

Do co-managing all-star analysts influence IPO pricing?

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Abstract

During 1993 to 2000, all-star analyst coverage from an IPO co-manager is prevalent and strongly related to initial returns. A co-manager possessing a star analyst represents a considerable cost to the lead underwriter. Our results are consistent with the view that the lead recoups these costs by transferring them to the issuing firm in the form of higher underpricing. Investment banks with star analysts participate at the IPO stage if the *ex ante* probability of a follow-on offering is high, consistent with the notion that they are more inclined to commit their star analyst to curry favor with management when future business seems likely. While star status per se is not related to underwriter switching propensities between the IPO and SEO, firms are only willing to “step down” to a less prestigious underwriter if they were a co-manager possessing a star analyst.

—“The reputation of the analyst is so important that it can determine which underwriter a company selects to lead its offering,” (Whiddon 1999, *The IPO Reporter*).

Do co-managing all-star analysts influence IPO pricing?

It is generally accepted in both the practitioner and academic worlds that research coverage is an essential service IPO firms seek from their underwriters. As the quote above illustrates, mandates are often won or lost based on the quality of bank’s analyst that will implicitly cover the firm. Issuing firms desire analysts at quality investment banks, but even more specifically, those that are defined as “all-star” analysts.¹ Each October, *Institutional Investor (II)* ranks the top sell-side analysts in each industry by surveying major buy-side institutional investors. The top analysts get named to the all-star list. Sell-side analysts aspire to make the all-star rankings not only because of the prestige associated with this position, but compensation is heavily tied to it because these all-stars are instrumental in landing investment-banking deals.²

Several recent academic papers also stress the importance of research coverage to issuing firms. Loughran and Ritter’s (2004) “analyst lust” hypothesis suggests that issuers have become more complacent and willing to leave money on the table in return for analyst coverage, especially all-star coverage. They argue that this desire for analyst coverage can partially explain the unprecedented initial returns during the dot-com mania. Cliff and Denis (2004) find direct evidence that underpricing is positively related to firms that possess a lead bank with an all-star analyst. Consistent with the views expressed in Loughran and Ritter (2004), they argue that underpricing is used as a form of currency to pay for research services. Krigman, Shaw, and Womack (2001) find that an important reason firms switch underwriters from their IPO to SEO is to garnish more prestigious research coverage from that underwriter. Dunbar (2000) shows that investment banking market share is related to the number of all-star analysts the bank possesses.

¹ For example, a Business Week article describing the 1999 IPO for E-Loan illustrates this point. “But E-Loan needs the help, especially coverage by the investment bank’s analysts to spur investor interest. That’s what tips the scales. IPO powerhouse Morgan Stanley Dean Witter loses, largely because it can’t promise coverage by its star Net analyst, Mary Meeker.”

² The July 2002 “Global Research Settlement” prohibits analyst compensation tied to banking business. See <http://www.sec.gov/news/press/2002-179.htm> for more information on the settlement.

It is not surprising that in both the popular press and academic literature the attention has been on the *lead* underwriter and its analyst (Cliff and Denis (2004), Michaely and Womack (1999), etc.). This is because the lead underwriter bears the most responsibility—it is responsible for the due diligence, the majority of advertising and marketing, stabilization, and of course, research coverage is expected. Commensurate with these duties, the compensation structure of an IPO deal heavily favors the lead underwriter.³ However, as Bradley, Jordan, and Ritter (2003, 2005) document, the co-managers participating in the IPO initiate coverage with at least the same intensity as the lead underwriter. Moreover, as Loughran and Ritter (2004) suggest, there has been a substantial rise in the number of co-managers participating in an IPO through time and their almost exclusive function in the IPO syndicate is to provide research coverage.

In a sample of 1993 to 2000 IPOs, we examine the impact of co-managing all-star analysts on IPO pricing. To begin, we first ask: How prevalent is it for a co-manager to allocate a star analyst to an issuing firm, if at all? The opportunity cost is significant for a co-manager in this position. First, as discussed, the lead receives the majority of compensation from the deal. Second, this star analyst is a scarce resource that could be used to generate other investment banking business. Despite this high opportunity cost, we indeed find that it is prevalent— 13 percent of IPOs receive all-star coverage from a co-manager. To put this into perspective, a comparable 19 percent of IPOs receive all-star coverage from their lead underwriter. These noteworthy high all-star participation rates among co-managing banks are economically meaningful and typically overlooked.

The second question we pose: Do these co-managing star analysts influence IPO pricing? We find they do indeed. Regression results for the full sample indicate the presence of a co-managing all-star analyst increases underpricing by a statistical and economic 14 percent, compared to lead all-star coverage of 10 percent. This result increases throughout the sample period, consistent with the growing importance of star coverage, and is robust to known influences associated with initial returns and to endogeneity concerns. The results indicate that co-managers possessing all-star analysts have a very strong influence on IPO pricing. Moreover, we show that it is all-star

³ See Chen and Ritter (2000) for a thorough discussion of the economics of an IPO deal.

coverage that is ultimately the important consideration related to initial returns and not expected research coverage (from non-star analysts) in general.

Finally, why would a co-managing star analyst influence underpricing since the lead underwriter is responsible for setting the price? A co-manager with a star analyst represents a significant cost to the lead underwriter because it has leverage over the lead underwriter. We argue a co-manager with a star analyst has the ability to extract rents from the lead underwriter either in the form of direct compensation (i.e., negotiate for greater fee income or share allocation) and/or indirectly from the threat this co-manager poses in competing for *future* mandates. The lead passes these incremental costs to the issuing firm through underpricing. The issuing firm tolerates more underpricing because it will receive star coverage. More severe underpricing is an indirect payment to the lead underwriter because they can allocate more underpriced shares to their favored clients ((Cliff and Denis (2004), Loughran and Ritter (2004)).

Consistent with the above argument, we find that co-manager all-star participation is strongly related to the *ex ante* probability of firms completing a follow-on offering within three years after the IPO. We interpret this evidence indicative of co-managing stars participating at the IPO stage if they believe there is a probability of future investment banking business. That is, an incentive for the co-manager to participate at the IPO stage is to establish a relationship to curry favor with management for future deals. If a secondary offering or future business seems unlikely, they might be inclined to pass on a co-manager position and use their star analyst to generate other banking prospects; however, we find that all- star status per se is not related to underwriter switching (consistent with Cliff and Denis (2004)), but firms are only willing to “step down” to a less prestigious underwriter if it was an IPO co-manager with a star analyst.

The remainder of this study will proceed as follows. Section I will relate this paper with previous literature and develop the hypotheses tested in the paper. Section II will describe the data and give sample statistics. Section III presents empirical results while Section IV concludes.

I. Literature and hypotheses development

Previous Literature

Rajan and Servaes (1997) documented the first empirical link between analyst following and IPO underpricing in a sample of 1975 to 1987 IPOs. Not only do analysts tend to follow more underpriced deals, they find analysts are systematically overly optimistic about these deals in the short- and long-run. Those IPOs analysts peg as high growth leaders underperform those that are given low growth projections. Aggrawal, Krigman, and Womack (2001) also suggest a positive relationship between analyst coverage and underpricing. They argue the issuing firm strategically underprices the deal to attract analyst coverage, which in turn artificially raises the stock price up until the end of the lockup period when insiders have the first opportunity to cash out their holdings. This explanation suggests that analyst coverage primarily benefits the insiders of the firm.

