

The Economic Consequences of IPO Spinning

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Abstract

Using a sample of 56 companies going public in 1996-2000 in which top executives received allocations of other hot initial public offerings (IPOs) from the bookrunner, a practice known as spinning, we examine the consequences of spinning. The 56 IPOs had first-day returns that were, on average, 23% higher than similar IPOs. The profits collected by these executives were only a small fraction of the incremental amount of money left on the table by their companies when they went public. These companies were dramatically less likely to switch investment bankers in a follow-on offer: only 6% of issuers whose executives were spun switched underwriters, whereas 31% of other issuers switched. These findings suggest that the spinning of executives accomplished its goal of affecting corporate decisions. (*JEL* G24, G28)

Keywords: Spinning, IPOs, SEOs, Underpricing

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The Economic Consequences of IPO Spinning

Spinning is the allocation by underwriters of the shares of hot initial public offerings (IPOs) to company executives in order to influence their decisions in the hiring of investment bankers and/or the pricing of their own company's IPO. The term "spinning" refers to the fact that the shares are often immediately sold in the aftermarket, or "spun," for a quick profit, and an IPO is termed "hot" if it is expected to jump in price as soon as it starts trading.

IPO spinning is one of the four scandals associated with IPOs that have been the subject of regulatory settlements following the collapse of the technology stock bubble of 1999-2000.¹ The other three practices, laddering, analyst conflicts of interest, and the exchange of soft dollar commission business in return for IPO allocations, are examined either theoretically or empirically by Hao (2007), Cliff and Denis (2004), and Reuter (2006), respectively. Although spinning has attracted much regulatory and legal attention, resulting in large settlements and the prosecution of several executives, the effect of spinning on corporate actions has not been examined in a systematic manner because of the lack of publicly available data on which executives were being spun. Only Loughran and Ritter (2004) discuss spinning in the academic financial literature, although Maynard (2002) and Griffin (2004) discuss the legal issues.

In the IPO literature, the issue of IPO underpricing and its time-series variation is of considerable interest. In particular, the average first-day return of U.S. IPOs increased from 7% in 1980-1989 to 15% in 1990-1998 and then exploded to more than 65% in the 1999-2000 bubble period, before falling back to 12% in 2001-2008. This variation has been the subject of study in Loughran and Ritter (2004), who propose a changing issuer objective function hypothesis, which consists of two parts. The first part, the analyst lust hypothesis, has been tested and confirmed by Cliff and Denis (2004). However, the second part, the spinning hypothesis, has not been tested empirically, mainly due to the lack of data.

¹ See, e.g., the October 1, 2003 JP Morgan settlement with the SEC over laddering at <http://www.sec.gov/litigation/litleases/lr18385.htm>. See the January 9, 2003 NASD settlement with Robertson Stephens for trading IPO allocations for commissions at <http://www.finra.org/Newsroom/NewsReleases/2003/P002957>. Also see the 'Global Settlement' joint press release on April 28, 2003 for settlement details regarding IPO spinning and analyst conflicts of interest at <http://www.sec.gov/news/press/2003-54.htm>.

In this paper, we fill this void. For our empirical analysis, we use data gathered from court cases, the media, and internal company documents requested through the Freedom of Information Act. From these sources, we obtain data on 146 officers and directors at 56 companies that were recipients of hot IPO allocations. All of these companies were taken public by Deutsche Morgan Grenfell (DMG), Credit Suisse First Boston (CSFB), and Salomon Smith Barney (SSB) in 1996-2000.

There is evidence in Securities and Exchange Commission (SEC) settlements and Congressional testimony that Piper Jaffray, Goldman Sachs, and other investment banking firms also engaged in spinning.² Our empirical analysis, however, is restricted to IPOs for which DMG, CSFB, or SSB was the bookrunner.³ The reason that we impose this restriction is that the companies identified in press reports and settlements suffer from a selection bias, frequently containing examples of prominent executives at well-known companies. In contrast, the data for the three investment banking firms that we focus on is systematic, composed of all of the executives who were being systematically spun by CSFB as of March 21, 2000; executives who were being spun by CSFB and lived in Silicon Valley, including those being spun after March 21, 2000; or those being spun by SSB at any time in 1996-2000. For each executive that had a brokerage account with the SSB unit in charge of spinning, we have data on the allocations to each executive for 48 IPOs.

We estimate the effect of spinning on IPO underpricing and the awarding of future investment banking mandates. The effect of spinning on IPO underpricing is a direct test of Loughran and Ritter's (2004) spinning hypothesis, which states that executives who receive side payments from underwriters, in the form of shares in other companies that are going public, put less emphasis on maximizing the proceeds from their own IPO, resulting in the IPO being more underpriced. We find that holding everything else constant, IPOs in which the executives are

² See Randall Smith, "Goldman Gave Hot IPO Shares to Top Executives of Its Clients," *Wall Street Journal*, Oct. 3, 2002. Also see the July 12, 2004 National Association of Securities Dealers (NASD) press release at <http://www.finra.org/PressRoom/NewsReleases/2004NewsReleases/index.htm> regarding Piper Jaffray's settlement with the NASD.

³ Frank Quattrone, an investment banker associated with "Friend of Frank" brokerage accounts for the spinning of corporate executives, was head of technology investment banking at DMG from mid-1996 to June 30, 1998, and then head of technology investment banking at CSFB from mid-1998 until his forced resignation in 2003. Consequently, we restrict our sample to tech IPOs at DMG from July 1, 1996 to June 30, 1998; tech IPOs at CSFB from July 1, 1998 to December 31, 2000, and all IPOs at Smith Barney from July 1, 1997 and Salomon Brothers from January 1, 1996 until their merger at the end of 1997, and then SSB until December 31, 2000.

being spun are 23% more underpriced (e.g., 43% vs. 20%). The average dollar value of this incremental underpricing, the incremental money left on the table, is approximately \$17 million, where money left on the table is the underpricing per share multiplied by the number of shares issued. The average first-day profit received from hot IPO allocations by the executives of a company being spun is \$1.3 million. The ratio of these numbers indicates that only 8% of the incremental amount of money left on the table flows back to the executives being spun.

The effect of spinning on subsequent investment banking mandates relates to the literature that asks why firms do or do not switch underwriters (Dunbar, 2000; Krigman, Shaw, and Womack, 2001; Burch, Nanda, and Warther, 2005; and Ljungqvist, Marston, and Wilhelm, 2006, 2009). This literature has focused on performance dissatisfaction, graduation to a more prestigious underwriter, and analyst coverage reasons as factors that affect switching decisions. We add another reason, the co-opting of executive decision-makers, to this list. We find that companies with executives who are being spun are dramatically less likely to switch underwriters for their first seasoned equity offering. For companies not being spun, the probability of switching underwriters is 31%. For companies being spun, the probability of switching is only 6%.

More generally, this paper presents evidence on the economic consequences of an agency problem arising from the delegation of decision-making to corporate managers. Rarely, however, are there direct measures of the benefits received by executives and the costs imposed on other shareholders as a result of actions that provide personal benefits to top executives. In this paper, we are able to calculate the costs and benefits of spinning.

1. Background and Hypothesis Development

Although spinning first attracted public attention following the disclosure of the practice by Siconolfi (1997) in a *Wall Street Journal* article, it was not a new practice. As Siconolfi's article discusses, allocating hot IPOs to corporate executives, many of whom are wealthy individuals, had occurred for many years. During the late 1990s, however, receiving hot IPO allocations became more lucrative as more and more IPOs were severely underpriced. In 1999-2000, the average first-day return reached 65%. In these two years, a total of \$68 billion was left on the table by IPOs (Loughran and Ritter, 2004). As any economist would predict, rent-seeking activity flourished. Spinning eventually caught the attention of regulatory agencies.

The 2003 Global Settlement, in which 10 investment banks agreed to pay \$1.4 billion in fines, restitution, and subsidization of independent research, states that CSFB and SSB engaged in inappropriate hot IPO allocations.⁴ The Global Settlement included a voluntary ban on the allocation of hot IPOs to executive officers and directors of public companies, which has subsequently been incorporated into the proposed NASD Rule 2712.⁵ As for the recipients of spinning shares, the New York State Attorney General prosecuted five executives of telecommunication (telecom) companies, including Philip F. Anschutz, the founder of Qwest Communications International Inc., who agreed to pay \$4.4 million to charities and educational institutions for allegedly profiting from IPO spinning.⁶ Another Qwest executive, Executive Vice President Marc Weisberg, agreed to plead guilty in 2005 to criminal charges regarding the undisclosed receipt of hot IPO shares.⁷

With bookbuilt IPOs, if there is excess demand at the offer price the bookrunner has discretion in the allocation of shares.⁸ Although there are typically discussions of an expected

⁴ See the SEC press release from April 28, 2003 at www.sec.gov/news/press/2003-54.htm regarding CSFB and SSB's settlements. The Global Settlement between the SEC, NASD, NYSE, and various states, and 10 (subsequently 12) major investment banking firms involved fines, restitution, and payments for independent research, as well as commitments to change many industry practices regarding biased analyst research and IPO allocations.

⁵ In the August 2002 *Notice to Members 02-55*, the National Association of Securities Dealers (NASD), one of the predecessors of the Financial Industry Regulatory Authority (FINRA), proposed Rule 2712 and the amendment of existing Rule 2710 to "prohibit certain IPO allocation abuses." Specifically, "Rule 2712(c) would expressly prohibit a member and its associated persons from allocating IPO shares to an executive or director of a company on the condition that the executive officer or director, on behalf of the company, direct future investment banking business to the member. The rule also would prohibit IPO allocations to an executive officer or director as consideration for directing investment banking services previously rendered by the member to the company. ...NASD also is proposing to amend Rule 2710, the Corporate Financing Rule, to require that members file information regarding the allocation of IPO shares to executive officers and directors of a company that hires a member to be the book-running managing underwriter of the company's IPO."

⁶ The five telecom executives who were originally charged are Philip F. Anschutz, Bernard J. Ebbers, Stephen A. Garofalo, Clark E. McLeod, and Joseph P. Nacchio. All five executives settled.

⁷ On December 28, 2005, Weisberg pled guilty to one count of wire fraud. He was subsequently sentenced to 60 days house arrest and two years probation, and fined \$250,000. He also agreed to cooperate with prosecutors in the insider trading prosecution of former Qwest CEO Joseph Nacchio, who was subsequently convicted on insider trading charges. Weisberg's case is unusual in that he went out of his way to solicit IPO allocations for his personal account, and did not disclose his actions to other Qwest executives, even when explicitly questioned.

⁸ All bookrunners are lead underwriters, but not all lead underwriters are bookrunners. During our sample period, the vast majority of IPOs had a sole lead underwriter, which was also the bookrunner. The bookrunner is in charge of allocating shares, especially to institutional investors, although some of this activity may be delegated to the other underwriters in a syndicate. We use the term underwriter and bookrunner interchangeably in much of the paper, although in our empirical work we assume that only bookrunners have allocation and pricing authority.

offer price at the time that an issuing firm chooses a lead underwriter, the final offer price is not set until the pricing meeting, which typically occurs the afternoon before trading commences. From an underwriter's point of view, the determination of the final offer price is based on the competition between two opposing forces. On the one hand, underwriters prefer a high offer price because it yields higher gross spread revenue.⁹ On the other hand, a low offer price reduces the risk of an unsuccessful placement. More importantly, underwriters can allocate these underpriced shares to investors in exchange for commission business, to executives to sway their decision in choosing which investment banking firm to hire, or the shares can be allocated by the firm itself through a "friends and family" program.

