (Ask) - $100s	136	31.8	178.7	0	0	0
Investing						
Dummy if Underwriter Holds Shares	311	0.3408	0.4748	0	0	1
% shares Held by Underwriter	311	0.0059	0.0326	0.0000	0.0000	0.0007

Table 6: Monitoring

The sample consists of 227 newly public companies with an IPO from 2004 to 2007 for which the failed underwriter was a bookwriter, for a total of 311 underwriter-company event day observations. The dependent variable is *Abnormal return*, the difference on the event day ($t = 0$) between the actual event day return and the conditional expected return calculated based on the IPO Index or the NASDAQ Composite Index. Expected sign indicates the expected relationship between the monitoring proxy and *Abnormal* returns. The monitoring proxies are: Log *Days Since IPO* is the logarithm of the number of days between the IPO file date and the event date. *Log Number of Equity Analysts* is the logarithm of the number of equity analysts for the company. *SD IBES EPS Estimates (1 yr)* is the standard deviation of the one year forward earnings per share estimates in IBES as of the event date. *SD IBES EPS Estimates (2 yr)* is the standard deviation of the two year forward earnings per share estimates in IBES as of the event date. *Underwriter estimate less mean estimate* is the difference between the one year forward underwriter estimate and mean estimate of equity analysts in IBES as of the event date. *% of shares held by institutions* is the percentage of total shares outstanding held by institutions as of the quarter preceding the event date. *% block size* is the average block size divided by shares outstanding as of the quarter preceding the event date. *Venture Backed Dummy* is a dummy variable equal to one if the company was venture backed at its IPO filing. *Log Number of Book Underwriters* is the logarithm of the number of book underwriters for the company at its IPO filing. Statistics calculated with standard errors robust to heteroskedasticity. Absolute value of t-statistics is in brackets. ***, ** and * indicate *p*-values of 1%, 5%, and 10%, respectively.

	Reference Portfolio	Expected Sign	IPO Index: Monitoring Proxy		IPO Index: Constant		IPO Index: Adjusted R-squared	NASDAQ: Monitoring Proxy		NASDAQ: Constant		NASDAQ: Adjusted R-squared	N
(1)	Log Days Since IPO	+	-0.0045		0.0161		0.0020	-0.0020		-0.0014		0.0003	311
			[0.85]		*[0.46]*			*[0.31]*		*[0.03]*			
(2)	SD IBES EPS	-	-0.0156		-0.0120	***	0.0106	-0.0142		-0.0128	***	0.0068	301
	Estimates (1 yr)		*[0.90]*		*[4.25]*			*[0.76]*		*[3.91]*			
(3)	SD IBES EPS	-	-0.0118		-0.0123	***	0.0108	-0.0113		-0.0129	***	0.0076	300
	Estimates (2 yr)		*[0.98]*		*[4.37]*			*[0.87]*		*[3.95]*			
(4)	Log Number of Book	+	0.0039		-0.0164	***	0.0012	0.0052		-0.0183	***	0.0017	311
	Underwriters		*[0.64]*		*[3.37]*			*[0.73]*		*[3.06]*			
(5)	Log Number of Equity	+	0.0040		-0.0228	*	0.0015	0.0052		-0.0262		0.0020	303
	Analysts		*[0.73]*		*[1.85]*			*[0.83]*		*[1.91]*			
(6)	Underwriter estimate less	-	-0.0011		-0.0193	***	0.0004	-0.0014		-0.0244	***	0.0005	212
	mean estimate		*[0.39]*		*[5.69]*			*[0.42]*		*[6.65]*			
(7)	% of shares held by	+	0.0203	***	-0.0247	***	0.0166	0.0307	***	-0.0313	***	0.0292	311
	institutions		*[2.85]*		*[5.49]*			*[3.71]*		*[6.17]*			
(8)	% block size	+	0.9116	*	-0.0207	***	0.0079	1.3531	**	-0.0251	***	0.0133	311
			[1.76]		*[4.39]*			*[2.14]*		*[4.37]*			
(9)	Venture Backed Dummy	+	0.0049		-0.0150	***	0.0018	0.0082		-0.0169	***	0.0039	311
			[0.96]		*[4.00]*			*[1.43]*		*[3.93]*			
(10)	Monitoring Index	+	0.0033	**	-0.0190	***	0.0077	0.0049	**	-0.0224	***	0.0124	311
			[1.85]		*[4.00]*			*[2.28]*		*[4.22]*			