Cliff and Denis (2004) take a different stance on explaining the relationship between analyst coverage and underpricing. They posit that issuing firms pay for research coverage, particularly by the lead underwriter, through underpricing. More specifically, they find IPO firms that select lead investment banks with *Institutional Investor* all-star analysts are more severely underpriced. Issuing firms are willing to acquiesce and accept higher levels of underpricing if they receive coverage from the underwriter's star analyst.

The hypothesized link between underpricing and analyst coverage implicitly assumes underwriters benefit from underpricing. There are two competing views with regard to this notion. First, the certification hypothesis posits that underwriters, in a similar vein to venture capitalists, have incentives to protect their reputational capital by certifying the true value of the IPO. More reputable banks have a greater incentive to do so. Thus, under the certification hypothesis, the hypothesized relationship between underpricing and the reputation of the investment bank is negative. Evidence in Carter and Manaster (1991) and Meggison and Weiss (1991) support this view; however, more

recent evidence does not [i.e., Bradley and Jordan (2002), Lee and Wahal (2003), Loughran and Ritter (2004)].

On the other hand, underpricing is valuable to the investment bank if they have discretion in the allocation of IPO shares. Under the book-building method, which is almost always used in the United States, the lead underwriter has most discretion in choosing how shares are allocated. If the IPO is a “hot” one, then everyone is going to want shares; however, the underwriter will choose to allocate shares to their best clients as a means to generate future business. Under this view, which Loughran and Ritter (2004) term the “bribery hypothesis,” underpricing is used as a form of currency.

Why would underwriters use underpricing as opposed to directly charging for research services? As discussed in Chen and Ritter (2000) and confirmed here, investment banks opt to charge a fixed percentage to go public. The majority of IPOs have a gross spread equal to exactly 7 percent.⁴ Hansen (2001) and Fernando, Gatchev, and Spindt (2004) argue that a fixed spread contract is efficient. Underwriters compete along other dimensions than the fixed fee. Research coverage is one such method. Thus, if issuing firms are going to pay for research coverage, they will do so through underpricing, as Cliff and Denis (2004) posit.

This view is supported by recent lawsuits against investment banking firms. In particular, two practices involving allocations of hot IPOs, referred to as “spinning” and “laddering,” have been at the forefront of such investigations. Spinning refers to granting favorable allocations of hot IPOs to company executives as a means to generate future business.⁵ Laddering is a tactic used to describe favorable allocations given to institutions and hedge funds that agree to buy shares in the aftermarket at a much higher commission than they ordinarily would pay.⁶ Investment banks generated millions in profits from these quid pro quo arrangements.

⁴ See Chen and Ritter (2000) for a more thorough analysis on the fee distribution within an IPO syndicate.

⁵ Piper Jaffrey was fined \$2.4 million to settle with the NASD for their allocation of hot IPOs to 22 top executives to lure business to their firm (Reuters News, July 12, 2004). Other fines to banks and individuals for spinning are becoming commonplace. In response, regulators proposed NASD rule 2712 which would further reinforce Rule 2710 prohibiting spinning.

⁶ This practice was first leaked in a December 6, 2000 *Wall Street Journal* article. Since the article was published, regulators have been questioning and settling with many of Wall Street’s elite banks. For instance, CSFB agreed to \$100 million in fines to settle charges related to these accusations.

Allocating a star analyst to cover a firm is costly to an investment bank. Besides the direct costs, a significant opportunity cost exists because that analyst could be used to generate other business. This cost is more than offset for an underwriter that wins an IPO mandate, because as just discussed the lead will receive the majority of the profits from the deal and likely won the mandate because of its star analyst. If the issuing firm invites a star analyst's bank to take a co-managing role, this is bad news for the lead underwriter. For instance, Corwin and Schultz (2004) cite an investment banker that says, "if we are the lead, the best number of co-managers is zero." As more co-managers enter the picture, the lead has to share in the profits of the deal. Further evidence presented in Torstila (2001) indicates that investment banks engage in fierce negotiations over the fee structure of an IPO. For instance, he cites the head of the trading desk at J.P. Morgan: "For every minute spent negotiating the gross spread with the client, we probably spend well over 20 times negotiating the split of the gross spread among the various underwriters and co-managers." This is exacerbated if the co-manager possesses an all-star analyst because it gives the co-manager bargaining power over the lead bank. The co-manager may decide to walk away from the deal and not participate if it doesn't get sufficient compensation for allocating its star analyst to the issuing firm. If the lead is not willing to make concessions over the fee structure and the co-manager walks, this would upset the issuing firm because it very much wants the co-managers's star coverage.

In addition to the revenue the lead underwriter receives from the current deal, perhaps more important are the potential revenues on *subsequent* deals. Co-managers also seek the issuing firm's future business. While the co-manager may extract rents from the lead underwriter at the IPO stage in terms of fees, an additional important cost to the lead underwriter is the risk that the issuing firm will switch underwriters for future deals. The ability to curry favor with management to win a mandate may be the incentive for the co-manager to participate in a non-lead position in the first place. Corwin and Schultz (2004) find that being a co-manager in the IPO significantly increases the chances that the underwriter will become the lead on the secondary offering. Furthermore, Ljungqvist, Marston, and William (2004) find that having a star analyst significantly increases a bank's probability of landing the lead position. These findings indicate that the

combination of a co-manager and star analyst reduces the lead's chances of winning future mandates. This represents a considerable cost the lead underwriter faces.

Why co-managing all-stars might influence IPO pricing?

Given the indirect costs to the lead underwriter in competing for future business, coupled with the possibility of lost fees (or less shares to allocate) at the negotiating table, it is unambiguously clear that the lead underwriter incurs significant costs if a co-manager with a star is included as a deal manager in the IPO. The question is how they react in response of these costs and the implications it may have on IPO pricing decisions.

One possibility is that there will be no response. The lead will simply absorb these incremental costs because its negotiating power is low with respect to the issuing firm. In this scenario, the co-manager with star analyst will have *no impact* on IPO pricing. Another plausible explanation is that it will lead to *lower* underpricing because it disciplines the lead underwriter and encourages good behavior. In talks with investment bankers, Corwin and Schultz (2004) say that if the lead underwriter priced the deal too low, the co-manager(s) were sure to tell the issuing firm of such mispricing. Additionally, if the lead sets the offer price too low and too much money is left on the table, this may upset management and they may switch underwriters for any subsequent offerings. Since the co-manager possesses a star analyst, they would be in a good position to secure such a position.

There are also reasons to believe that it will lead to *higher* underpricing. The lead may transfer these costs to the issuing firm, and if so, they will be in the form of increased underpricing. The lead underwriter may convince the issuing firm to leave more money on the table to get co-managing star coverage. Alternatively, if the co-manager effectively negotiates for a larger IPO allocation, the benefits of more severely underpriced shares accrue to both the lead and co-manager (since the co-manager will have more shares to allocate to their favored clients as well). More shares allocated to the co-manager increases the incentives to stay quiet about severe underpricing.

Suppose that more than one bank possessed a star analyst and was competing for the mandate. In this situation, the competition is fierce to be lead, giving the issuing firm the upper hand at the bargaining table. In order to win the mandate, the lead must ultimately agree to a higher valuation (less underpricing). This is because it can't effectively compete on research services as both investment banks have close research substitutes.⁷ Alternatively, it is plausible the issuing firm may be even more inclined to acquiesce and accept a greater discount to garnish star coverage from both the lead and co-manager.

All of these scenarios with respect to the impact a co-manager with star analyst will have on underpricing is a function of the negotiating power between the issuing firm, the lead underwriter, and the co-manager. It is plausible that some or all of these effects are happening, but ultimately we can only observe the net impact.