When shares are allocated to executives for spinning or to individuals through a friends and family program, there is an opportunity cost to the underwriter because it does not have the ability to collect soft dollars in return for underpriced IPO allocations. (Soft dollars are the commissions paid by institutional investors that are in excess of direct execution costs.) These soft dollars, paid by rent-seeking institutional investors, create an incentive for the underwriter to underprice IPOs, and to attract IPOs that will be severely underpriced (Fulghieri and Spiegel, 1993; Loughran and Ritter, 2002). Attracting underpriced IPOs is one of the reasons that underwriters are willing to incur the opportunity cost of allocating some IPO shares for spinning and friends and family programs.

Theoretical models of IPO underpricing can be categorized on the basis of whether or not there is an agency problem between issuers and underwriters. Non-agency theories explain IPO underpricing using a framework whereby investors have to be convinced to buy IPOs by being given an inducement in the form of underpriced shares. Agency theories, in contrast, assume that there is more underpricing than necessary to induce investors to purchase IPOs. Baron and Holmstrom (1980), Baron (1982), Loughran and Ritter (2002, 2004), and Ljungqvist and Wilhelm (2003) all argue that underwriters want to underprice IPOs. These theories, however, do not explain why issuing firms would hire an underwriter that has a reputation for ex post taking advantage of its informational advantage or its bargaining power at the pricing meeting, with one exception.

⁹ The gross spread is the fee that investment bankers receive on securities offerings. During our sample period, over 90% of moderate-size IPOs had a gross spread of exactly 7%, suggesting that the percentage spread is not an important choice variable for the issuer. For a \$10 offer price with a 7% gross spread, the issuing firm would receive net proceeds per share of \$9.30, and investment bankers would receive underwriting revenue of \$0.70.

Loughran and Ritter (2004) provide an explanation for why issuing companies would hire an underwriter that is expected to leave more money on the table than necessary to complete the IPO. They posit that the issuer's objective function has three components:

$$\alpha_1 \text{IPO Proceeds} + \alpha_2 \text{Proceeds from Future Sales} + \alpha_3 \text{Side Payments}, \quad (1)$$

where $\alpha_1 + \alpha_2 + \alpha_3 = 1$. They assume that the proceeds from future sales are boosted by bullish coverage from influential analysts.

Side payments in the form of allocations of shares in other companies going public create an incentive for issuers to seek, rather than avoid, underwriters with a reputation for severe underpricing. The more hot IPOs that are being underwritten by a given investment banker, the more are the number of shares available to allocate to the executives being spun. This logic would predict that issuers would also seek out underwriters with a large market share, resulting in "the rich getting richer." Consistent with the desire of issuers whose executives are being spun to seek an underwriter with many underpriced IPOs to allocate, Hoberg (2007) documents that some underwriters persistently have more underpricing than others, without suffering a decline in market share.

Most of the IPO literature has implicitly or explicitly assumed that the first term in equation (1) is the only term that enters the objective function of issuers. If the issuing firm's executives are less concerned with maximizing IPO proceeds, however, greater underpricing will result. Loughran and Ritter (2004) argue that the second term (the analyst lust hypothesis) and the third term (the spinning hypothesis) are relevant at least some of the time, and that α_2 and α_3 were positive in the 1990s and especially during the bubble period years of 1999 and 2000. They posit that underwriters bundle analyst coverage with IPO underwriting, and that buy recommendations from influential analysts can affect the expected proceeds from future sales. Future sales include both follow-on offers and open-market sales by shareholders.

The arguments for why analyst lust and spinning lead to greater underpricing are similar to the Ljungqvist and Wilhelm (2003) argument for why friends and family programs lead to greater underpricing: the issuing firm's executives are less concerned with maximizing IPO proceeds (or the IPO offer price) than if that was their sole focus. Ljungqvist and Wilhelm posit that friends and family programs create an incentive for issuing firm executives to accept more

underpricing, because they don't want to disappoint the people that are receiving these share allocations.

The analyst lust hypothesis has been tested by Cliff and Denis (2004), who examine the effect of all-star analyst coverage on IPO underpricing. Consistent with the Cliff and Denis results for 1993-2000, our regression results indicate that coverage by an all-star analyst employed by the IPO's bookrunner is associated with 15% more underpricing for IPOs in 1996-2000. In addition, Dunbar (2000) and Clarke, Khorana, Patel, and Rau (2007) examine the effect of all-stars on underwriter market share, and find that having an all-star analyst boosts the investment bank's market share in the relevant industry.

Unlike the analyst lust hypothesis, there has been no direct test of the spinning hypothesis. If the bookrunner is being chosen partly on the basis of side payments to executives, the issuer will place less emphasis on receiving the highest possible offer price. Thus, our first testable hypothesis:

Spinning's Effect on IPO Underpricing: Since issuing company executives are less likely to maximize IPO proceeds if they receive personal benefits, a firm whose decision-makers receive hot IPO allocations from an underwriter will have its IPO underpriced more, ceteris paribus.

It is worth noting that in the survey of 336 CFOs who attempted to take their companies public in 2000-2002, Brau and Fawcett (2006) report in their Table IV that 8.5% of CFOs considered the underwriter's reputation for spinning as an important consideration in selecting a lead underwriter. Also, 6% of respondents in their Table V were of the opinion that the underpricing of their IPO was affected by the desire of underwriters to make spinning possible.

Spinning may be used by the underwriter to acquire IPO mandates and influence IPO pricing, but it can also be used as part of a long-term business strategy with a given company to attract future investment banking mandates. As stated in the documents that we quote in Section 2 concerning the underwriter's motivation for spinning, underwriters want executives to steer future investment banking business to them and the underwriters considered ways to reduce or eliminate IPO allocations to executives who changed employment or are no longer influential. This suggests that companies whose executives are receiving hot IPO allocations from a given

underwriter are more likely to hire this underwriter in future deals, leading to our second testable hypothesis:

Spinning's Effect on Investment Banking Mandates: A firm is more likely to use an underwriter for its next investment banking transaction if its decision-makers receive hot IPO allocations from this underwriter.

The tests of these two hypotheses are carried out in Sections 4 and 5.

2. Documents Concerning the Motivation for Spinning by Underwriters

2.1 Spinning at DMG and CSFB

Perhaps the most egregious spinning was that done by Frank Quattrone, the head of technology investment banking at Deutsche Morgan Grenfell (DMG) from mid-1996 to mid-1998, and then the head of technology investment banking at Credit Suisse First Boston (CSFB) from mid-1998 until his forced resignation on March 4, 2003. When Quattrone left DMG, almost all of the employees reporting to him also moved to CSFB. Indeed, the exodus was so total that DMG was left with an empty office building in Silicon Valley, which DMG promptly subleased to CSFB. As a result, the employees who switched employers were able to continue working without even having to move their desks (Elkind and Gimein, 2001).

At CSFB, Quattrone was the Managing Director of the Technology Group's Investment Banking Division. When Quattrone was hired, CSFB set up an organizational structure in which Technology equity research, Technology Private Client Services (brokerage for high net worth individuals), and Technology corporate finance (investment banking) all reported directly to him. Beginning in March 1999, he established formal "Friend of Frank" accounts for individuals that he wanted to influence. As stated in a 2003 NASD regulatory settlement with CSFB:¹⁰

Quattrone established the Technology PCS (Private Client Services) Group to be part of the Technology Group. The Director of Technology PCS had a primary and direct reporting responsibility to Quattrone... Technology PCS focused exclusively on the

¹⁰ See Section 5 of the NASD Letter of Acceptance, Waiver, and Consent (AWC) No. CAF030026 between the NASD and CSFB on April 21, 2003. The AWC states that "CSFB hereby accepts and consents, without admitting or denying the allegations and findings, ...the following findings by NASD". The AWC can be found at <http://www.finra.org/web/groups/enforcement/documents/enforcement/p007670.pdf>

technology sector. Technology PCS operated independently of CSFB's other PCS brokers. The Technology PCS client base consisted, almost exclusively, of officers of investment banking clients of the Technology Group.

From approximately March 1999 through April 2001, Technology PCS improperly allocated "hot" IPO stock to executives of investment banking clients and improperly managed the purchase and sale of that stock through discretionary trading accounts. CSFB's Technology Group gave improper preferential treatment to these company executives with the belief and expectation that the executives would steer investment banking business for their companies to CSFB...

Pitchbooks used by the Technology Group to win an issuer's investment banking business referenced the discretionary accounts. Consistent with those references and representations made at "pitches," an issuer had to award CSFB its investment banking mandate before the issuer's officers were afforded the opportunity to open discretionary accounts and given access to IPO shares by CSFB. Likewise, CSFB considered ways to reduce or eliminate IPO allocations to executives who changed employment and were no longer affiliated with those companies.

Once Technology Group received a mandate, Technology PCS established discretionary accounts for executives who were considered to be "strategic." "Strategic" was commonly understood by Quattrone and Technology PCS managers to refer to the overall business relationship CSFB had with the issuer, including potential future investment banking business. The head of Technology PCS defined "strategic" as "senior decision makers" at existing or prospective investment banking clients of the Technology Group who could influence their companies' choice of investment banker.

Technology PCS did not apply standard CSFB qualification standards (i.e. assets under management, trading revenue production, length of the brokerage relationship, etc.) for the opening of these discretionary accounts. Instead, the decision was based largely on the executive's position and influence in the company.... These discretionary accounts were limited to the purchase and sale of stock purchased through CSFB IPOs. The account holders were not permitted to buy or sell other securities in these accounts.

...In some cases, all the shares allocated to discretionary accounts were sold for a profit on the IPO's first day of trading in the secondary market.

2.2 Spinning at SSB

Salomon Smith Barney (SSB) spun corporate executives as part of a strategy for attracting and retaining investment banking business from their companies. Internal SSB documents repeatedly state or imply that company executives should be given preferential treatment in their personal finances because these executives have the power to direct corporate

business to SSB. For example, the July 10, 1997 memo from internal auditor Bob Zinnel to Howard Kerbel at Salomon Brothers states:¹¹

Most of PWMG's [Private Wealth Management Group's] clients have been brought into the Firm through Investment Banking relationships. In many respects, PWMG acts as a conduit in keeping client relationships alive which also helps to bring in more business to the Investment Bank.

The most infamous executive that SSB spun was Bernie Ebbers, the former CEO of WorldCom, who is currently serving 25 years in a federal prison for securities fraud. Ebbers and WorldCom are not in our sample because the predecessor company of WorldCom, LDDS, had gone public before our sample period starts in 1996. LDDS became public in 1989 through a reverse merger with a publicly traded company, Advantage Companies, Inc. Ebbers received allocations of 21 IPOs from SSB in 1996-2001, with first-day profits of \$5,603,665. During this time period, WorldCom generated \$115,488,000 in investment banking fees for SSB.¹²

3. Data

3.1 Sample formation

We start with 2,285 U.S. IPOs from 1996 to 2000 meeting criteria that are common in the empirical IPO literature. We exclude closed-end funds, REITs, ADRs, banks and S&Ls, unit offers, partnerships, and IPOs with an offer price of less than \$5.00 per share.

Most of our analysis focuses on a sample consisting of 196 IPOs in 1996 to 2000 for which Deutsche Morgan Grenfell (DMG), Salomon Smith Barney (SSB), or Credit Suisse First Boston (CSFB) was a bookrunner. In counting these IPOs, we include only IPOs for which the bookrunner was i) DMG from July 1996 to June 1998, ii) CSFB from July 1998 to December

¹¹ Exhibit 17 of *Exhibits to Plaintiffs' Statement of Material Undisputed Facts in State of New York and Eliot Spitzer, Attorney General of the State of New York, for and on Behalf of the People of the State of New York vs. Bernard J. Ebbers and Clark E. McLeod, Defendants.*

¹² These numbers are from documents supplied by Citigroup to the U.S. House of Representatives Committee on Financial Services in 2002 and paragraph 141 of the April 21, 2003 Assurance of Discontinuance (AOD) portion of the Global Settlement. Information on the allocations of each of the 21 IPOs to Ebbers is available on request from the authors.