Table 7: Relationship Underwriting (Equity Dependence)

The sample consists of 227 newly public companies with an IPO from 2004 to 2007 for which the failed underwriter was a bookwriter, for a total of 311 underwriter-company event day observations. The dependent variable is *Abnormal return*, the difference on the event day ($t = 0$) between the actual event day return and the conditional expected return calculated based on the IPO Index or the NASDAQ Composite Index. *KZ Index* is an index of equity dependence based on Kaplan and Zingales (1997) as calculated by Lamont, Polk, and Saa-Requejo (2001). *Debt to Capital* is total debt divided by total assets. *Cashflow to Capital* is operating income before depreciation divided by total assets. *Cash to Capital* is cash and equivalents divided by total assets. *Tobin's Q* is the ratio of total equity market value plus total assets minus book value all over total assets. *Dividends to Capital* is yearly cash dividends divided by total assets. Statistics calculated with standard errors robust to heteroskedasticity. Absolute value of t-statistics is in brackets. ***, ** and * indicate *p*-values of 1%, 5%, and 10%, respectively.

	Reference Portfolio	IPO Index				NASDAQ				N
		Equity Dependence Proxy		Constant	Adjusted R-squared	Equity Dependence Proxy		Constant	Adjusted R-squared	
(1)	KZ Index	-0.0007		-0.0158 ***	0.0020	-0.0007		-0.0178 ***	0.0013	280
		[0.80]		*[5.56]*		*[0.63]*		*[5.47]*		
(2)	Debt to Capital	-0.0055		-0.0146 ***	0.0032	-0.0056		-0.0173 ***	0.0026	257
		[1.35]		*[4.05]*		*[1.13]*		*[4.16]*		
(3)	Cashflow to Capital	0.0191		-0.0176 ***	0.0092	0.0103		-0.0188 ***	0.0021	280
		[1.15]		*[5.08]*		*[0.54]*		*[4.92]*		
(4)	Cash to Capital	0.0043		-0.0174 ***	0.0035	0.0056	**	-0.0198 ***	0.0047	279
		[1.42]		*[5.58]*		*[2.01]*		*[5.55]*		
(5)	Tobin's Q	0.0012	***	-0.0195 ***	0.0124	0.0004		-0.0186 ***	0.0010	273
		[2.73]		*[5.72]*		*[0.61]*		*[4.76]*		
(6)	Dividends to Capital	0.0199		-0.0166 ***	0.0008	-0.0111		-0.0175 ***	0.0002	280
		[0.50]		*[5.10]*		*[0.23]*		*[4.77]*		

Table 8: Relationship Lending

The sample consists of 227 newly public companies with an IPO from 2004 to 2007 for which the failed underwriter was a bookwriter, for a total of 311 underwriter-company event day observations. The dependent variable is *Abnormal return*, the difference on the event day ($t = 0$) between the actual event day return and the conditional expected return calculated based on the IPO Index for specifications 1 and 2 and the Nasdaq Index for specifications 3 and 4. *No Debt Dummy* is a dummy variable equal to one if the firm has no debt. *Underwriter is Lender* is a dummy variable that is equal to one if the underwriter is identified as a lender to the company as of the most recent 10-K filing. Statistics calculated with standard errors robust to heteroskedasticity. Absolute value of t-statistics is in brackets. ***, ** and * indicate *p*-values of 1%, 5%, and 10%, respectively.