II. Data and descriptive statistics

To test whether co-managing star analysts have an effect on IPO pricing, we collect data from several sources. We identify IPOs through Thompson Financial's Securities Database Corporation (SDC) New Issues Database over the period 1993-2000. The starting period is motivated by the fact that I/B/E/S does not begin until 1993 and to facilitate comparisons with Cliff and Denis (2004), we choose to employ the same sample period as they do. We delete unit offers, spinoffs, ADRs, closed-end funds, REITs, financials institutions, and issues with midpoints of the file range below \$8.⁸

Analyst data are gathered from I/B/E/S. The main advantage of using the I/B/E/S database in this study is that it identifies the specific analyst making the recommendation. Therefore, we are able to determine whether or not the analyst in question is an all-star. Consistent with Dunbar (2000), Cliff and Denis (2004) and others, we use *Institutional*

⁷ I thank Jay Ritter for suggesting this possibility.

⁸ A fundamental difference between our sample and Cliff and Denis (2004) is that they require the IPO firm to complete at least one SEO following the IPO. We impose no such requirement for the full sample and therefore our sample is more than twice as large as theirs. Later, in subsequent analyses, we do investigate underwriter switching propensities. This later analysis is conditional on SEO participation.

Investor's All Star research team to define all-stars.⁹ Stock price data are from the Center for Research in Security Prices (CRSP).

Insert Table I about here

Table I presents various descriptive statistics of our sample. Of the 2,793 firms in the sample, the average IPO raises \$74.7 million and is underpriced by 30 percent. As many recent studies document, the unusually large initial returns during the internet bubble of 1999 and 2000 skews the mean underpricing upwards for the entire sample. As shown in the next rows, 15 percent of the sample is internet-related while 50 percent are venture capital-backed. There are an average of 2.7 managing underwriters participating in the IPO syndicate. *CM-rank* is a ranking measure of underwriter prestige, developed by Carter and Manaster (1993).¹⁰ The average issuing firm hires an investment bank with an average rank of 7.8 on a 9-point scale. Approximately 80 percent of the sample has a gross spread exactly equal to 7 percent.

Almost three-fourths of IPOs receive analyst coverage from their lead underwriter within one year of going public. This is remarkably close to Cliff and Denis (2004) lead coverage frequency of 79 percent. Similarly, about 68 percent of firms get coverage from a co-managing underwriter. A little over half of the IPOs acquire analyst following from both the lead and a co-managing underwriter. Although Cliff and Denis (2004) do not consider co-managing analysts, our coverage frequencies are on par with Bradley, Jordan, and Ritter (2003).

The final variables in Table I are related to all-star status. *% lead star* is the percentage of IPOs that hire an investment bank in which an all-star analyst ultimately covers the firm within the first year of going public. As shown, approximately 19 percent of IPOs have a lead all-star covering them after the IPO. This is similar to the 22 percent reported in Cliff and Denis (2004). More importantly, however, about 13 percent of IPOs have an all-star covering their firm that was a co-manager. Additionally, 4 percent of IPO

⁹ Since *Institutional Investor's* all-star poll comes out in October of each year, we code all-stars based on year $t+1$. For instance, firm X that goes public in 2000 is going to seek all-stars in the 1999 poll, not 2000 as they are not revealed until late in the year. This is true even for firms that go public after October because the registration period is typically longer than 2 months. Our definition of all-stars is based on whether the analyst was in first, second, or third place in the poll.

¹⁰ Both internet-related firms and updated Carter and Manaster rankings are those employed in Loughran and Ritter (2004). These can be downloaded at <http://bear.cba.ufl.edu/ritter/ritterwp.htm>.

firms receive all-star coverage from both the lead manager and a co-manager. We note these high participation frequencies are economically meaningful and not considered in previous studies.

Insert Table II about here

Because of the non-stationarities in the IPO market during the sample period as described in Ritter and Welch (2002), we investigate each characteristic by year in Table II. Consistent with previous studies, Panel B of Table II shows underpricing increases through time as does average proceeds. Not surprisingly, the percentage of internet firms going public peaked in 1999. Firms receiving venture capital also increased into the later sample period as many of the internet and high-tech firms were venture capital-backed. The number of managing underwriters increases through time and concurs with Loughran and Ritter (2004) and others. This is consistent with the view that as issuers placed more emphasis on research coverage, they desired more co-managers to do exactly that—issue analyst coverage. The average prestige of the underwriter has remained relatively constant across time as the Carter-Manaster rank fluctuates from around the mid-7s to 8. Finally, there was a slight increase in the percentage of firms paying a fixed 7 percent in 1999 and 2000, rising above 85 percent in both these two years.

Analyst coverage from lead and co-managing analysts has increased over time.¹¹ For instance, lead underwriters covered 65 percent of firms they took public in 1993 increasing to 81 percent in 2000. There is a more dramatic rise in co-manager coverage. In the beginning of the sample, a co-manager covered approximately half of IPOs, but by 2000, they covered about 80 percent. Likewise, about 40 percent of IPOs received coverage from both the lead and a co-manager, but this rose to over 70 percent by 2000. We might expect this rise because as we shown in Panel A, the number of co-managers participating in the managing syndicate increased.

There doesn't appear to be a noticeable pattern in lead star coverage until a sharp rise in 1999 and 2000. A similar trend is displayed for co-managing all-star analysts and

¹¹ Some of this increase may be attributed to better data availability through time. For instance, Merrill Lynch is not captured on I/B/E/S until 1998. This could create a bias in our results, but the bias would most likely run against us. For instance, Merrill Lynch is typically at the top of the list in the number of all-star analysts that it employs. Assuming that all-stars influence underpricing, not having a complete sample of all-stars would bias us from *not* finding significant differences. Additionally, we investigate time patterns separately, so this bias is not present in the later part of the sample.

firms that receive all-star coverage from both their lead and a co-managing underwriter. This increase in all-star coverage is consistent with the notion that issuing firms sought all-star analysts, especially during the 1999 and 2000 bubble mania time period.

III. Empirical results

Underpricing and star coverage

In table III, we investigate the relationship between all-star coverage and underpricing. In Panel A, we examine underpricing by analyst coverage and star coverage and in Panel B we partition the sample by year and star coverage. Focusing on Panel A, firms that have star coverage are underpriced by 46.2 percent. This compares to 25.4 percent for firms that receive coverage, but not star coverage, and to 14.3 percent for firms that receive no coverage at all. This implies that coverage may be related to underpricing, but whether or not you received star coverage is ultimately more important.

Insert Table III about here

In Panel B of Table III, we provide a similar analysis to Panel A, but investigate the time series trend in all-star status conditional on the affiliation of the star analyst and underpricing. The first row displays the results for the entire sample. What immediately stands out is that star coverage is related to initial returns, but it doesn't matter whether the star analyst is affiliated with the lead underwriter or co-managing underwriter. The average underpricing in each of the categories, "Lead Star only," "Co-manager star," and "Both Star" are 48 percent, 47 percent, and 49 percent, respectively, which are not significantly different from each other; however, compared to the "No star" category, these initial returns are at least double in magnitude and all three star categories are significantly different from the firms that do not receive star coverage.

While the sample sizes are small in some of the cells, the general pattern seems consistent throughout the years. The one exception is "Both stars" where average underpricing is lower than "Co-manager star" is five of the eight years. There is a dramatic increase in underpricing for firms with all-stars in 1999 and 2000; however, there is approximately the same increase in percentage terms during this time for firms that do not receive all-star coverage. That is, firms without all-star coverage also

experienced a dramatic increase in underpricing in 1999 and 2000. Thus, the rise in underpricing during the dot-com period cannot be fully attributed to all-star coverage.