2000 *and* the CSFB technology group took credit in their end-of-year brochures,¹³ or iii) Salomon Smith Barney or its predecessors from 1996 to 2000.¹⁴ The periods and industry restrictions for DMG and CSFB correspond to the periods during which Frank Quattrone was head of technology investment banking at these firms.

Of these 196 IPOs, there are 56 IPOs in which executives were being spun (five out of 11 DMG IPOs in 1996-1998, 35 out of 89 CSFB IPOs in 1998-2000, and 16 out of 100 SSB IPOs in 1996-2000). Four of these IPOs had both CSFB and SSB as joint bookrunners, which is why there are 200 bookrunners for 196 IPOs.

Our spinning data come from three sources. The five DMG IPOs and 31 of the CSFB IPOs are identified from Government Exhibit 2051 in the first trial of Frank Quattrone on obstruction of justice and witness tampering charges.¹⁵ This exhibit, an Excel file labeled Tech_allocation.xls, contains the names of 205 individuals with “Friend of Frank” accounts with CSFB as of the week prior to March 21, 2000, according to the e-mail from CSFB broker Mike Grunwald to Frank Quattrone on that date containing this file as an attachment. The spreadsheet contains the name, account number, and affiliation (title and company name) of each individual, along with a spinning priority designation.

¹³ Based upon SIC codes and Internet-related status, we independently tabulate 89 IPOs for which CSFB was a bookrunner during the relevant time period. Our tabulation includes two IPOs (University of Phoenix Online and Garmin, Ltd) that the CSFB tech group did not take credit for, and excludes two IPOs for which they did (TiVo and Symyx Technologies). Our qualitative results are unchanged whether we use the 89 IPOs from our tabulation or the 89 from the CSFB tabulation.

¹⁴ SSB was created in November 1997 through the merger of Salomon Brothers with the Smith Barney division of Travelers, which subsequently merged with Citibank in 1998 to create Citigroup. Salomon Brothers was systematically involved in spinning starting in 1997 or earlier, so we include Salomon Brothers IPOs from January 1996 through the merger to create SSB, and Smith Barney IPOs from July 1997 (after the merger was announced) through the merger to create SSB. SSB IPOs are included through the end of December, 2000. We use SSB to refer to all three of these underwriters during the periods that are defined in this footnote.

¹⁵ Quattrone was alleged to have sent an e-mail to the employees reporting to him that encouraged them to destroy records after he had been informed by CSFB’s chief counsel that a government investigation of CSFB’s IPO allocation practices was underway. This instruction led to the obstruction of justice and witness tampering charges. Quattrone’s first trial ended with a mistrial on October 24, 2003 due to a hung jury, and his second trial ended on May 3, 2004 with convictions on all three counts. On March 20, 2006, the Second Circuit Court of Appeals overturned the convictions on grounds of improper jury instructions, while noting that there were sufficient grounds for conviction on all three counts. On August 22, 2006, prosecutors offered Quattrone a “deferred prosecution agreement” under which the government would drop all charges if Quattrone did not violate any laws during the following year. The dismissal of charges against Quattrone was formally approved on August 30, 2007.

We match the company names to a listing of IPOs from the respective time periods for which DMG or CSFB was a bookrunner.¹⁶ Not all of the people listed in the Excel file are associated with an IPO from the relevant period and underwriter. Because some of the individuals are associated with venture capital firms or firms that did not go public during the relevant time periods with DMG or CSFB as a bookrunner, the list of 205 names yields 83 names associated with 31 CSFB IPOs and five DMG IPOs.¹⁷

The 31 CSFB IPOs with executives being spun is augmented with a list of “63 Silicon Valley ‘Friends of Frank’” associated with 24 separate Silicon Valley companies published in the March 7, 2003 *San Jose Mercury News*. This list overlaps the Excel file list, but provides four additional IPOs for which Friend of Frank accounts had been set up for executives, apparently after mid-March 2000. The *San Jose Mercury News* list provides the number of IPOs that each executive was allocated, and the aggregate first-day profits earned by each of these executives if all of the allocations had been sold at the first closing market price.

The five DMG and 35 CSFB IPOs do not represent all of the IPOs from those investment banks for which executives were being spun. We do not have the names of about 80 individuals with Friend of Frank accounts who opened the account after mid-March, 2000 and did not live in Silicon Valley. Furthermore, other executives were being spun in a less systematic manner through CSFB brokerage accounts for which the stockbroker did not have discretion over trading in the account.¹⁸

The 16 IPOs from Salomon Smith Barney (SSB) in which executives were spun are identified by comparing the IPOs underwritten by SSB in 1996-2000 with the individual recipients, by name, of shares in 48 SSB IPOs for which we have allocation data. Because SSB’s

¹⁶ For two individuals (Mark Breier and Joe Caffarelli), the company that they were affiliated with is apparently incorrect in the CSFB spreadsheet as a result of sloppiness. In several other cases, the individual had changed jobs, although we use the company affiliation at the time of the IPO. There are two executives who have multiple accounts, using trusts or additional family members, so the 208 accounts generate 205 distinct names.

¹⁷ There is a potential survivorship bias issue with the DMG IPOs, since all of these were completed prior to July 1998, when Frank Quattrone and most of his team moved from DMG to CSFB. We do not know if some of the executives of DMG IPOs from before July 1998 had a Friend of Frank account that was subsequently terminated prior to March 2000. We also do not know the date on which a personal brokerage account was established for any of the 208 Friend of Frank accounts, although the list is apparently in chronological order of when the accounts were established.

¹⁸ We contacted several executives of CSFB IPOs who did not have a “Friend of Frank” account and asked them why. A variety of explanations were offered by those who were willing to talk. One individual said he didn’t get along with Frank Quattrone. Another said that he was spun, but in an *ad hoc* manner.

spinning was done through just two stockbrokers, we inspected the client list of these two stockbrokers. The information about share allocations to individuals for these 48 IPOs was obtained through a Freedom of Information Act request made to the New York State Office of the Attorney General.

We classify an SSB IPO as having had the executives spun if a top executive of the company received allocations starting within one year of its date of going public from at least one of these 48 IPOs. For example, the Chief Financial Officer (CFO) of Focal Communications, Joseph Beatty, received IPO allocations in 16 different IPOs from SSB beginning shortly after Focal's IPO. Consequently, we classify Focal Communications as having been spun. In contrast, we classify McLeod as not spun for both our IPO and SEO analysis even though its CEO was spun, since the spinning of its CEO did not start until 15 months after its IPO (and 10 months after its first SEO). We identified the top executives of the 100 IPOs for which SSB was a bookrunner during 1996-2000 (the names of the executives are listed in the prospectuses), and identified the matches between IPO share recipients and these executives. If an executive bought shares in his or her own IPO, we do not include this allocation. Sixteen companies, primarily in the telecommunications industry, had a total of 58 executives who received nontrivial allocations of shares in multiple IPOs. Because we have data for only 48 IPOs for which SSB allocated shares, our estimates of the first-day profits received by the executives are a lower bound estimate of their aggregate first-day gains.

Appendix Table A1 provides a list of the data sources and a detailed description of the variables used in our analysis. In the Internet Appendix Table IA-1, we list the 56 companies for which executives were being spun. We also list the names and titles of the 146 executives being spun, and, where available, the number of IPOs received, the first-day profits, and their priority for being spun.

3.2 Description of the sample

Table 1 presents descriptive statistics categorized by spinning versus non-spinning companies for the 196 IPOs underwritten by DMG, CSFB, and SSB that meet our sample criteria. We report the means and medians for firm-specific and IPO-related variables separately for 1996-1998 (the pre-bubble period) and 1999-2000 (the bubble period) because underpricing was much more severe during the bubble period. 68 (35%) IPOs are from the pre-bubble period and 128 (65%) are from the bubble period. There are 56 companies whose executives were spun,

representing 29% of the sample IPOs. Of these, 15 companies went public in the pre-bubble period, while 41 companies went public in the bubble period, suggesting that spinning was more prevalent in the bubble period.

The patterns across the subperiods are somewhat mixed due to the influence of two outliers. AT&T Wireless, an SSB IPO, and VA Linux, a CSFB IPO, both of which are classified as non-spinning companies, have a disproportionate effect on the means in 1999-2000. The April 2000 IPO of AT&T Wireless, with SSB, Merrill Lynch, and Goldman Sachs as joint bookrunners, was the largest IPO in U.S. history at the time, raising \$11.3 billion. The December 1999 IPO of VA Linux was priced at \$30 per share and closed at \$239.25, up 697.5%, leaving over \$920 million on the table (not including the overallotment option, whose inclusion boosts the total amount of money left on the table to over \$1 billion).¹⁹ To reduce the effects of outliers, we winsorize the first-day returns at the 1st and 99th percentiles, based on the return distribution for all 2,285 IPOs in the 1996-2000 period.

In Table 1, univariate sorts of spinning versus nonspinning IPOs show that spinning firms are younger, smaller, and more likely to be backed by a venture capitalist. The sorts also show that spinning firms are more likely to have an offer price that is revised upward from the midpoint of the file price range and to have a higher level of underpricing.

3.3 Further details on spinning

Of the 56 IPOs for which executives were being spun, we have data on the first-day profits of the executives for 36 of them. Table 2 provides summary statistics for these 36 IPOs. Panel A reports statistics for 20 companies for which CSFB was spinning the executives, and Panel B reports statistics for 16 companies for which SSB was spinning the executives. The averages in Table 2 are calculated using the company as a unit.

Of the executives that are being spun at a given company, as a group they averaged first-day profits of \$1,253,000 (\$1,691,000 at CSFB and \$705,000 at SSB), shared by an average of about three executives. Our SSB numbers are lower bounds, however, because we have data on allocations from only 48 IPOs, and the true numbers may be similar to those from CSFB.

In the most extreme cases, 16 executives from a single firm (Qwest Communications) received a total of at least 164 IPO allocations from SSB, generating an aggregate of \$8.03

¹⁹ We contacted the CEO of VA Linux at the time of the IPO, and he refused to discuss whether he had received IPO allocations from CSFB.

million in first-day profits, and 12 executives from another firm (Phone.com) received a total of 651 IPO allocations from CSFB, generating an aggregate of \$9.30 million in first-day profits.

Panel B of Table 2 shows that for SSB, the average period over which an individual executive was spun equals 2.2 years, despite the cessation of spinning in 2001. The extended spinning periods suggest that underwriters viewed spinning as an important activity aimed at facilitating a long-term relationship with corporate clients.

3.4. Further details on the executives being spun

If the spinning of executives is designed to influence corporate decisions, then more influential executives should receive greater spinning profits. Table 3 presents summary statistics sorted by the position held by executives being spun. We restrict the sample in Table 3 to the 36 companies for which we have the number of IPOs allocated to each executive. Since some executives assume multiple titles, we categorize the executives on the basis of their highest position. We order the titles from highest to lowest as Chief Executive Officer (CEO), Chairman of the Board, President, Chief Financial Officer (CFO), Other Executives, and Director.

Panel A of Table 3 shows that of the 54 executives from 20 companies who were being spun by CSFB during 2000, 16 are CEOs. Panel B shows that of the 58 executives from 16 companies who were being spun by SSB during 1996 to 2000, 14 are CEOs. In both Panels A and B, the CEOs on average received more first-day profits from their IPO allocations than did less influential executives. Taking a weighted average of the two panels, in Panel C we report that the mean first-day profit is \$519,598 for the 30 CEOs, and \$360,005 for the 82 other officers and directors.