Reference Portfolio	IPO Index				Nasdaq			
	(1)		(2)		(3)		(4)	
Constant	-0.0145	***	-0.0161	***	-0.0157	***	-0.0180	***
	[5.08]		*[5.04]*		*[4.79]*		*[4.92]*	
No Debt Dummy			0.0034				0.0030	
			[0.56]				*[0.44]*	
Underwriter is Lender	-0.0154				-0.0091			
	[1.49]				*[0.76]*			
Adjusted R-squared	0.0018		0.0006		0.0005		0.0004	
Number of Observations	289		281		289		281	

Table 9: Market Making

The sample consists of 129 companies for whom Nastraq quote data was available on 12/1/2007. The dependent variable is *Abnormal return*, the difference on the event day ($t = 0$) between the actual event day return and the conditional expected return calculated based on the IPO Index for specifications 1 through 4 or the NASDAQ Index for specifications 5 through 8. *Underwriter had Inside Quote* is a dummy variable equal to one if the underwriter of the company was a market maker and had either the lowest ask or the highest bid at least once during the trading day. *Underwriter was Market Maker* is a dummy variable that is equal to one if the underwriter had an inside quote on NASTRAQ or was the NYSE or AMEX specialist for the company. *Dollar Volume (Bid/Ask)* is the product of the bid(ask) price and bid(ask) size. Statistics calculated with standard errors robust to heteroskedasticity. Absolute value of t-statistics is in brackets. ***, ** and * indicate *p*-values of 1%, 5%, and 10%, respectively.

Reference Portfolio	IPO Index								Nasdaq							
	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)	
Constant	-0.0157	***	-0.0133	***	-0.0144	***	-0.0144	***	-0.0171	***	-0.0150	***	-0.0138	***	-0.0138	***
	[3.60]		*[3.82]*		*[3.47]*		*[3.47]*		*[3.69]*		*[3.87]*		*[3.03]*		*[3.03]*	
Underwriter had Inside	0.0173								0.0390	**						
Quote (NASTRAQ)	*[1.61]*								*[2.47]*							
Underwriter was			-0.0017								0.0010					
Market Maker			*[0.27]*								*[0.13]*					
Dollar Volume (Bid)					0.0000								0.0000			
					[1.49]								*[1.05]*			
Dollar Volume (Ask)							0.0000								0.0000	
							[1.48]								*[1.05]*	
Number of Observations	136		311		136		136		136		311		136		136	
Adjusted R-Squared	0.0000		0.0000		0.0000		0.0000		0.0000		0.0000		0.0000		0.0000	

Table 10: Investing

The sample consists of 227 newly public companies with an IPO from 2004 to 2007 for which the failed underwriter was a bookwriter, for a total of 311 underwriter-company event day observations. The dependent variable is *Abnormal return*, the difference on the event day ($t = 0$) between the actual event day return and the conditional expected return calculated based on the IPO Index for specifications 1 and 2 or the NASDAQ Index for specifications 3 and 4. *Dummy if Underwriter Holds Shares is* a dummy variable equal to one if the underwriter held any shares of the company as of the quarter preceding the event date. *% shares Held by Underwriter* is the number of shares held by the underwriter divided by total shares outstanding for the company as of the quarter preceding the event date. Statistics calculated with standard errors robust to heteroskedasticity. Absolute value of t-statistics is in brackets. ***, ** and * indicate *p*-values of 1%, 5%, and 10%, respectively.

Reference Portfolio	IPO Index				Nasdaq			
	(1)		(2)		(3)		(4)	
Constant	-0.0182	***	-0.0133	***	-0.0192	***	-0.0138	***
	[5.30]		*[4.49]*		*[4.99]*		*[4.11]*	
Dummy if Underwriter Holds Shares	0.0130	**			0.0131	*		
	[2.07]				*[1.80]*			
% shares Held by Underwriter			-0.0722				-0.1472	**
			[1.60]				*[2.44]*	
Adjusted R-Squared	0.0146		0.0021		0.0113		0.0067	
Number of Observations	311		311		311		311	