Insert Table IV here

Multivariate regression results

Since it is likely that all-star coverage is correlated with other firm- and offer-specific attributes, we don't place too much weight on these univariate statistics, but rather analyze the relationship between all-star coverage and underpricing in a multivariate regression. The variables in the model are motivated by previous research. We provide five models. The first model reports the full sample. The second model excludes several variables related to analyst coverage. The purpose of doing so is 1) later we control for potential endogeneity between underpricing and analyst coverage and therefore any bias that we may correct for can be examined; and 2) multicollinearity between the coverage and all-star variables may pose a problem. However, the results are almost identical between both models and the incremental benefit of including the omitted variables between models I and II is very small. The adjusted R^2 as one moves from model I to model II goes from 49.2 percent to 49.1 percent.

Partial is the percentage difference between the offer price and the midpoint of the initial file range. This variable is based on the dynamic information acquisition model in Benveniste and Spindt (1989) and empirical work in Hanley (1993). To date, this variable has the highest predictive power in explaining initial returns. It is based on the premise that investment bankers must compensate investors for truthfully revealing their private demand in the IPO. Rather than adjust the offer price fully to the equilibrium price, the underwriter only partially adjusts it. The remaining adjustment, underpricing, is the reward to IPO investors. As shown, it is highly significant as one might expect.¹²

Log proceeds is the natural log of the proceeds the IPO firm receives. Typically, larger firms have less information problems and thus lower initial returns. This view is supported by the results. *Internet*, *VC*, and *Dual* are all dummy variables. Internet firms have higher initial returns than non-internet firms and therefore we must condition for this characteristic (Loughran and Ritter (2004) and others). Venture capital-backing (*VC*)

¹² A potential concern is that the partial adjustment variable is endogenous, particularly during the 1999-2000 period. We treat it as exogenous as Cliff and Denis (2004) do. Excluding this variable doesn't qualitatively change the results. Other endogeneity aspects are considered in a later subsection.

was originally included in models of IPO underpricing because they were thought to act as certification agents to reduce initial returns thereby maximizing the proceeds to the IPO firm. Meggison and Weiss (1991) and Barry, Muscarella, Peavy, and Vetsypens (1990) found evidence consistent with this notion. Recently, several papers have shown that this is no longer the case (Lee and Wahal (2003), Bradley and Jordan (2002), Loughran and Ritter (2004)). Using data from the 1990's, the relationship between VC-backing and underpricing is positive. We find that it is positive for the full sample, but only strongly related to underpricing in 1999 and 2000. In fact, during 1996 to 1998, it is negative albeit insignificant. *Dual* represents whether or not an IPO has dual class shares in the IPO. Smart and Zutter (2002) find that firms with dual class shares are less underpriced. We find a negative relationship, although it is only marginally significant in the early stage of our sample. *Nasdaqret* is the return on the Nasdaq composite index 15 days preceding the IPO. Loughran and Ritter (2002) and others find a positive relation between prior market movements and initial returns and our findings agree.

The remaining variables are related to analyst coverage. *Manager* is the number of deal managers participating in the IPO. Since the number of deal managers is the sum of the lead underwriter(s) plus the number of co-managers, it is a proxy for the number of analysts a firm is likely to be covered by. Bradley, Jordan, and Ritter (2003) find that the number of deal managers is highly correlated with the number of analysts issuing coverage immediately when the quiet period expires. *Lead*, *Co-manager* and *Bothcov* are dummy variables indicating whether or not the lead, co-manager, or both (a lead and co-manager) issued coverage. Cliff and Denis (2004) include a dummy variable to capture whether or not the lead underwriter issues a recommendation. We extend this one step further by including a control for co-manager coverage. Finally, the variables of utmost interest in this study, *Leadstar*, *Costar* and *Bothstar* are also dummy variables capturing whether or not the IPO had a lead, co-managing, or both are all-star analysts.

The number of managers is not related to underpricing. Thus, this *ex ante* measure for the expected number of analysts that will cover the stock is not an important attribute. If the rise in the number of co-managers over time is associated with the corresponding increase in underpricing, then we would expect that the number of managers would be positive and significant. At the same time, similar to Cliff and Denis's (2004) OLS

results, neither is the lead underwriter dummy variable. Likewise, *Co-manager* and *Bothcov* are not significant. To some extent, the number of managers is a proxy for the lead and co-manager variables and therefore multicollinearity may be a problem. Additionally, the endogenous nature between analyst coverage and underpricing may further explain these non-results.

We find a positive relationship between lead star coverage and underpricing. Holding other characteristics constant, firms with a lead all-star analyst are more underpriced by a statistical and economic 10 percent. This agrees with Cliff and Denis (2004) that firms are willing to pay for star coverage via underpricing. Of more interest, firms with a co-managing all-star analyst are more underpriced by an even greater 14 percent. The incremental effect of having both a lead and co-manager star analyst is positive, albeit insignificant different from zero. While our findings strongly indicate that co-managing all-star analysts influence underpricing, we put these results up to a series of robustness tests to ensure they hold.

In the second model of Table IV (Full sample II), we eliminate *VC* and *Manager* because these two variables are used later as instruments in a two-stage model to condition for the potential endogenous nature between underpricing and analyst coverage. We also eliminate *Lead*, *Co-manager*, and *Bothcov* (the coverage variables) because these might pose a multicollinearity problem with respect to the all-star coverage variables. As shown, the coefficients and significant levels on *Leadstar*, *Costar*, and *Bothstar* are largely unaffected.

Sub-period analyses

Since various papers suggest that the IPO market is not static and the importance of research coverage has grown through time, we provide sub-period results in the remaining three columns. The partial adjustment variable, Log proceeds, internet dummy, dual class dummy, underwriter prestige proxy, and Nasdaq cumulative return variable remain consistently and for the most part hold the same significance levels throughout the sample period. The other conditioning variables, *VC* and *manager* are not consistent or related to underpricing except venture capital-backing is positive and highly significant in

1999-2000.¹³ We focus our attention on the all-star variables, as these are the focal point of the paper. In all three sub-periods, *Leadstar* is positive, significant, and economically meaningful, further supporting the results in Cliff and Denis (2004). The coefficients stay constant around 5 percent in the first two sub-periods, but then rise almost three-fold during 1999 and 2000. *Costar* is positive in all sub-periods, but only statistically significant in the latter two. Both these results reinforce the conventional wisdom that star coverage became more valuable to issuing firms and they were more willing to leave money on the table for this service as we approached the mid to late 1990s into 2000. *Bothstar* is inconsistently signed and not significant in any period.

Heckman two-stage procedure for endogeneity

Examining the relationship between analyst coverage and underpricing poses a potential endogeneity problem as discussed in Cliff and Denis (2004). Analysts can self-select which firms they choose to cover. To control for this, we implement a Heckman selection procedure. In the first stage, a model is estimated to capture lead and co-managing analyst coverage. This binary choice model is equal to one if both the lead and co-manager initiate coverage within one-year of the IPO.¹⁴ The estimates generated in the first model are used in conjunction with the exogenous variables in the second stage model to predict underpricing. It is important to note, however, that our focus is the impact of co-managing all-star analysts and while analyst coverage in general may be endogenous with respect to underpricing, all-star coverage is not. Nonetheless, for completeness, we provide this analysis.