The results in Table 3 suggest that executives receive IPO allocations based on their position in the firm. Consistent with this, for the DMG and CSFB IPOs listed in Internet Appendix Table IA-1, the executives for which we have spinning priority codes have a mean of 2.04 for the 24 CEOs with this information, and a mean of 2.87 for the 31 vice presidents, CFOs, and chief technology officers. A priority code of 1 is the highest priority and a code of 4 is the lowest. This pattern of more influential executives being favored is consistent with the motivations for spinning shown in the quotations in Section 2: underwriters want to influence those with the most say in the firm regarding investment banking decisions, in order to extract the most return out of this investment.

An alternative explanation for the greater profits of CEOs is that they were wealthier individuals, and thus received bigger IPO allocations for this reason. Inconsistent with this explanation, however, is that CSFB's Friend of Frank accounts required the same deposit for all account holders, irrespective of their wealth, and that all executives with the same priority code received the same number of shares in a given IPO. Furthermore, none of the documents that we have seen relate the share allocations to the account size or wealth of the individual, although the title and company affiliation are always listed.

4. The Effect of Spinning on IPO Underpricing

4.1 OLS regressions for the spinning sample

To estimate the quantitative effect of spinning on IPO underpricing, Table 4 presents ordinary least squares (OLS) regressions in which the level of underpricing (the percentage first-day return from the offer price to the closing price, winsorized at the 1% and 99%iles) is the dependent variable. We use the firm characteristic variables $\ln(\text{assets})$, $\ln(1+\text{age})$, a tech dummy, an Internet dummy, and a venture capital dummy as control variables. In addition, we include share overhang, defined as the ratio of retained shares to the public float (shares issued), as an additional control variable (see Bradley and Jordan, 2002). This variable captures both incentive effects and valuation effects.²⁰ Three additional dummy variables are a bubble dummy (equal to one if an IPO takes place in 1999-2000, and zero otherwise), a spin dummy (equal to one if the executives of the company going public were being spun by the bookrunner, and zero otherwise), and an all-star analyst coverage dummy (equal to one if the company is covered by an *Institutional Investor* all-star analyst employed by a bookrunner within 12 months of the IPO, and zero otherwise).²¹ We do not include in the regressions the percentage revision from the

²⁰ The incentive effect interpretation is that the smaller the fraction of the firm sold (and therefore the higher the overhang), the less is the incentive of the issuer to limit underpricing. The valuation effect interpretation is that if the firm is going to raise a fixed amount of money, the higher the valuation on the firm, the lower is the fraction that must be sold (and therefore the higher the overhang). A high valuation is likely to be correlated with greater uncertainty about the company's valuation, possibly resulting in greater expected underpricing.

²¹ We use a dummy variable to proxy for spinning status instead of a continuous variable because a continuous variable based on the ex-post first day profit suffers from look-ahead bias. Since the spinning decision is made on a yes or no basis and the exact profit from spinning is not known at the time of decision, a dummy variable is more appropriate.

midpoint of the file range to the offer price. This offer price revision variable has high predictive power, but it is very likely to be endogenous.²² The regression equation is as follows:

$$\begin{aligned} \text{First-Day Return}_i = & a_0 + a_1 \ln(\text{Assets})_i + a_2 \ln(1+\text{Age})_i + a_3 \text{Tech Dummy}_i + \\ & a_4 \text{Internet Dummy}_i + a_5 \text{Share Overhang}_i + a_6 \text{VC Dummy}_i + a_7 \text{All-star} \\ & \text{Dummy}_i + a_8 \text{Spin Dummy}_i + a_9 \text{Bubble Dummy}_i + e_i, \end{aligned}$$

where e_i is the residual for IPO i . This specification is similar to that used by Cliff and Denis (2004) and Loughran and Ritter (2004), among others.

In rows 1, 2, and 3 of Table 4, regression results using the sample of 196 IPOs from 1996-2000 underwritten by DMG, CSFB, and SSB and meeting our sample selection criteria are reported. The only difference among the three rows is that row 2 includes an all-star analyst coverage dummy and row 3 includes an additional spin dummy. The coefficient on the all-star coverage dummy does not seem to be affected by adding the spin dummy in row 3. The coefficient of 22.68 ($t=1.96$) on the spin dummy indicates that, everything else the same, the first-day return was 22.68% higher when the executives of the issuing firm were spun. The row 3 coefficient on the all-star dummy of 9.89 ($t=1.03$) indicates that all-star analyst coverage is associated with 9.89% greater underpricing, although the effect is smaller and less significant than the magnitudes reported in Cliff and Denis (2004) and in Table 5 in the next sub-section of this paper.

In row 4 of Table 4, only IPOs from 1996 to 1998 are used. For this subperiod, the coefficient on the spin dummy variable is 17.42 ($t=2.76$), suggesting that IPOs in which the executives were being spun had first-day returns that were 17.42% higher. Thus, during 1996-1998, the 23.5% of the IPOs with executives being spun were underpriced substantially more than other IPOs from these underwriters.

²² Especially during 1999-2000, some IPOs used what was called a “walkup strategy” in which the file price was set low, with the expectation of an upward revision in order to create the impression of a “hot issue.” For the issuers, there is a risk involved with agreeing to a walkup strategy, since the underwriters may use their bargaining power to ex-post take advantage of the issuer and set too low an offer price. This holdup risk may be of less concern for spinning firms due to less of a focus on maximizing IPO proceeds, which implies a positive relation between the use of a walkup strategy and spinning. This hypothesized relation poses a problem with estimating the effect of spinning on underpricing if the price revision is included, since this relation suggests that the price revision will take some explanatory power from spinning in explaining underpricing. This problem should be less severe in the pre-bubble period. Our unreported empirical results are consistent with these predictions.

In row 5 of Table 4, the bubble period coefficient on the spin dummy variable is 26.36, indicating that IPOs for which there was spinning had first-day returns that were 26.36% higher. The coefficient has a *t*-stat of 1.71, which is statistically significant only at the 10% level. This lower significance level in the bubble subperiod is due to the high standard errors, which are approximately 2.5 times as large as for the pre-bubble period, despite a sample size that is almost 90% higher (128 vs. 68 IPOs). This reflects the much higher variance of first-day returns during 1999-2000.

4.2 OLS regressions for the entire sample

In Table 4, we reported regression results using a sample of 196 IPOs from 1996 to 2000 for which DMG, CSFB, or SSB was a bookrunner. In Table 5, we use the full sample of 2,285 IPOs from 1996 to 2000 for which complete data are available. Furthermore, we add one additional explanatory variable, a top-tier underwriter dummy variable. We did not include this in the Table 4 regressions because DMG, CSFB, and SSB are all top-tier underwriters. The top-tier dummy variable is assigned a value of one (zero otherwise) if at least one of the lead underwriters has a Carter-Manaster (1990) ranking of 8 or above on a 1-9 scale. As many authors have noted, the choice of a top-tier lead underwriter is endogenous. Loughran and Ritter (2004), however, show that using an instrument for top-tier status does not materially affect the parameter estimate, and in unreported results we confirm this for our sample.

We classify the sample of 2,285 IPOs into three categories with respect to spinning, with 56 IPOs from DMG, CSFB, and SSB classified as having been spun, 140 IPOs from DMG, CSFB, and SSB classified as non-spun, and the remaining 2,089 IPOs from other underwriters classified as of uncertain status because we do not have information on them. In order to compare spinning IPOs versus non-spinning IPOs, holding other things constant, we use dummies to indicate whether the firm is spun or the IPO's spinning status is unknown, with non-spinning IPOs as the base case.²³

The Table 5 regressions show that, both for 1996-2000 as a whole and for each of the two subperiods, IPOs in which the executives received IPO allocations were underpriced by an economically significant amount more than if no spinning occurred, with a point estimate of

²³ When using non-spinning IPOs as the base case, we are implicitly assuming that the underpricing of these IPOs is "normal." In other words, the IPOs that are not spun are not more underpriced because they have chosen a spinning underwriter. Empirically, we do not find evidence that these non-spinning IPOs from DMG, CSFB, and SSB are more underpriced than they otherwise would be.

27.81% ($t=2.64$) for the whole sample period. In row 3, the point estimate of underpricing for IPOs of unknown spinning status is 6.34%, although this is not statistically significant at conventional levels ($t=1.25$). The ratio of these coefficients, $6.34/27.81 = 0.23$, suggests that 23% of IPOs may have been spun.

To summarize, the regression results in Tables 4 and 5 are consistent with the spinning hypothesis prediction that, holding everything else constant, IPOs whose executives are being spun are more underpriced.²⁴ Furthermore, the magnitude is economically significant. The Table 5 regression results also support the analyst lust hypothesis, confirming the findings of Cliff and Denis (2004). For 1996-2000, the row 3 coefficient on the all-star analyst dummy variable implies 15.20% ($t=4.48$) more underpricing when a bookrunner has an all-star analyst who subsequently covers the company within a year of the IPO.

The subperiod results in rows 4 and 5 of Table 5 show that spinning firms are 16.07% more underpriced ($t=2.39$) during 1996-1998 and 27.52% ($t=1.91$) more underpriced during 1999-2000 than non-spinning firms. These subperiod coefficients are similar to those in Table 4 and the magnitudes suggest that underpricing due to spinning is higher in the bubble period than in the pre-bubble period, although the coefficients are not reliably different from each other. Taking the ratio of the bubble period coefficients on the unknown spinning dummy and the spinning dummy of $8.16/27.52 = 0.30$ suggests that 30% of IPOs may have been spun during the bubble period.

Using these results, we can estimate the amount of underpricing that can be attributed to the analyst lust and spinning hypotheses during the bubble period, when underpricing averaged 65%. In our sample of 2,285 IPOs, 20% of the IPOs in the bubble period received coverage from an all-star analyst. The coefficient on the all-star dummy from row 5 of Table 5 is 18.45, suggesting that analyst lust can account for 3.7% of the average underpricing in that period. If we assume that 30% of all IPOs in the bubble period are being spun, then the coefficient of 27.52 in row 5 of Table 5 translates into 8.3% additional underpricing due to spinning. Combining both analyst lust and spinning yields 12% in underpricing in the bubble period. Thus, of the 65%

²⁴ Spinning has largely ceased since 2000. In unreported out-of-sample tests, we compare the average underpricing of the underwriters involved in spinning (DMG, CSFB, and SSB) with the average underpricing of other underwriters. The prediction is that IPOs underwritten by the spinning underwriters should have significantly higher underpricing than IPOs underwritten by other underwriters in the 1996-2000 period and the average underpricing should not be significantly different across the underwriter groups in the 2001-2008 period. Our results are consistent with this prediction.

average underpricing in the bubble period, we estimate that spinning together with analyst lust can explain about 12% of the 65% average underpricing.

4.3 Endogeneity issues

In this subsection, we present two alternative explanations of the relation between underpricing and spinning, based on the assumption that the causality goes from underpricing to spinning, rather than from spinning to underpricing as we have assumed. The first alternative is that underwriters might have a higher propensity to spin the executives of IPOs with high first-day runups as a way of compensating the executives for leaving a large amount of money on the table. If this is the case, then causality is going from high returns to spinning.

There are several reasons to doubt this explanation. First, we have not seen or heard of any evidence that hot IPO allocations were withheld from the executives of firms with low first-day returns. In fact, several of the firms in our dataset that were spun had a negative first-day return. Second, the promise of IPO allocations was generally made at the time of underwriter selection before a firm went public, and the promises were not conditioned on first-day performance, as far as we know. Although the Friend of Frank account list does not indicate at what stage in the going public process each account is opened, we can see from the regulatory settlement quoted in Section 2 and from indirect evidence that the accounts are typically opened before the IPO. Furthermore, the March 2000 Excel file shows a number of executives that had just opened a Friend of Frank account although their companies never went public due to the tech bubble collapse after March 2000.²⁵

As a second alternative explanation that relates spinning to underpricing, suppose that some IPOs are expected to be severely underpriced for some unobserved exogenous reason. These IPOs are the most attractive underwriting clients, so underwriters would want to spin these executives to win the mandate even if spinning has no effect on the subsequent offer price. This suggests that the unobserved exogenous factor is affecting both the decision to spin and the level of underpricing. If this unobserved factor is not accounted for in the underpricing regression, then the spin variable will be endogenous.