Table 11: Combined Analysis

The sample consists of 227 newly public companies with an IPO from 2004 to 2007 for which the failed underwriter was a bookwriter, for a total of 311 underwriter-company event day observations. The dependent variable is *Abnormal return*, the difference on the event day ($t = 0$) between the actual event day return and the conditional expected return calculated based on the IPO Index for specifications 1 through 5 or the NASDAQ Index for specifications 5 through 10. Monitoring Index is the sum of 9 measures for which a maximum value of 9 for a company with all information opacity measures in the bottom quartile and all measures of other monitors in the top quartile. *KZ Index* is an index of equity dependence based on Kaplan and Zingales (1997) as calculated by Lamont, Polk, and Saa-Requejo (2001). *Underwriter is Lender* is a dummy variable that is equal to one if the underwriter is identified as a lender to the company as of the most recent 10-K filing. *Underwriter was Market Maker* is a dummy variable that is equal to one if the underwriter had an inside quote on NASTRAQ or was the NYSE or AMEX specialist for the company. *% shares Held by Underwriter* is the number of shares held by the underwriter divided by total shares outstanding for the company as of the quarter preceding the event date. Statistics calculated with standard errors robust to heteroskedasticity. Absolute value of t-statistics is in brackets. ***, ** and * indicate *p*-values of 1%, 5%, and 10%, respectively.

	IPO Index										Nasdaq									
	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)		(10)	
Constant	-0.0190	***	-0.0233	***	-0.0235	***	-0.0230	***	-0.0235	***	-0.0224	***	-0.0281	***	-0.028	***	-0.0269	***	-0.0276	***
	[4.00]		*[5.05]*		*[4.79]*		*[4.60]*		*[4.24]*		*[4.22]*		*[5.45]*		*[5.15]*		*[4.87]*		*[4.66]*	
Information Index	0.0033	*	0.0048	***	0.0048	**	0.0047	**	0.0047	**	0.0049	**	0.0066	***	0.0065	***	0.0063	***	0.0063	***
	[1.85]		*[2.64]*		*[2.53]*		*[2.47]*		*[2.47]*		*[2.28]*		*[3.09]*		*[2.94]*		*[2.85]*		*[2.84]*	
KZ Index			-0.0010		-0.0010		-0.0010		-0.0010				-0.0011		-0.001		-0.0011		-0.0011	
			[1.04]		*[1.03]*		*[1.04]*		*[1.03]*				*[0.94]*		*[0.91]*		*[0.92]*		*[0.91]*	
Underwriter is					-0.0090		-0.0093		-0.0096						-0.0008		-0.0016		-0.002	
Lender - Dummy					*[0.77]*		*[0.80]*		*[0.81]*						*[0.06]*		*[0.12]*		*[0.14]*	
% Shares Held							-0.0459		-0.0449								-0.1098	*	-0.1082	*
by Underwriter							*[1.13]*		*[1.07]*								*[1.95]*		*[1.89]*	
Underwriter was									0.0016										0.0026	
Market Maker									*[0.25]*										*[0.34]*	
Adjusted R-Squared	0.0077		0.0205		0.0214		0.0225		0.0227		0.0124		0.0279		0.0267		0.0315		0.032	
Number of Obs.	311		280		270		270		270		311		280		270		270		270	

Table 12: Post Event Date Abnormal Returns

The sample consists of 227 newly public companies with an IPO from 2004 to 2007 for which the failed underwriter was a bookwriter, for a total of 311 underwriter-company event day observations. The dependent variable is *Abnormal return*, the cumulative difference on days t = +3 to +7 between the actual event day return and the conditional expected return calculated based on the listed benchmarks. The Size and Book to Market benchmark is composed of 25 size and book to market quintile matched portfolios. The SIC benchmark portfolio is generated by generating a matched portfolio for each company of all public companies in the same two-digit SIC code. IPO Index is a portfolio composed of all companies with an IPO from 2004 to 2007 for which none of the failed underwriters were a lead or co-manager. ***, ** and * indicate t-statistic is significant at the 1%, 5%, and 10% levels, respectively.

	Estimate	*[t-stat]*		N
S&P 500	0.0146	*[2.04]*	**	311
NASDAQ Composite	0.0133	*[1.87]*	*	311
NYSE	0.0003	*[0.04]*		311
CRSP	0.0109	*[1.55]*		311
Size and Book to Market Matched	0.0087	*[1.27]*		311
IPO Index	0.0072	*[1.06]*		311
SIC matched	0.0167	*[2.48]*	**	311