We chose *VC* and *managers* as our instrumental variables for several reasons.¹⁵ First, both are strongly related to analyst coverage, and as shown in Table IV, not related to initial returns (with the exception of *VC* during the bubble period). The number of

¹³ Lee and Wahal (2004) treat *VC*-backing as endogenous. As just discussed, we use it as an instrument in the first stage of a Heckman selection model procedure to predict analyst coverage. A further rationale for why we chose it is discussed in the next subsection.

¹⁴ We also estimate lead coverage and co-manager coverage separately. We chose to present this model because it gauges the intensity of analyst coverage. While modeling them separately leads to different first-stage estimates, it does not qualitatively change the results of star coverage in the second stage model.

¹⁵ We also considered the log of sales as an instrument and solely using *VC* and the number of managers. The choice of instruments has relatively little effect on the star variables. These results are available upon request.

managers is probably the best *ex ante* measure of expected research coverage as Bradley, Jordan, and Ritter (2003) show. Moreover, if issuing firms are paying for research services, it is only these underwriters in which the payment is received. Finally, an F-test that the instruments are jointly equal to zero is 25.1 (0.00) providing confidence in the choice of these instruments.

Insert Table V about here

In Panel A for the full sample, coverage is positively related to the partial adjustment term, internet-related firms, underwriter prestige, and venture capital backing. In the second stage, the variables that were significant in the OLS regressions generally are unchanged here. Specifically, *Leadstar* and *Co-star* are signed correctly and significantly significant at any conventional level. In fact, the coefficients are remarkably close to the OLS case. The fitted coverage instrument, is marginally related to underpricing (p -value = .089).

In Panel B, we provide a sub-period analysis. To conserve space, we only report the coefficients from the star variables and the coverage instrument since they are the variables of most interest. Lead star coverage is positive and significant in two of the three models. Likewise, co-managing star coverage is positive and significant in the latter two periods. Star coverage from both a lead and co-manager is marginally significant during the bubble period. The coverage instrument is positive and significant during 1996-1998, but negative and significant during 1999-2000.

Overall, the OLS regression results, sub-period analyses, and evidence presented from the Heckman two-stage procedure indicate that star coverage is strongly related to initial returns. Underpricing is positively related to both lead and co-manager star coverage when they are the sole all-stars involved in the IPO. Cliff and Denis (2004) show lead star coverage is related to underpricing, but make no predictions about co-managing star coverage. We argue that co-managers are effectively able to extract rents from the lead underwriter and to recoup these costs, the lead transfers them on to the issuing firm in terms of higher underpricing. The issuing firm may be more willing to allow a higher level of underpricing to garnish star coverage from the co-manager. Cliff and Denis also argue that issuing firms pay for non-star research coverage as their coverage instrument is positively related to initial returns; however, we find it is not

consistently signed. Thus, our results indicate that star coverage is an important attribute related to underpricing, not non-star coverage.

Unfortunately, it is impossible to test whether or not the co-manager extracts direct rents by receiving a more favorable share allocation as the data is propriety and not accessible. However, a more important cost to the lead underwriter is the potential lost revenues if the issuing firm decides to switch underwriters for future offerings. Evidence in Corwin and Schultz (2004) and Ljungqvist, Marston, and William (2004) suggest that this cost is real. Corwin and Schultz find a positive relationship between co-manager participation and winning mandates while Ljungqvist, Marston, and William find a correlation between all-star analysts and landing the book manager role. We can test whether or not co-manager all-star participation is influenced by future banking prospects.

Are co-managing all-stars related to the probability of future equity deals?

An incentive of an investment bank with a star analyst to participate in a co-managing position may be because of its ability to establish a relationship with the firm and curry favor with management to win a future mandate. If this is the case, then the investment bank will only tend to participate in deals that have a high probability for future business. It is costly for a bank to allocate its star in a non-lead position as that analyst could be used elsewhere to help win book-managing mandates. In other words, it might be worthwhile for the co-manager to allocate its star analyst at the IPO stage, if a secondary offering seems likely. Of course, this assumes that the underwriter can assess which companies will ultimately do follow-on deals.¹⁶ To test this hypothesis, we model the probability of IPO firms completing a secondary within three years of the IPO by logistic regression. Of the 2,793 firms in the original sample, approximately one-third (871) complete a secondary within this time frame. Explanatory variables are those that are observable at the IPO stage and included in previous models. The one exception is $EPS > 0$ which indicates whether or not the firm had positive earnings at the time of the IPO. Profitable firms may be more likely to conduct a secondary offering, so we include

¹⁶ It also assumes that investment bank is only seeking equity underwriting revenue, but in reality, the firm may participate in debt transactions or M&A activity where they will need to services of an investment bank.

it in the model. We then use the estimated probabilities generated in this model to explain co-managing star participation. If co-managers evaluate the likelihood of future business when deciding whether or not to participate and allocate a star analyst, then the expected future follow-on deals, p^{seo} , should be related to co-managing star participation.

Insert Table IV about here

For the full sample in Panel A, the reputation of the lead underwriter is positively related to the probability of a secondary offering. Likewise, bigger IPOs are more likely to complete a secondary offering within three years of the IPO. Finally, venture capital backed IPOs are marginally related to future SEOs. Whether or not the firm was profitable at the time of the IPO or if it had a lead star analyst is not an important determinant of future equity deals.

As a first pass, we take the estimates from this first stage model (probability of SEO) and split firms into quartiles (based on these estimates). We then examine co-managing star participation. Co-managing star participation is increasing with the likelihood of an SEO. For instance, 7.4 percent of IPOs in the bottom quartile have co-managing all-stars included in the syndicate. This increases to 10.2 percent and 14.4 percent for IPO firms in the second and third quartiles, respectively. Finally, firms in the top quartile have co-managing all-star analysts approximately 20 percent of the time.

As a more formal analyses, we use the estimated probabilities generated in the first stage to model co-managing star participation. In addition to year dummies, we also include VC participation as an exogenous control. As shown, p^{seo} is positive and highly significant suggesting that co-managers indeed evaluate the potential for future business when deciding whether or not to participate in an offering.

For completeness, in Panel B, we separate the three time periods as we do throughout the paper. To conserve space, we only report the coefficient of the variable of interest, p^{seo} . In each period, expected future banking prospects is significantly related to whether or not a co-manager participates at the IPO stage. The evidence supports the notion that an investment bank is more willing to tie up a star analyst in a co-managing position if there exists the possibility of future offerings and thus potential future business.

Does co-managing all-star status increase the probability of winning a mandate?

In the previous section we examined whether underwriters evaluate banking prospects when determining whether or not to participate in the IPO. Here, we examine whether or not they ultimately win the mandate. Of the 871 firms that complete secondary offerings, 271, or about one-third switch underwriters. Thus, the overwhelming majority of firms indeed stay with their original underwriter.

Insert Table VII about here

In addition to variables related to analyst coverage used in this paper, we rely on Krigman, Shaw, and Womack (2001) and Cliff and Denis (2004) to help establish a model. Combining both studies suggest that the time elapsed between the IPO and SEO and the reputation of the IPO and SEO underwriter are by far the most important determinants of switching propensity. Interestingly, Cliff and Denis find that all-star coverage at the IPO stage or SEO stage is not an important determinant of switching underwriters.

Table VII presents these results. The dependent variable is equal to one if the issuing firm switched underwriters and the model is estimated by logistic regression. All variables are as previously defined except the last three included in the model. *Daysfromipo* is the natural log of the number of calendar days between the IPO and SEO. *Changerank* is the difference between the SEO underwriter's Carter-Manaster reputation rank and the IPO underwriter's rank.