²⁵ Specifically, four executives from DoveBid, Inc., three from SupplierMarket.com, and two from AllAdvantage.com are listed on the March 2000 Excel spreadsheet. All three of these companies filed in February or March 2000 to go public, but later withdrew their offerings.

To address the possibility that spinning may be endogenous, we conduct a two-stage estimation procedure similar to those used in Lowry and Shu (2002) and Cliff and Denis (2004). In the first stage, we estimate a probit regression for spinning and an OLS regression for underpricing where the complete set of exogenous variables are included. The fitted values from the first stage regressions are then used as instruments in the second stage regressions, where the standard errors are corrected based on Maddala (1983). The complete set of variables includes control variables that are used in both regressions, variables that are used to identify spinning, and variables that are used to identify underpricing. The common control variables consist of $\ln(\text{assets})$, $\ln(1+\text{age})$, the technology dummy, the Internet dummy, and the venture capital backing dummy.

In choosing variables that can be used to identify spinning, but not underpricing, we consider the underwriter's motivation for offering spinning and the issuer's likelihood of accepting spinning. Conceptually, underwriters are more likely to offer spinning to firms that are in greater need of investment banking services in the future, such as for a follow-on offering. To proxy for the likelihood of using external financing, we use the ratio of capital expenditure/assets from the fiscal year prior to the IPO and the growth rate of sales over the two most recent fiscal years.²⁶ To proxy for how attractive a stream of imperfectly correlated side payments would be to executives with undiversified and illiquid positions in their company, we use the fraction of pre-issue equity owned by insiders, defined as all officers and directors as a group.

In addition, personal relations may play a role since some executives were not offered spinning because they did not get along with Frank Quattrone, as implied by the name of the account: "Friend of Frank." To proxy for personal ties, we use a dummy variable *instate* to account for the physical proximity of the issuing firm's headquarter to the location of the underwriter's spinning desk since physical closeness may increase the amount of contacts and foster personal relations.²⁷ As for issuers, those with low ethical standards should be more willing to accept side payments. To control for this factor, we create a low ethics proxy based on

²⁶ For firms without sales data in either year t-1 or t-2, their sales growth numbers are set to the median sales growth of 0.869 per year. Sales growth is measured as the proportional change in sales from year t-2 to year t-1, with fiscal year t=0 being the year of the IPO.

²⁷ For IPOs underwritten by DMG or CSFB, *instate* is one if the IPO firm is located in California, where Frank Quattrone's technology group resided, and zero otherwise. Similarly, for IPOs underwritten by SSB, *instate* is one if the IPO firm is in New York, where the unit in charge of spinning was located, and zero otherwise.

top executive stock option backdating statistics, where firms that have engaged in backdating or have a high probability of backdating are deemed to have low ethics.²⁸ Since these five variables have no obvious theoretical links to underpricing, we use them as identifying variables for spinning.

The identifying variables that are included in the second stage underpricing regression, but not in the spinning regression, are share overhang, the all-star analyst dummy, and the bubble dummy. In Table 6, the first stage estimation results are reported in the first two columns and the second stage results are reported in the next two columns. From the first stage estimation, the test of significance of the five identifying variables for spinning suggests that these variables are significantly related to spinning (p -value=.022), while not related to underpricing (p -value=.387). Conversely, the test of significance of the three identifying variables for underpricing suggests that these variables are significantly related to underpricing (p -value=.0001), while not related to spinning (p -value=.848).

The primary variable of interest is the instrumented spinning variable. In the last column of Table 6, when endogeneity is controlled for, the coefficient on the spinning instrument is 22.69, with a t -statistic of 2.01. Since this coefficient is similar to those reported in Tables 4 and 5, it suggests that the relation between spinning and underpricing is significant even controlling for the possibility of endogeneity. Furthermore, in the third column, the underpricing instrument's coefficient of 0.001 (z =0.22) suggests that underpricing does not cause spinning. These results are consistent with the spinning hypothesis, which posits that executives who receive side payments from underwriters put less emphasis on maximizing the proceeds from their IPO, resulting in greater underpricing.

²⁸ From the Glass-Lewis & Co.'s Yellow Card Trend Alert as of March 2007 and SEC filings, we classify eight of our 196 firms as having backdated options based on evidence that they have either charged or restated previously unrecognized expenses related to misdated stock options. For the other 188 firms, we calculate their probability of backdating based on the number of unique at-the-money option grants and the number of these grants with an exercise price at the lowest price of the month, using data from Thompson Reuter's Insider Filings database before August 29, 2002, when SOX revised the option grant reporting rules. For each firm, the probability of backdating is calculated as the Bayesian probability of backdating conditional on observing a number of option grants at the lowest price of the month out of a total number of option grants for the firm. The probability measure is based on Heron and Lie (2006), Carow, Heron, Lie, and Neal (2009), and Bebhuk, Grinstein, and Peyer (2010). The low ethics dummy equals one (zero otherwise) if the firm is one of the eight firms engaged in option backdating or if the firm is one of the six others that has a probability of backdating that is greater than 95%.

5. The Effect of Spinning on Subsequent Investment Banking Mandates

In this section, we test the hypothesis that spinning affects an issuer's probability of using the same underwriter for its subsequent investment banking business. In Table 7, we present the loyalty statistics for the usage of investment banking service in the post-IPO period for 196 IPOs by DMG, CSFB, or SSB. We limit the post-IPO transactions under examination to those completed before the end of 2001 since it is difficult to assess the effect of spinning in later deals, with our spinning data ending in 2000. In addition, we focus on issuing companies' first post-IPO transactions, since the effect of spinning on decisions is expected to deteriorate over time.

Panel A of Table 7 analyzes the 54 of the 196 IPO firms that conducted their first seasoned equity offering (SEO) by the end of 2001. In Internet Appendix Table IA-2, we list these 54 companies with relevant bookrunner and loyalty information; 18 (33%) of the 54 companies conducting SEOs are involved in spinning. Panel B analyzes 101 of the 196 IPO firms that conducted their first investment banking transaction other than an SEO before the end of 2001. We analyze SEO and non-SEO transactions separately because the effect of spinning may vary for different types of deals. The underwriter's services required for SEOs are similar to those required for IPOs, but may be different from those required for private equity placements, debt offerings (private or public), and merger and acquisition (M&A) deals.

In Panel A of Table 7, for issuers whose executives are not being spun, 11 of the 36 issuers used a different lead underwriter for their SEO, a switch rate of 31%. This switch rate is similar to the 30% that Krigman, Shaw, and Womack (2001) report and the 33.5% that Cliff and Denis (2004) report. For issuers that are subject to spinning, only one out of 18 companies used a different lead underwriter for both their IPO and first SEO, a switch rate of only 6%. The 25% difference in switch rates, assuming independence, is statistically different from zero, with a p -value of .037.

For the first non-SEO transactions in Panel B, 47% of spinners are loyal to their IPO underwriters, which is a larger percentage than the 37% of non-spinners being loyal to their IPO underwriters. This 10% difference in the loyalty rates is smaller than the 25% difference for the first SEOs and is statistically insignificant. We conjecture that the effect of spinning is weaker in this case partly because non-SEO deals tend to use evaluative criteria for choosing investment

bankers that are different from the criteria used for IPOs and SEOs. For instance, companies may prefer an investment banking firm with more M&A experience in their industry.

In unreported results, we have conducted a series of probit regressions to predict loyalty for the first SEO, controlling for up to seven variables that might be related to switching propensities. The effect of spinning on loyalty is economically and statistically significant in all specifications and the increase in the probability of being loyal due to spinning based on predicted values is around 25%, consistent with the univariate results reported in Panel A of Table 7. More precisely, firms that are involved in spinning are more likely to keep the same underwriter than firms that are not, especially for their first SEO transactions. This suggests that the spinning of the executives does affect their behavior.²⁹

6. Estimation of the Costs and Benefits of Spinning

6.1 Costs and benefits for the executives and shareholders

The total amount of money left on the table for the 56 spinning IPOs is \$4.24 billion, an average of \$76 million per firm (unlike the numbers that we report in Table 1, the calculations done in this subsection do not make any inflation adjustments.) We calculate the incremental money left on the table due to spinning as $(OP_{ns} - OP_s) \cdot N_{issued}$, where OP_{ns} is the offer price in the absence of spinning, OP_s is the offer price with spinning, and N_{issued} is the number of shares issued in the IPO. We can estimate the offer price without spinning as $OP_{ns} = P_1 / (P_1 / OP_s - 0.2268)$, where P_1 is the first day closing price, OP_s is the offer price observed, and 0.2268 is the coefficient on spinning from the regression in row 3 of Table 4, expressed as a decimal rather than a percentage. The money left on the table due to spinning is then estimated to be \$952 million in total, an average of \$17 million per spinning firm.

For the 36 of the 56 IPOs whose executives were spun for which we have allocation information, the average per firm spinning profit accruing to the executives reported in Table 3 is approximately \$1.3 million, which is less than 8% of the \$17 million incremental money left on the table due to spinning. Thus, the executives gained \$1.3 million on average at the expense of the shareholders, who lost \$17 million per issue from spinning. These numbers illustrate the

²⁹ Another way in which spinning can have an effect on corporate decisions is through the gross spread paid to the underwriter in their post-IPO public offerings. In unreported results, controlling for issue size and loyalty, we find that there is a statistically insignificant 15 basis point increase in the gross spread paid to underwriters for subsequent SEOs if the issuing firm's executives are being spun.

magnitude of agency problems that can arise from putting the decision rights at a corporation into the hands of a few executives. The underwriters successfully co-opted these people, but gave them only a small slice of the pie. While the benefit that the executives received is non-trivial, the loss to the shareholders is far greater.

Since the executives being spun are usually also shareholders of the company, we collect ownership holding data from the IPO prospectuses for the 146 officers and directors. On average, the executives being spun hold 23% of the total shares in their company before the IPO, which means they have lost \$3.9 million in foregone proceeds due to spinning (23% of the incremental \$17 million left on the table), and gained only \$1.3 million in return. At first glance it appears that the harm executives inflicted on themselves through excessive dilution exceeds their private benefits. Several things, however, need to be kept in mind. First, it is important to note that this cost is an opportunity cost, not an out-of-pocket direct cost, and people generally do not view opportunity costs the same as direct costs. Second, the executives may not know beforehand or even afterward how much opportunity cost is involved in spinning, which results in a possible underestimation of the cost *ex ante*. Third, it should be noted that most of these executives had very undiversified and illiquid portfolios consisting primarily of company stock and options, with much of the stock subject to lockup provisions and stock options subject to vesting restrictions. Many of them had significant paper wealth, but cash income that was imperfectly correlated with their company's stock price apparently had considerable appeal.