The first set of results mirror those of the aforementioned studies. In particular, the number of days that elapses between the IPO and secondary offering is highly related to switching propensities. Not surprisingly, as time between the IPO and SEO lengthen, the relationship between the underwriter and issuing firm weakens and the issuing firm is more likely to switch. Consistent with Krigman, Shaw, and Womack (2001), firms wish to step-up to more prestigious underwriters for their secondary offerings. At the same time, however, all-star status by the lead is not important attribute related to underwriter turnover, but this is also consistent with Cliff and Denis's (2004) finding. Likewise, being a co-manager with a star analyst is unrelated to underwriter switching. Consistent with Krigman, Shaw and Womack there is a negative relationship between underpricing and the tendency to switch banks. If the issuing firm was upset with the lead bank because too

much money was left on the table, the issuing firm would likely fire the lead bank and obtain a new bank; however, this is not the case.

In the remaining columns, we run the same model as before, but include a dummy variable that equals one if the SEO underwriter has a lower reputation rank, but possesses a star analyst, *stepdownstar*. All other variables behave in the same manner as in the previous model; however, *stepdownstar* is positive and significant indicating that issuing firms are willing to step down to a less prestigious underwriter if that bank was a co-manager possessing a star analyst.

A few caveats are in order with respect to this analysis. First, there are only a total of nine observations where the issuing firm drops to a less prestigious underwriter for their follow-on offering. Second, because our interest is in co-manager all-star participation at the IPO stage, it is possible that the analyst was an all-star at that point, but was later dropped from the list. If this is the case, then the issuing firm is less inclined to switch to that underwriter if the analyst no longer has star status. Therefore, we caution the reader in making inferences related to this analysis.

IV. Conclusion

It is well known that *Institutional Investor's* all-star analysts were very influential in bringing banking clients to their firm, particularly for IPOs as issuing firms sought coverage from all-stars to generate positive news and momentum. Much of the attention in the popular press and academic literature has been on the lead star analyst; however, in this paper, we focus on co-managing star analysts.

We find that co-managing all-stars 1) are common; and 2) have a significant impact on underpricing. Over the 1993 to 2000 period, holding other factors constant, co-managing all-stars are associated with a 14 percent increase in underpricing compared to a 10 percent increase for lead star coverage. Our evidence suggests that issuing firms are willing to leave more money on the table for star coverage, but we don't find evidence supportive of the notion that they are willing to pay for non-star coverage.

An explanation for our results revolves around the bargaining power a co-manager possesses over the lead underwriter when it possesses a star analyst. The co-manager must be compensated for this scarce resource or it will use it to generate other

banking business. It can be compensated in one of two ways—direct compensation from a higher than otherwise share allocation or fee distribution or indirectly by gaining access to firm management to curry favor for future mandates. Both these represent considerable costs to the lead underwriter. Rather than absorbing these costs, the lead passes them on to the issuing firm in the form of higher underpricing. Higher underpricing benefits the lead underwriter because they can choose to allocate these shares to their favored clients who will likely reciprocate by using their services in the future. If the co-manager possessing a star analyst successfully negotiates for a larger share allocation, then they will also enjoy the benefits of more underpriced shares for the same reason as the lead.

Allocating a star analyst represents a very high opportunity cost for an underwriter because the analyst can be used to generate other banking business. This cost is more than offset for the book runner, but it is questionable for the co-manager. We show that star co-managing participation is strongly related to the *ex ante* probability of future business; however, we find that the most important determinants of switching underwriters from the IPO to SEO stage is the amount of time that passed between the offerings and the overall prestige of the underwriter. All-star status per se is not an important determinant, but firms will only hire a less prestigious underwriter for their follow-on offering if that underwriter was a co-manager that possessed a star analyst.

This paper furthers our understanding of the role financial analysts play in the IPO process. A potentially lucrative future extension of this paper is the effect the Global Research Settlement will have on analyst behavior with respect to IPO valuations. While it is designed to curtail analyst compensation being tied to investment banking activities and prohibits practices whereby favorable allocations can be profitable for the lead bank controlling share allocations (laddering and spinning), as long as issuing firms continue to lust after star coverage, banks possessing star analysts will have a comparative advantage. If research services can't be paid for indirectly through underpricing, will the fixed spread contract that has existed for over a decade evolve to directly charge for research services? Only time will tell.

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Table I
Descriptive statistics

This table presents descriptive statistics of the sample used in this paper. *Proceeds* is the amount raised in the IPO and in \$millions. *Underpricing* is the percentage difference between the close of the first day of trading and the offer price. *Internet* is the percentage of firms internet-related and *VC* are the percentage of firms that are venture capital-backed. *Managers* are the number of deal managers (lead and co-managers) participating in the IPO. *CM-rank* is the Carter-Manaster underwriter reputation rank. *% 7 percent* is the percentage of firms with a gross spread equal to 7 percent. *% lead, co-manage, and both coverage* is the percentage of firms with coverage from the lead, co-manager, and both the lead and co-manager, respectively. Similarly, *% lead star, co-manage star, and both stars* represents whether or not the lead, co-manager, or both analysts are all-stars. Internet firms and Carter-Manaster ranks are those used in Loughran and Ritter (2004) and can be downloaded at <http://bear.cba.ufl.edu/ritter/pbritter.htm>. The sample consists of 2,793 IPO firms from 1993 to 2000 identified through Thomson Financial's Security Data Company's (SDC) new issue database. Analyst data are from I/B/E/S and all-star analysts are identified through *Institutional Investor*.

Variable	Mean	Median	Minimum	Maximum
IPO characteristics				
Proceeds (\$mil)	74.7	40.8	3.9	5,470.0
Underpricing	29.9%	11.5%	-40.4%	697.5%
Internet	15.3%	NA	0 %	100%
VC	49.5%	NA	0 %	100%
Managers	2.71	3.0	1.0	14.0
CM-rank	7.8	8.0	1.0	9.0
% 7 percent	79.7%	NA	0 %	100%
Analyst characteristics				
% lead coverage	72.4%	NA	0 %	100%
% co-manage coverage	68.2%	NA	0 %	100%
% both coverage	55.4%	NA	0 %	100%
% lead star	18.6%	NA	0 %	100%
% co-manage star	12.9%	NA	0 %	100%
% both stars	4.3%	NA	0 %	100%

Table II
IPO and analyst characteristics by year

This table presents descriptive statistics by year. Panel A presents IPO characteristics for the full sample while panel B presents analyst characteristics. *Underpricing* is the percentage difference between the close of the first day of trading and the offer price. *Proceeds* is the amount raised in the IPO and in \$millions. *Internet* is the percentage of firms internet-related and *VC* are the percentage of firms that are venture capital-backed. *Managers* are the number of deal managers (lead and co-managers) participating in the IPO. *CM-rank* is the Carter-Manaster underwriter reputation rank. *% 7 percent* is the percentage of firms with a gross spread equal to 7 percent. *% lead, co-manage, and both coverage* is the percentage of firms with coverage from the lead, co-manager, and both the lead and co-manager, respectively. Similarly, *% lead star, co-manage star, and both stars* represents whether or not the lead, co-manager, or both analysts are all-stars. Internet firms and Carter-Manaster ranks are those used in Loughran and Ritter (2004) and can be downloaded at <http://bear.cba.ufl.edu/ritter/pbritter.htm>. The sample consists of 2,793 IPO firms from 1993 to 2000 identified through Thomson Financial's Security Data Company's (SDC) new issue database. Analyst data are from I/B/E/S and all-star analysts are identified through *Institutional Investor*.

Panel A: Average IPO characteristics by year

All-star	1993	1994	1995	1996	1997	1998	1999	2000
Underpricing	14.1	8.9	21.3	15.9	13.9	23.4	72.9	58.3
Proceeds	38.5	39.2	51.1	53.6	66.5	91.9	117.5	133.4
Internet	0.3	0.3	2.0	2.5	2.9	13.3	55.6	37.2
VC	53.6	41.8	49.7	48.4	31.2	34.4	62.6	66.9
Managers	2.1	2.0	2.4	2.5	2.6	2.9	3.4	3.6
CM-rank	7.4	7.3	7.7	7.7	7.6	7.6	8.2	8.4
% 7 percent	75.8	70.7	79.8	80.7	78.0	75.2	86.2	85.3
N	289	273	342	523	378	218	423	347

Panel B: Average analyst characteristics by year

All-star	1993	1994	1995	1996	1997	1998	1999	2000
% lead coverage	65.7	67.8	71.6	70.9	72.0	70.2	76.5	81.0
% co-manage coverage	51.6	49.5	66.7	71.9	65.3	67.9	81.8	79.8
% both coverage	40.5	38.8	52.6	55.4	55.0	55.0	66.0	71.4
% lead star	18.0	15.0	19.6	12.0	13.8	17.0	27.2	26.5
% co-manage star	12.5	9.5	13.5	12.6	10.1	11.5	18.0	13.8
% both stars	3.5	2.6	4.7	2.9	3.2	4.1	7.1	6.3
N	289	273	342	523	378	218	423	347

Table III
Underpricing by all-star status

This table presents descriptive results of underpricing by analyst coverage and all-star status. Panel A presents results for analyst coverage and star status for the full sample while Panel B presents star status results by year. In Panel A, Analyst coverage equals “Yes” if the issuing firm has a recommendation within its first year of going public. All-star coverage equals “Yes” if one of the recommendations are made by a star analyst that is the lead manager or co-manager. In Panel B, the same definitions apply, but the information is presented differently (i.e., No Star refers to firms that do not have an all-star analyst that is the lead or co-manager following the IPO firm within its first year anniversary.). Underpricing is defined as the percentage difference between the close on the first day of trading and the offer price. The sample consists of 2,793 IPO firms from 1993 to 2000 identified through Thomson Financial’s Security Data Company’s (SDC) new issue database. Analyst data are from I/B/E/S and all-star analysts are identified through *Institutional Investor*.

Panel A: Underpricing by coverage

		Analyst coverage	
		Yes	No
All-star coverage	Yes	46.2% (856)	NA
	No	25.4% (1,523)	14.3% (414)

Panel B: Underpricing by all-star status and year

Year	No star	Lead star only	Co-manager star	Both star
All years	23.2% (2,034)	48.2% (398)	47.1% (240)	49.1% (121)
1993	13.1% (211)	14.4% (42)	16.6% (26)	26.5% (10)
1994	8.3% (213)	14.8% (34)	8.1% (19)	3.6% (7)
1995	18.9% (245)	31.2% (51)	29.4% (30)	12.3% (16)
1996	14.6% (409)	19.3% (48)	22.8% (51)	18.6% (15)
1997	12.7% (300)	21.3% (40)	16.2% (26)	13.7% (12)
1998	19.4% (165)	30.7% (28)	36.4% (16)	51.8% (9)
1999	51.6% (262)	104.8% (85)	124.8% (46)	89.4% (30)
2000	50.1% (229)	70.9% (70)	74.3% (26)	84.4% (22)

Table IV
OLS regression results: Underpricing

This table presents OLS results for the full sample and subperiods. The dependent variable is underpricing, defined as the percentage difference between the close on the first day of trading and the offer price. *Partial* is the percentage difference between the final offer price and the midpoint of the initial file range. *Log proceeds* is the natural log of the proceeds amount. *Internet dummy* is a dummy variable equal to one if the IPO is internet-related, zero otherwise. *VC* is a dummy variable equal to one if the IPO has venture capital, zero otherwise. *Dual* is a dummy variable if the IPO has multiple class shares offered, zero otherwise. *Cmrank* is the updated Carter and Manister ranks employed by Loughran and Ritter (2004). *Nasdaqret* is the cumulative return on the Nasdaq fifteen trading days before the IPO. *Manager* is the number of managing underwriters (lead plus co-managers) participating in the IPO. *Lead*, *co-manager*, and *bothcov* are dummy variables equal to one if the lead, co-manager, or both issue a recommendation within one year of the IPO, respectively, zero otherwise. *Leadstar*, *Costar* and *Bothstar* are dummy variables equal to one if the lead underwriter, co-manager, or both are all-stars in the year before the IPO as defined by Institutional Investors' All Star Research Team, respectively, zero otherwise. Year dummy variables are included in the full sample regression, but not reported. The sample consists of 2,793 IPO firms from 1993 to 2000 identified through Thomson Financial's Security Data Company's (SDC) new issue database. Analyst data are from I/B/E/S and all-star analysts are identified through *Institutional Investor*. Standard errors are heteroskedastic-consistent using White's (1981) adjustment.

Variable	Full sample I	Full sample II	1993-1995	1996-1998	1999-2000
Intercept	127.59 (.000)	141.92 (.000)	72.54 (.000)	102.23 (.000)	118.50 (.078)
<i>Partial</i>	114.52 (.000)	115.75 (.000)	65.79 (.000)	55.84 (.000)	157.27 (.000)
<i>Log proceeds</i>	-7.85 (.000)	-8.75 (.000)	-4.17 (.000)	-5.96 (.000)	-6.82 (.100)
<i>Internet dummy</i>	15.08 (.002)	15.71 (.001)	6.48 (.344)	32.48 (.017)	3.26 (.544)
<i>VC</i>	3.88 (.010)		2.22 (.064)	-1.71 (.445)	13.71 (.003)
<i>Dual</i>	-2.43 (.243)	-3.13 (.130)	-3.26 (.111)	-1.00 (.561)	-3.14 (.727)
<i>Cmrank</i>	1.90 (.000)	2.21 (.000)	1.26 (.001)	1.76 (.001)	4.20 (.014)
<i>Nasdaqret</i>	103.85 (.000)	104.50 (.000)	31.02 (.098)	76.45 (.004)	103.39 (.001)
<i>Manager</i>	-0.28 (.570)		-0.81 (.618)	0.34 (.736)	-1.78 (.447)
<i>Lead</i>	-0.66 (.725)		-0.23 (.880)	-0.99 (.619)	-5.24 (.512)
<i>Co-manager</i>	-1.49 (.565)		4.95 (.076)	-0.34 (.890)	-4.39 (.569)
<i>Bothcov</i>	0.39 (.818)		0.48 (.764)	0.99 (.669)	4.71 (.347)
<i>Leadstar</i>	9.78 (.001)	10.21 (.000)	5.35 (.007)	5.23 (.018)	15.01 (.030)
<i>Costar</i>	13.90 (.000)	13.96 (.000)	2.54 (.382)	6.48 (.015)	29.40 (.007)
<i>Bothstar</i>	6.03 (.229)	6.65 (.173)	-2.67 (.270)	7.91 (.158)	1.45 (.894)
Adjusted R ²	.4917	.4905	.4273	.2716	.5077
N	2,793	2,793	904	1,119	770