6.2 Costs and benefits for the underwriters

We calculate the profit from spinning for the three underwriters, DMG, CSFB, and SSB, as $\gamma(OP_{ns} - OP_s) \cdot N_{issued} + g \cdot (OP_s - OP_{ns}) \cdot N_{issued} + \sum_{n=1}^N \pi_n(\bar{S}) \cdot PM_n \cdot g_n \cdot Proceed_n - \gamma\bar{S}$ from each IPO issuer engaged in spinning. The first term of the profit function, $\gamma(OP_{ns} - OP_s) \cdot N_{issued}$, is the underwriter's fractional share of money left on the table that flows to the underwriter through soft dollar payments, γ , times the incremental money left on the table due to spinning. The second term, $g \cdot (OP_s - OP_{ns}) \cdot N_{issued}$, is the loss of gross spread revenue from a lower offer price when spinning is offered, where g is the fractional gross spread on the IPO. The third term, $\sum_{n=1}^N \pi_n(\bar{S}) \cdot PM_n \cdot g_n \cdot Proceed_n$, measures the incremental profit gained from future deals due to spinning, where $\pi_n(\bar{S})$ is the change in the probability of choosing the same underwriter due to spinning, $g_n \cdot Proceed_n$ is the gross spread revenue, and PM_n is the fraction of the n th deal's revenue that is profit. The last term, $\gamma\bar{S}$, is the opportunity cost of spinning,

measured as the underwriter's fractional share of the money left on the table, γ , times the aggregate first-day profit for all the executives being spun, \bar{S} . This last term represents the soft dollar revenue that would have been earned if these shares had been allocated to rent-seeking institutional investors rather than the executives.

Most of the variables can be estimated from the empirical analysis, with the exception of the fraction of the underwriter's share of the money left on the table, γ , and the average profit margin for the first SEOs, PM_n . To illustrate how costs and benefits of spinning are calculated, we first consider the scenario when $\gamma = 35\%$ and the profit margin, $PM_n = 30\%$.³⁰

In this case, the profit from soft dollar commissions, $\gamma(OP_{ns} - OP_s) \cdot N_{issued}$, is estimated as 35% of the \$952 million of incremental money left on the table, or \$333 million. The loss from a lower gross spread, $g \cdot (OP_s - OP_{ns}) \cdot N_{issued}$, is \$62 million using a proceeds-weighted average fractional gross spread of 0.065. Using only the first post-IPO public equity offerings, of the 56 firms whose executives have been spun, there are 18 SEOs of which 17 issuers have chosen their IPO underwriter, with total fees to the three underwriters of \$207 million. The typical loyalty rate is estimated to be 69% and, due to spinning, the loyalty rate increases to 94% based on Table 7. We estimate the underwriters' aggregate profit from spinning to be \$16.5 million ($0.30 \times \$207\text{m}/0.94 \times 0.25 = \16.5m), which equals the assumed profit margin of 30% times the fees gained by these underwriters due to spinning ($\$207\text{ million}/0.94 = \220 million in SEO fees accruing to all underwriters, times the 25% higher market share due to the spinning-induced loyalty). For the post-IPO investment banking deals, our estimates of the underwriters' spinning profits are a lower bound because we only count the first SEOs.

The opportunity cost of spinning, $\gamma\bar{S}$, is estimated to be \$25.5 million, calculated as the underwriter's 35% fractional share of the money left on the table received from soft dollars times the aggregate first day profit for all the executives being spun of \$72.8 million for 56 firms, using \$1.3 million as the firm level first-day profit average. Thus, the total pre-tax profit from spinning for the three underwriters in this case is \$262 million, which is $\$333\text{m} - \$62\text{m} + \$16.5\text{m}$ -

³⁰ Our base case assumption that 35% of the money left on the table flows back to the underwriters is based upon conversations with senior investment banking executives. Corroborating evidence can be found from unreported regression analysis using quarterly commission revenue and money left on the table figures for IPOs underwritten by Robertson Stephens.

\$25.5m=\$262 million. This aggregate amount averages \$4.7 million per IPO. It should be noted, however, that these numbers do not include the cost of subsequent regulatory settlements.

In unreported sensitivity analysis, we investigate how underwriters' total profit from spinning changes by varying the soft dollar commission ratio, γ , and the SEO profit margin. We find that except for very low values of γ , where the cost of spinning outweighs the benefits of spinning, the underwriter's profits from spinning are positive and substantial. Given the conservative nature of our assumptions, these calculations suggest that spinning can indeed be profitable for underwriters in the absence of significant regulatory penalties.

7. Conclusion

Spinning, the practice of allocating hot IPOs to corporate executives with the purpose of affecting corporate investment banking decisions, previously has not been empirically studied in the finance literature. In this paper, we use a unique dataset to examine the economic consequences of IPO spinning by measuring the effect of IPO spinning on the underpricing of IPOs and the choice of underwriter for subsequent public offerings.

The spinning hypothesis states that executives are less likely to seek the highest offer price if they receive side payments from underwriters. We find that holding everything else constant, IPOs in which the executives are being spun are underpriced about 23% more than other IPOs. This result is consistent with the spinning hypothesis in Loughran and Ritter (2004). We estimate that the combined effects of issuers seeking all-star analyst coverage and spinning, rather than exclusively seeking IPO proceeds maximization, can account for approximately 12% of the 65% average underpricing during the 1999-2000 bubble period.

In addition, we find that spinning is negatively related to the probability of switching underwriters between the IPO and the first SEO. Our analysis suggests that firms that are involved in spinning are dramatically less likely to switch underwriters for their next public equity offering: 31% of issuers whose executives were not spun switched underwriters, whereas only 6% of issuers whose executives were spun switched underwriters.

In summary, we find that spinning affected not only IPO underpricing, but also the awarding of mandates on subsequent investment banking deals. This suggests that the spinning of corporate executives by investment bankers accomplished its purpose: it affected the corporate decisions of executives who received hot IPO allocations.

It is worth noting that the spinning of corporate executives has largely ceased since 2000 in the U.S. This cessation is due to both a regulatory crackdown and a dearth of hot IPOs to allocate. Although spinning has largely disappeared in the U.S., other countries have not prohibited it. As long as rents are present in the form of hot IPOs, rent-seeking behavior will arise. Consequently, we predict that there will be future scandals associated with IPOs as long as there is discretion in the allocation of underpriced shares.

Spinning is not the only manifestation of agency problems in financial markets. Many commentators have blamed a culture of compensation involving large bonuses without clawback provisions as a contributor to the proliferation of mortgage-backed securities, some of which collapsed in value when housing prices fell in 2007-2009 in the U.S. Another example of the co-opting of decision makers in financial markets is junkets for mutual fund traders paid for by brokerage firms.³¹ Both the side payments to the traders working at mutual funds and the spinning of corporate executives are examples of actions that arise when principals delegate decision-making to agents. The costs imposed on shareholders and the benefits accruing to managers can rarely be quantified. In the case of spinning, we are able to estimate these costs and benefits.

³¹ According to U.S. SEC press release 2008-32 on March 5, 2008, mutual fund organization Fidelity agreed to pay an \$8 million fine as a result of failing to seek best execution due to “13 current or former employees including high-ranking executives accepting more than \$1.6 million in travel, entertainment, and other gifts paid for by outside brokers courting the massive trading business Fidelity generates on behalf of the mutual funds that it manages.”

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Table 1

Mean and median of descriptive variables categorized by spinning

The sample consists of 196 operating company IPOs underwritten by Deutsche Morgan Grenfell (DMG) from July 1, 1996 to June 30, 1998; Credit Suisse First Boston (CSFB) from July 1, 1998 to December 31, 2000 for which the company's industry is technology or Internet-related; or Salomon Brothers from January 1, 1996 to November 1997, Smith Barney from July 1, 1997 to November 1997, and Salomon Smith Barney from November 1997 to December 31, 2000 (collectively, SSB). Data are from Thomson Financial's new issues database and Dealogic, with corrections. Four of these 196 IPOs had both CSFB and SSB as joint bookrunners. The 56 spinning IPOs are the IPOs in which one or more top executives received allocations of hot IPOs from the bookrunner. In 1996-1998, there are 15 spinning firms and 53 non-spinning firms. In 1999-2000, there are 41 spinning firms and 87 non-spinning firms. *First-day return* is defined as the percentage change from the offer price to the first-day closing price, winsorized at the 1%ile and 99%ile. *Proceeds* are computed by multiplying the offer price with the global number of shares offered, expressed in millions of dollars. *Assets* are the firm's pre-issue book value of assets, expressed in millions of dollars. *Age* is computed as the IPO year minus the founding year. *Share overhang* is the ratio of retained shares to the public float. *Money left on the table* is defined as the first-day price change (offer price to close) times the number of shares issued (global offering amount, excluding overallotment options), expressed in millions of dollars. *Price revision* is defined as the percentage change from the middle of the original file price range to the offer price. *Tech* is the percentage of IPOs that are classified as technology (including telecom) or Internet-related. All dollar values are in dollars of 2003 purchasing power using the Consumer Price Index. Means of spinners and non-spinners are tested for equality using the unpaired two sample *t* test assuming independence and normality. Medians of spinners and non-spinners are tested for equality using a nonparametric two-sample test that tests the null hypothesis that the medians of the population from which two samples are drawn are identical. The significance of the mean test's *t*-statistics and the median test's *chi*-squared statistics at 1%, 5%, and 10% levels are denoted by ***, **, *, respectively. That is, asterisks by the spinner mean or median indicate that the spinner and non-spinner numbers are significantly different from each other.

Segmented by	1996-1998		1999-2000		All (1996-2000)	
	Mean	Median	Mean	Median	Mean	Median
First-day return						
Spinner	31.8%***	33.6%**	106.8%***	107.1%***	86.7%***	59.4%***
Non-Spinner	12.1%	9.7%	60.5%	27.4%	42.2%	15.3%
Proceeds (millions)						
Spinner	\$99.1	\$50.8	\$117.5	\$70.7	\$112.6	\$68.4
Non-Spinner	\$103.0	\$60.9	\$327.1	\$91.1	\$242.3	\$79.7
Assets (millions)						
Spinner	\$99.6	\$19.1***	\$176.9	\$32.1	\$155.5	\$29.0***
Non-Spinner	\$242.2	\$85.5	\$752.5	\$66.3	\$559.3	\$72.0
Age						
Spinner	7 years*	5 years	5 years**	4 years	5 years***	4 years**
Non-Spinner	15 years	8 years	11 years	4 years	12 years	6 years
Share overhang						
Spinner	3.2	2.3	5.9*	5.4**	5.1**	5.1***
Non-Spinner	3.3	2.8	5.1	4.7	4.4	4.1
Money left on the table (millions)						
Spinner	\$30.4*	\$24.0	\$101.8	\$83.5**	\$82.7	\$50.9***
Non-Spinner	\$14.7	\$5.7	\$115.4	\$27.9	\$77.3	\$13.4
Price revision						
Spinner	9.9%*	12.5%**	30.5%**	23.1%*	25.0%***	16.0%***
Non-Spinner	0.7%	0%	15.1%	9.1%	9.6%	6.9%
Percentage with an offer price above the maximum of the file price range						
Spinner	46.7%**		63.4%**		58.9%***	
Non-Spinner	20.7%		42.5%		34.3%	
Percentage of tech firms						
Spinner	93.3%***		95.1%**		94.6%***	
Non-Spinner	43.4%		79.3%		65.7%	
Percentage of Venture Capital-backed firms						
Spinner	46.7%		85.4%***		75.0%***	
Non-Spinner	28.3%		60.9%		48.6%	

Table 2**IPO allocation statistics for 36 companies with executives spun by SSB or CSFB**

The sample includes 20 companies conducting IPOs underwritten by CSFB and 16 companies conducting IPOs underwritten by SSB for which IPO allocation data for the executives being spun are available. The IPO allocation data for the 20 CSFB IPOs are from the March 7, 2003 *San-Jose Mercury News*. For the 16 SSB IPOs, the IPO allocation data are from the allocation lists for 48 SSB IPOs, as calculated by the authors. All measures are calculated based on each spinning firm. Shares of the executive's own firm that are allocated to the executive or his/her family members are excluded in the calculations. *Money left on the table* is defined as the first-day price change (offer price to close) times the number of shares issued, expressed in millions of dollars. *First-day profit* is the profit a firm's executives would have received if their allocated shares were sold at the first-day closing price. (This is the sum of these first-day profits over all of the IPOs received by all of the executives at the company.) The *number of IPO allocations* is the number of IPOs each spinning firm's executives that are involved in spinning received in the aggregate. For example, if three executives each received an allocation of each of five separate IPOs, we would count this as 15 allocations. The *average spinning period* in years is computed by averaging the number of years during which each executive received IPO allocations within each spinning firm. For this last variable, we only have data for SSB IPOs.