Table V
Heckman two-stage selection results

This table presents results from a Heckman two-stage regression to condition for endogeneity. The first stage models the probability of receiving coverage from both a lead and co-manager. The second stage models underpricing using a series of exogeneous variables and the fitted instrument from the first stage regression. *Partial* is the percentage difference between the final offer price and the midpoint of the initial file range. *Log proceeds* is the natural log of the proceeds amount. *Internet dummy* is a dummy variable equal to one if the IPO is internet-related, zero otherwise. *Dual* is a dummy variable if the IPO has multiple class shares offered, zero otherwise. *Cmrank* is the updated Carter and Manister ranks employed by Loughran and Ritter (2003). *Nasdaqret* is the cumulative return on the Nasdaq fifteen trading days before the IPO. *VC* is a dummy variable equal to one if the IPO has venture capital, zero otherwise. *Manager* is the number of managing underwriters (lead plus co-managers) participating in the IPO. *Leadstar*, *Costar* and *Bothstar* are dummy variables equal to one if the lead underwriter, co-manager, or both are all-stars in the year before the IPO as defined by Institutional Investors' All Star Research Team, respectively, zero otherwise. Year dummy variables are included in both the first and second stage regressions, but not reported. The sample consists of 2,793 IPO firms from 1993 to 2000 identified through Thomson Financial's Security Data Company's (SDC) new issue database. Analyst data are from I/B/E/S and all-star analysts are identified through *Institutional Investor*.

Panel A: Full sample Heckman selection procedure				
Variable	First stage		Second stage	
	Coverage	<i>p</i> -value	Underpricing	<i>p</i> -value
Intercept	15.43	.000	191.67	.001
<i>Partial</i>	1.19	.000	125.02	.000
<i>Log Proceeds</i>	-1.01	.000	-13.42	.002
<i>Internet dummy</i>	0.39	.000	13.73	.000
<i>Dual</i>	-0.31	.004	-5.65	.203
<i>Cmrank</i>	0.36	.000	5.20	.001
<i>Nasdaqret</i>	-0.01	.154	1.01	.000
<i>VC</i>	0.32	.000		
<i>Manager</i>	-0.03	.215		
<i>Leadstar</i>			9.40	.000
<i>Costar</i>			14.41	.000
<i>Bothstar</i>			1.86	.347
<i>Coverage</i>			16.55	.089
<i>Instrument</i>				
Prob > chi ²	0.000			

Panel B: Sub-period Heckman selection procedure: Second-stage results						
	1993-1995		1996-1998		1999-2000	
	Coefficient	<i>p</i> -value	Coefficient	<i>p</i> -value	Coefficient	<i>p</i> -value
<i>Leadstar</i>	4.55	.024	4.36	.183	17.43	.008
<i>Costar</i>	3.41	.214	8.09	.037	29.11	.002
<i>Bothstar</i>	-2.11	.142	2.23	.255	10.48	.075
<i>Coverage</i>	12.93	.223	16.94	.076	-39.22	.085
<i>Instrument</i>						

Table VI
Probability of co-manager all-star participation

This table presents results for modeling co-manager all-star participation. In the first stage, the probability of completing an SEO based on information known before the IPO takes place is estimated. In the second stage, co-manager all-star status is regressed on the estimated probabilities generated from the first stage model. In the first stage, the dependent variable is equal to one if at least one SEO was completed within three years of the IPO date, zero otherwise. *Log proceeds* is the natural log of the IPO net proceeds amount. *VC* is a dummy variable equal to one if the IPO has venture capital, zero otherwise. *Cmrank* is the updated Carter and Manister ranks employed by Loughran and Ritter (2004). *Leadstar* is equal to one if the lead underwriter analyst is an all-star in the year before the IPO as defined by *Institutional Investors' All Star Research Team*, respectively, zero otherwise. *EPS>0* is a dummy variable equal to one if the issuing firm had positive earnings at the time of the IPO, zero otherwise. In the second stage model, the dependent variable is equal to one if the co-managing analyst is an all-star, zero otherwise. P^{seo} is the estimated probability of completing an SEO generated from the first stage model. Panel A present full sample results while Panel B shows sub-period results. In Panel B, coefficient estimates for p^{seo} only are given. The sample consists of 2,721 IPO firms from 1993 to 2000 identified through Thomson Financial's Security Data Company's (SDC) new issue database. Analyst data are from I/B/E/S and all-star analysts are identified through *Institutional Investor*.

Panel A: Two-stage full sample results		
Variable	First stage (SEO estimation)	Second stage (Co-manager star)
Intercept	-4.47 (.000)	-10.11 (.000)
Log Proceeds	0.19 (.003)	
VC	0.16 (.089)	-0.44 (.000)
Cmrank	0.08 (.023)	
Leadstar	0.10 (.3665)	
EPS>0	0.00 (.981)	
p^{seo}		21.30 (.000)
Year dummies	Yes	Yes
Pr > Chi Square	<.000	<.000

Panel B: Sub-period analysis: Second stage results			
	1993-1995	1996-1998	1999-2000
p^{seo}	17.18 (.000)	20.38 (.000)	12.90 (.000)
Pr > Chi Square	<.000	<.000	<.000

Table VII
Underwriter switching propensity

This table presents logistic regression results on the probability of switching underwriters from the IPO to SEO stage, conditional on a completed SEO within three years of its IPO. The dependent variable is binary equal to one if the IPO firm switched underwriters, zero otherwise. *Log proceeds* is the natural log of the proceeds amount. *VC* is a dummy variable equal to one if the IPO has venture capital, zero otherwise. *Cmrank* is the updated Carter and Manister ranks employed by Loughran and Ritter (200). *Lead*, *co-manager*, and *bothcov* are dummy variables equal to one if the lead, co-manager, or both issue a recommendation within one year of the IPO, respectively, zero otherwise. *Leadstar*, *Costar* and *Bothstar* are dummy variables equal to one if the lead underwriter, co-manager, or both are all-stars in the year before the IPO as defined by Institutional Investors' All Star Research Team, respectively, zero otherwise. *Underpricing* is defined as the percentage difference between the close on the first day of trading and the offer price. *Daysfromipo* is the natural logarithm of the number of calendar days between the IPO and SEO. *Changerank* is the difference between the Carter-Manaster rank in the SEO relative to the IPO. *Stepdownstar* is a dummy variable equal to one if the IPO firm switched to a less prestigious underwriter as measured by Carter-Manaster rank, but that underwriter possessed an all-star analyst. Year dummies are included, but not reported. The sample consists of 2,721 IPO firms from 1993 to 2000 identified through Thomson Financial's Security Data Company's (SDC) new issue database. Analyst data are from I/B/E/S and all-star analysts are identified through *Institutional Investor*.

Variable	Coefficient	<i>p</i> -value	Coefficient	<i>p</i> -value
Intercept	-5.18	.033	-5.30	.033
Log Proceeds	-0.19	.168	-0.19	.185
VC	0.24	.199	0.22	.233
Cmrank	-0.11	.198	-0.10	.247
Leadstar	-0.15	.589	-0.15	.572
Costar	0.25	.424	0.06	.864
Bothstar	-0.91	.100	-0.88	.118
Lead	-0.39	.206	-0.38	.215
Co-manager	-0.24	.489	-0.27	.441
Bothcov	-0.14	.730	-0.11	.783
Under	-0.59	.021	-0.56	.026
Daysfromipo	1.45	.001	1.43	.001
Changerank	0.48	.001	0.52	.001
Stepdownstar			1.88	.023
N	866		866	
Pr > Chi Square	.0001		.0001	