Panel A: 20 CSFB IPOs from 1998 to 2000

	Mean	Median	Std Dev	Minimum	Maximum
Money Left on the Table (millions \$)	101.7	77.2	114.9	-16.1	476.1
First-day Profit/Money Left on Table	0.336	0.018	1.337	-0.036	6.007
Number of Executives Being Spun	2.70	2	2.39	1	12
Number of IPO Allocations	107.3	75.5	135.9	22	651
First-day Profit Aggregated Over All Executives (\$)	1,691,210	1,026,816	2,017,477	285,320	9,301,421

Panel B: 16 SSB IPOs from 1996 to 2000

	Mean	Median	Std Dev	Minimum	Maximum
Money Left on the Table (millions \$)	54.2	40.4	61.0	0	188.3
First-day Profit/Money Left on Table	0.040	0.005	0.081	0	0.323
Number of Executives Being Spun	3.63	3	3.46	1	16
Number of IPO Allocations	28.9	10	40.1	3	164
First-day Profit Aggregated Over All Executives (\$)	705,215	137,772	1,966,967	49,495	8,031,831
Average Spinning Period (Years)	2.19	2	1.05	1	4

Table 3**IPO allocation statistics by executive position for 36 CSFB and SSB spinning companies**

The sample includes 20 IPOs underwritten by CSFB and 16 IPOs underwritten by SSB for which subsequent IPO allocation data are available for 112 different executives who were spun. Executives holding multiple titles (e.g., CFO and VP-finance) are categorized based on their highest position, with the highest position assigned in this order: CEO, Chairman, President, CFO, Other Executive, Director. The names of the CSFB executives being spun, along with their number of allocations and first-day profits, are from the March 7, 2003 *San Jose Mercury-News*. The names of the SSB executives being spun are identified by matching information in the prospectuses with the names of accounts receiving allocations from the two SSB brokers who implemented spinning for the 48 IPOs for which we have allocation information. In this table, we do not make any inflation adjustments. The data that are summarized in this table are tabulated in Internet Appendix Table IA-1. n.a. is not available.

Panel A: 20 CSFB IPOs from 1999 to 2000

	Number of Executives	Number of Allocations		First-day Spinning Profits, \$	
		Mean	Median	Mean	Median
CEO	16	37.7	29	748,943	511,370
Chairman	1	56.0	56	538,243	538,243
President	0	n.a.	n.a.	n.a.	n.a.
CFO	14	34.6	35	612,688	522,948
Other Executives	23	44.0	36	553,271	483,504
Director	0	n.a.	n.a.	n.a.	n.a.
Total	54	40.2	36	626,374	522,745

Panel B: 16 SSB IPOs from 1996 to 2000

CEO	14	10.1	7	257,489	57,523
Chairman	3	5.7	4	85,265	90,000
President	3	10.0	14	203,935	79,535
CFO	7	9.6	5	223,496	29,555
Other Executives	26	6.1	4.5	176,343	36,554
Director	5	9.4	10	132,455	104,042
Total	58	8.0	5	194,554	51,855

Panel C: 36 CSFB and SSB IPOs from 1996 to 2000

CEO	30	24.8	24.5	519,598	312,960
All Others	82	22.7	18	360,005	215,737
Total	112	23.3	21	402,753	262,309

Table 4

First-day return OLS regression for 196 IPOs with DMG, CSFB, or SSB as a bookrunner, 1996-2000

The sample in rows 1, 2, and 3 includes 196 firms taken public by 1) Deutsche Morgan Grenfell (DMG) from July 1, 1996 to June 30, 1998 for which the company's industry is technology or Internet-related; 2) Credit Suisse First Boston (CSFB) from July 1, 1998 to December 31, 2000 for which the company's industry is technology or Internet-related; or 3) Salomon Brothers from January 1, 1996 to November 1997, Smith Barney from July 1, 1997 to November 1997, and Salomon Smith Barney from November 1997 to December 31, 2000 (collectively, SSB). The 1996-1998 and 1999-2000 subperiods have average winsorized first-day returns of 16.5% and 75.3%, respectively. The dependent variable in all regressions is the percentage *first-day return* from the offer price to the first-day closing price, winsorized at the 1st and 99th percentiles (using the entire 1996-2000 population of 2,285 IPOs for the cutoffs). $\ln(\text{assets})$ is the natural logarithm of the pre-issue book value of assets, expressed in millions of dollars of 2003 purchasing power using the CPI. $\ln(1+\text{age})$ is the natural logarithm of one plus the IPO year minus the founding year. The *tech* dummy takes a value of one (zero otherwise) if the firm is in the technology business, and the *Internet* dummy is similarly defined. *Share overhang* is the ratio of retained shares to the public float (the number of shares issued). The *VC* dummy takes a value of one (zero otherwise) if the IPO was backed by venture capital. The *All-star* analyst dummy takes a value of one if one or more of the bookrunners had an *Institutional Investor* all-star analyst (top 3) cover the stock within 12 months of the IPO. The *spin* dummy takes a value of one (zero otherwise) if the IPO is one of the 56 IPOs during 1996-2000 for which the executives of the IPO firm received IPO allocations from DMG, CSFB, or SSB, and one or more of these three underwriters was a bookrunner on their IPO, as identified in Internet Appendix Table IA-1. The *bubble* dummy takes on a value of one (zero otherwise) if the IPO occurred during 1999-2000. Heteroskedasticity-consistent *t*-statistics are in parentheses.

$$\text{First-Day Return}_i = a_0 + a_1 \ln(\text{Assets})_i + a_2 \ln(1+\text{Age})_i + a_3 \text{Tech Dummy}_i + a_4 \text{Internet Dummy}_i + a_5 \text{Share Overhang}_i + a_6 \text{VC Dummy}_i + a_7 \text{All-star Dummy}_i + a_8 \text{Spin Dummy}_i + a_9 \text{Bubble Dummy}_i + e_i$$

Period	Intercept	ln(Assets)	ln(1+Age)	Tech Dummy	Internet Dummy	Share Overhang	VC Dummy	All-star Dummy	Spin Dummy	Bubble Dummy	Number of Obs	R^2_{adj}
(1) 1996-2000	-4.23 (-0.24)	-8.21 (-3.34)	6.78 (1.50)	20.66 (2.69)	12.89 (0.99)	7.14 (2.79)	14.53 (1.44)	--	--	29.60 (4.00)	196	26.9%
(2) 1996-2000	-6.47 (-0.36)	-8.63 (-3.45)	7.46 (1.64)	21.35 (2.76)	14.27 (1.10)	6.92 (2.68)	13.80 (1.36)	9.50 (0.97)	--	29.22 (3.91)	196	26.9%
(3) 1996-2000	-12.86 (-0.69)	-7.60 (-2.93)	8.00 (1.77)	16.14 (1.92)	13.81 (1.07)	6.67 (2.53)	12.17 (1.19)	9.89 (1.03)	22.68 (1.96)	29.93 (4.21)	196	28.3%
(4) 1996-1998	-3.85 (-0.34)	1.73 (1.25)	-0.07 (-0.02)	5.71 (1.12)	-10.52 (-1.49)	1.78 (1.55)	10.39 (1.53)	-5.22 (-1.33)	17.42 (2.76)	--	68	20.9%
(5) 1999-2000	12.16 (0.39)	-12.00 (-3.04)	8.74 (1.22)	32.96 (2.35)	9.83 (0.60)	8.12 (2.28)	10.45 (0.64)	16.10 (1.14)	26.36 (1.71)	--	128	18.9%

Table 5

First-day return OLS regression for 2,285 IPOs, 1996-2000

The sample in rows 1, 2, and 3 includes 2,285 operating firm IPOs from 1996 to 2000 for which the offer price is at least \$5.00 and complete data on all of the variables are available. Unit offers, ADRs, banks and S&Ls, and partnership offers are excluded. The subperiods have 1,426 and 859 observations with winsorized average first-day returns of 16.8% and 61.8%, respectively, with an average over the entire sample of 33.7%. The dependent variable in all regressions is the percentage first-day return from the offer price to the first-day closing price, winsorized at the 1st and 99th percentiles. The *top-tier* underwriter dummy takes a value of one if the lead underwriter has an updated Carter and Manaster (1990) rank of 8 or more, and zero otherwise. The unknown spin dummy is one for firms whose spinning status is unknown (all but the 196 IPOs used in Table 4) and zero otherwise. The other variables are defined in Table 4 and in Appendix Table A1. Heteroskedasticity-consistent *t*-statistics are in parentheses.

$$\text{First-Day Return}_i = a_0 + a_1 \text{Top-Tier Underwriter Dummy}_i + a_2 \ln(\text{Assets})_i + a_3 \ln(1+\text{Age})_i + a_4 \text{Tech Dummy}_i + a_5 \text{Internet Dummy}_i + a_6 \text{Share Overhang}_i + a_7 \text{VC Dummy}_i + a_8 \text{All-star Dummy}_i + a_9 \text{Spin Dummy}_i + a_{10} \text{Unknown Spin Dummy}_i + a_{11} \text{Bubble Dummy}_i + e_i$$

Period	Intercept	Top-Tier Dummy	ln(Assets)	ln(1+Age)	Tech Dummy	Internet Dummy	Share Overhang	VC Dummy	All-star Dummy	Spin Dummy	Unknown Spin Dummy	Bubble Dummy	R^2_{adj}
(1) 1996-2000	2.02 (0.76)	7.63 (3.46)	-2.69 (-4.73)	-0.62 (-0.76)	3.72 (2.03)	28.42 (6.27)	5.73 (8.97)	6.62 (2.85)	--	--	--	19.21 (7.65)	28.6%
(2) 1996-2000	4.35 (1.62)	5.49 (2.51)	-3.32 (-5.60)	-0.63 (-0.77)	3.99 (2.17)	27.85 (6.21)	5.38 (8.61)	6.64 (2.87)	15.15 (4.47)	--	--	18.49 (7.42)	29.5%
(3) 1996-2000	-1.94 (-0.34)	5.40 (2.44)	-3.26 (-5.54)	-0.56 (-0.68)	3.66 (2.00)	27.54 (6.15)	5.34 (8.52)	6.33 (2.74)	15.20 (4.48)	27.81 (2.64)	6.34 (1.25)	18.50 (7.46)	29.9%
(4) 1996-1998	4.27 (1.21)	3.37 (2.49)	-2.08 (-5.23)	-0.35 (-0.66)	2.04 (1.54)	30.43 (3.88)	2.57 (5.79)	-2.11 (-1.29)	8.18 (3.27)	16.07 (2.39)	8.93 (2.84)	--	15.5%
(5) 1999-2000	-11.95 (-1.00)	16.62 (2.61)	-4.78 (-3.32)	-0.05 (-0.02)	17.69 (3.42)	15.86 (2.59)	7.50 (6.78)	18.22 (3.52)	18.45 (2.92)	27.52 (1.91)	8.16 (1.02)	--	22.1%

Table 6

Two-stage regression results

The sample consists of 196 operating company IPOs underwritten by DMG, CSFB, and SSB from 1996 to 2000. See Tables 4 and Appendix Table A1 for common variable definitions. For IPOs underwritten by DMG or CSFB, *instate* is one if the IPO firm is located in California and for IPOs underwritten by SSB, *instate* is one if the IPO firm is in New York, and zero otherwise. The *low ethics* dummy equals one (zero otherwise) if the firm engaged in option backdating or if the firm has a probability of backdating greater than 95%. *Pre-IPO insider holdings*, expressed as a decimal, is pre-issue shareholdings of “all executive officers and directors as a group” relative to all pre-issue shares outstanding reported in the prospectus. *Capex/Assets* is the ratio of the capital expenditure to total assets from the most recent fiscal year before the IPO. *Sales growth* is measured as the change in sales over the two most recent fiscal years before the IPO as a fraction of the year t-2 sales. The *underpricing instrument* is the fitted value from the first-stage underpricing OLS regression. The *spinning instrument* is the fitted value from the first-stage spinning probit regression. The test of identifying variables is either a Wald *chi*-squared test or an *F*-test of the null hypothesis that the coefficients of the identifying variables are all zero. The *t*-statistics for the OLS regression and the *z*-statistics for the probit regression reported in parentheses in the second stage are corrected for estimation error in the first stage based on Maddala (1983).

Variable	First Stage		Second Stage	
	Spin Probit	Underpricing OLS	Spin Probit	Underpricing OLS
Constant	-1.73 (-2.25)	-28.41 (-1.02)	-1.68 (-2.19)	10.13 (0.39)
ln(Assets)	-0.10 (-1.22)	-6.65 (-2.02)	-0.09 (-1.18)	-4.55 (-1.16)
ln(1+Age)	-0.13 (-0.73)	8.01 (1.27)	-0.14 (-0.82)	11.54 (1.67)
Tech Dummy	1.04 (2.91)	19.83 (1.65)	1.04 (2.74)	-3.90 (-0.22)
Internet Dummy	0.11 (0.42)	17.18 (1.52)	0.05 (0.18)	14.88 (1.29)
VC Dummy	0.10 (0.33)	9.89 (0.82)	0.05 (0.17)	8.49 (0.69)
Share Overhang	0.03 (0.67)	6.65 (3.03)		5.88 (2.54)
All-Star Dummy	0.05 (0.21)	11.91 (1.22)		10.90 (1.08)
Bubble Dummy	-0.19 (-0.67)	26.41 (2.34)		30.88 (2.60)
Instate Dummy	0.47 (1.97)	10.44 (1.01)	0.45 (1.88)	
Low Ethics Dummy	1.06 (2.53)	23.38 (1.35)	1.02 (2.34)	
Pre-IPO Insider Holdings	0.71 (1.65)	20.86 (1.33)	0.68 (1.56)	
Capex/Assets	1.27 (1.35)	5.87 (0.15)	1.25 (1.34)	
Sales Growth	-0.001 (-0.42)	-0.03 (-0.60)	-0.001 (-0.34)	
Underpricing Instrument			0.001 (0.22)	
Spinning Instrument				22.69 (2.01)
Test of Underpricing Identifying Variables	$\chi^2=0.81$ $p\text{-value}=.848$	$F=7.51$ $p\text{-value}=.0001$		
Test of Spinning Identifying Variables	$\chi^2=13.17$ $p\text{-value}=.022$	$F=1.05$ $p\text{-value}=.387$		
Number of Obs	196	196	196	196
Pseudo or Adjusted R^2	21.0%	27.0%	20.7%	28.4%

Table 7**First SEO and non-SEO bookrunner choice comparison**

This table compares the loyalty status of the 196 sample IPOs underwritten by DMG, CSFB, and SSB that have conducted post-IPO investment banking transactions. Panel A includes 54 of the 196 IPO firms that have conducted a public seasoned equity offering (SEO) by the end of 2001, categorized by the 18 companies that were spun and 36 that weren't among the 54 SEO issuers. Internet Appendix Table IA-2 lists the 54 companies and their spinning status. Panel B includes 101 of the 196 IPO firms that have conducted at least one non-SEO transactions, either a public/private debt offering, a private equity offering, or an M&A deal, by the end of 2001. Of the 101 first non-SEO transactions, 85 are M&A deals (IPO firm as acquirer or target), 8 are public debt offerings, 5 are private debt offerings, and 3 are private equity offerings. If the firm used the same bookrunner for their IPO and their first SEO (Panel A) or first non-SEO (Panel B) transaction, they belong to the group of *Used the same lead underwriter*. If they used a different underwriter or the IPO underwriter is involved in the deal but not as the bookrunner, they belong to the category of *Fired or demoted lead underwriter* (the IPO lead underwriter is a member of the SEO underwriting syndicate, but not a bookrunner). All post-IPO transaction data come from the Thomson Financial SDC database. The two sample *t*-statistics test the hypothesis that the probability of using the same lead underwriter for the first SEO or first non-SEO transaction is the same for both spinning companies and nonspinning companies assuming equal variances.

Panel A: First SEO transaction

	Comparison of loyalty between spinner and non-spinner			
	Companies that were spun		Companies that were not spun	
	Number	Percentage	Number	Percentage
Fired or demoted lead underwriter	1	5.6%	11	30.6%
Used the same lead underwriter	17	94.4%	25	69.4%
Two sample <i>t</i> -statistics (<i>p</i> -value)			2.14 (.037)	

Panel B: First non-SEO transaction

	Comparison of loyalty between spinner and non-spinner			
	Companies that were spun		Companies that were not spun	
	Number	Percentage	Number	Percentage
Fired or demoted lead underwriter	16	53.3%	45	63.4%
Used the same lead underwriter	14	46.7%	26	36.6%
Two sample <i>t</i> -statistics (<i>p</i> -value)			0.94 (.351)	

Appendix Table A1: Variable definitions

There are two sets of data. The first set consists of 2,285 U.S. operating firm IPOs from 1996 to 2000 for which the offer price is at least \$5.00 and complete data on all of the variables is available. Unit offers, ADRs, banks and S&Ls, and partnerships offers have been excluded. The second set consists of 196 IPOs (a subset of the 2,285 IPOs) that are underwritten by Deutsche Morgan Grenfell (DMG) from July 1, 1996 to June 30, 1998; the technology group of Credit Suisse First Boston (CSFB) from July 1, 1998 to December 31, 2000; or Salomon Brothers from January 1, 1996 to November 1997, Smith Barney from July 1, 1997 to November 1997, and Salomon Smith Barney from November 1997 to December 31, 2000 (collectively, SSB). All dollar values are expressed in terms of 2003 purchasing power using the Consumer Price Index.

Variable	Definition	Source	Means	
			2,285 IPOs	196 IPOs
First-day return	Percentage change from the offer price to the first day closing price, winsorized at the 1% (a value of -18%) and 99% (a value of 293%) percentiles.	Thomson Financial's SDC, with corrections by the authors.	33.7%	54.9%
Proceeds	The offer price times the number of global shares offered, excluding overallocation options, expressed in terms of 2003 purchasing power.	Thomson Financial's SDC, with corrections.	\$115.8m	\$205.2m
Price revision	Percentage change from the middle of the original file price range to the offer price.	Thomson Financial's SDC, with corrections.	5.0%	14.0%
Top-tier dummy	Equals one (zero otherwise) if the lead underwriter has an updated Carter and Manaster (1990) rank of 8 or more.	Jay Ritter's web-site.	69.6%	100%
Assets	Firm's pre-issue book value of assets, expressed in millions of dollars of 2003 purchasing power.	Thomson Financial's SDC, with corrections by the authors.	\$694.5m	\$444.1m
Tech dummy	Equals one (zero otherwise) if the firm is in the technology business [Defined in Appendix D of Loughran and Ritter (2004)], not including biotech.	Thomson Financial's SDC, with corrections by the authors.	51.2%	74.0%
Internet dummy	Equals one (zero otherwise) if the firm is in the Internet business [Defined in Appendix D of Loughran and Ritter (2004)].	Jay Ritter's web-site.	20.4%	37.2%
Age	Calendar year of offering minus the calendar year of founding [Defined in Field and Karpoff (2002) and Appendix A of Loughran and Ritter (2004)], winsorized at 80 years.	Jay Ritter's web-site.	7 years (median)	5 years (median)
Share overhang	Ratio of retained shares to the public float (shares issued, exclusive of overallocation option shares).	Thomson Financial's SDC, with corrections by the authors.	3.46	4.59
VC dummy	Equals one (zero otherwise) if the IPO was backed by venture capital.	Thomson Financial's SDC, with corrections from Paul Gompers, Josh Lerner, and Jerry Cao, and the authors.	42.1%	56.1%
Bubble dummy	Equals one (zero otherwise) if the IPO occurred during 1999-2000.		37.6%	65.3%

All-star dummy	Equals one (zero otherwise) if the IPO is covered by an <i>Institutional Investor</i> all-star analyst (top 3) from a lead underwriter within one year of the IPO. IPOs in year t are deemed to be covered by an all-star from October of year t-1 if this analyst initiates coverage within 12 months of the IPO.	I/B/E/S, Investext, and other sources; Dan Bradley and Jonathan Clarke and others; <i>Institutional Investor</i> 's annual October issue for 1995-1999.	19.1%	34.7%
Spin dummy	Equals one (zero otherwise) if the IPO is one of the 56 IPOs during 1996-2000 for which one or more executives of the IPO firm received IPO allocations from one of the three underwriters (SSB, CSFB, and DMG). For SSB, the allocations must have started within 12 months of the IPO. The 56 firms are listed in Internet Appendix Table IA-1.	CSFB: Tech_allocation.xls, <i>San Jose Mercury News</i> "63 Silicon Valley 'Friends of Frank'" on March 7, 2003 DMG: Tech_allocation.xls SSB: Internal SSB documents, obtained through a Freedom of Info Act request made to the NY State Office of the Attorney General. Compustat for location information.	2.45%	28.6%
Instate dummy	For IPOs underwritten by DMG or CSFB, instate is one if the IPO firm is located in California and for IPOs underwritten by SSB, instate is one if the IPO firm is in New York and zero otherwise.		-	36.2%
Low ethics dummy	Low ethics dummy equals one (zero otherwise) if there is evidence that the firm engaged in option backdating or if the firm has a probability of backdating greater than 95%. The probability of backdating is calculated based on the number of unique at the money option grants and the number of these grants with an exercise price at the lowest price of the month using data from Insider Filings database before August 29, 2002. For each firm, the probability of backdating is calculated as the Bayesian probability of backdating conditional on observing a number of option grants at the lowest price of the month out of the total number of option grants for the firm.	Glass-Lewis & Co.'s Yellow Card Trend Alert as of March 2007; Edgar SEC filings; Option grant data from Thomson Reuters' Insider Filings database.	-	7.1%
Pre-IPO insider holdings	The pre-IPO holdings of "all executive officers and directors as a group" relative to all pre-issue shares outstanding reported in the prospectus, expressed as a decimal.	Hand collected from prospectus.	-	53.7%
Capex/Assets	Ratio of the capital expenditure to total assets from the most recent fiscal year before the IPO.	Compustat, hand-collected from prospectus.	-	0.10
Sales growth	Change in sales over the two most recent fiscal years before the IPO, expressed as a fraction of year t-2 sales, missing data is set to the median of sales growth.	Compustat, hand-collected from prospectus.	-	0.869 (median)
SEO dummy	Equals one (zero otherwise) if the firm had a Seasoned Equity Offering from the time of their IPO to the end of 2001. The 54 of the 196 IPOs with a value equal to one are identified in Internet Appendix Table IA-2.	Thomson Financial's SDC database.	-	27.6%
Loyalty dummy	Equals one (zero otherwise) if the firm used the same lead underwriter for their IPO and SEO.	Thomson Financial's SDC database.	-	77.8%