



The Fatal Flaw in Underwriter Selection by Venture Capital-backed Companies:

Why Issuers Should Not Rely Solely on Bulge Bracket Bookrunners

Executive Summary

The decline in the number of IPOs from the decade of the 1990s to the present has been well documented, and the underlying causes vigorously debated. Less often discussed has been the corresponding dramatic shrinkage in the number of investment banks that serve as the lead underwriter—or bookrunner—in venture capital-backed IPOs, a phenomenon that is not a direct consequence of either regulation or changes in market structure. In fact, the situation has become so severe recently that there is now what appears to be an oligopoly of bookrunners composed of the very largest, or “bulge bracket,” investment banks. From January 1, 2010 through June 30, 2013, either Morgan Stanley, J.P. Morgan, or Goldman Sachs has served as the lead left bookrunner on 59% of the 148 VC-backed IPOs that have been priced.

The academic literature has explored this topic, with a focus on the non-price dimensions of underwriter selection. Among other explanations, the most compelling theory advanced to date is that analyst coverage is all-important, and that the oligopoly tends to have the best research teams (as measured, in part, by the number of *Institutional Investor* magazine all-star analysts). These analysts earn their all-star status by receiving votes from the largest buy-side institutions, and these accounts—as a general rule—tend to invest in the largest, most liquid stocks. Moreover, the institutional equity sales forces of the bulge bracket firms are structured to cover the top 100 or so largest commission dispensers on Wall Street. This suggests that bulge bracket firms would be best suited to manage large-cap IPOs.

Since January 1, 2010, the median market capitalization of a venture-backed IPO has been \$370 million—in other words, venture-backed IPOs tend to be small-cap stocks. Therein lies the fundamental disconnect. Venture capital-backed companies choose underwriters based in large degree on the quality of their analysts. However, in order to remain relevant and valuable, these analysts must focus on generating actionable trading ideas on large-cap stocks for the buy-side institutions they serve (and which cast the largest number of *Institutional Investor* votes). As a result, the perceived research benefit, which may have largely justified the bookrunner selection in the first place, may not be conferred fully upon the newly public venture capital-backed firm.

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Introduction

What if a major reason for selecting an investment bank to serve as the lead underwriter (“bookrunner”) on an initial public offering for a venture capital-backed company were flawed?

In *Moneyball: The Art of Winning an Unfair Game* (2003), author Michael Lewis chronicles the story of Oakland Athletics General Manager Billy Beane who used a rigorously analytical, evidence-based approach to assemble a competitive baseball team, even though Oakland’s payroll was smaller than those of teams in larger media markets. The central premise of *Moneyball* was that the collective wisdom of baseball insiders (including players, managers, coaches, scouts and the front office) was groupthink and therefore often flawed. The statistics typically used to gauge players were outdated, and decisions made on the basis of those statistics led to sub-optimal outcomes. Beane’s conclusion was that star players were often overvalued and didn’t produce results consistent with their status.

We believe the same groupthink forces are at work regarding underwriter selection for venture capital-backed IPOs, the result of which is an effective oligopoly of three investment banks. Either Morgan Stanley, J.P. Morgan or Goldman Sachs has served as the lead left bookrunner on 59% of the 148 venture-backed IPOs that have been completed since January 1, 2010 (venture-backed IPOs represent 30% of the total 499 IPOs during this 3½-year period). This market concentration has contributed to sub-optimal outcomes for these issuers and, because of the central role that IPOs play in small business capital formation, causes distortions in capital allocation and ultimately negatively impacts the returns to venture capital investors.

Section 1: The Non-price Dimensions of Underwriter Selection

There is a vast body of academic literature that explores the factors used by issuers to select underwriters for their IPOs. These factors can broadly be broken down into (i) a price dimension (where an issuer’s goal is to minimize dilution and maximize the net proceeds from an IPO), and (ii) a non-price dimension.

Price Dimensions

The cost of going public has both a direct component, primarily in the form of underwriters’ fees (or an underwriting discount), and an indirect component, in the form of IPO “underpricing,” which is the difference between the IPO price and the closing price on the first day of trading. IPO underpricing is a form of compensation required by IPO investors who have less information about the issuer’s prospects than the issuer itself. From 1980 to 2012, the mean first-day underpricing (or return to investors) of all IPOs (calculated on a proceeds-weighted basis) has been 18.6%. But there is a massive spread between venture-backed IPOs, with underpricing of 27.7%, and non-venture-backed IPOs, with underpricing of 12.6%.¹ Effectively, first-day returns of IPOs are approximately twice the direct fees paid to underwriters.

This underpricing is an important indirect compensation to the underwriter because the underwriter is able to allocate IPO shares to its preferred institutional clients. In a study of IPOs during 1993-2008, the underpricing was 9% higher than average when underwriting was bundled with “influential” analyst coverage (i.e., *Institutional Investor* all-stars). The study’s authors found that “incremental underpricing associated with all-star analyst coverage is higher for issuers that perceive all-star coverage as more

¹ “Initial Public Offerings: Updated Statistics,” Jay R. Ritter Website, Table 1, April 11, 2013. Venture-backed and non-venture-backed underpricing data based on average returns from 1980-2011. From 2001-2012, the underpricing for all IPOs on a proceeds-weighted basis has been 11.2%.

valuable ...”² In other words, issuers were willing to effectively pay more for the perceived benefit of research coverage from all-star analysts.

However, since by definition the degree of underpricing (or overpricing) is unknowable at the time of the IPO, it is not a factor that management teams can forecast. By contrast, the direct price—or underwriting discount—is fully negotiated and controlled by management. Or is it?

In an intriguing article in the *Journal of Finance* (2000) titled “The Seven Percent Solution,” authors Hsuan-Chi Chen and Jay Ritter explore why more than 90% of the moderate-sized IPOs (defined as those raising \$20-80 million in gross proceeds) in the period 1995-1998 had underwriting discounts of *exactly* 7%—a proportion that was three times higher than a decade earlier.³ The authors argue that the 7% discount is too high, because non-U.S. IPO fees are half as much as U.S. IPO fees, and there is an absence of non-differentiated pricing for different size deals within the moderate-sized bucket, but concede that the convergence remains puzzling to economists. The authors offer several possible explanations of the 7% clustering phenomenon, but lock in on “strategic pricing” as the most plausible reason.

Under Chen and Ritter’s strategic pricing theory, investment bankers do not compete for underwriting business on the basis of fees, because doing so would risk compressing fees and turning underwriting into a commodity business. According to the authors, “it is hard to think of stronger evidence to support the proposition that the participants are thinking strategically. In other words, they are forecasting the spreads that will prevail in the future based on what is done today, and acting accordingly. Thus, each underwriter may decide to keep its spread above competitive levels, even without explicit collusion.”⁴ The exception to the 7% rule is for larger IPOs, where this level of underwriting discount is neither feasible nor sustainable.⁵

To the extent that there is any price competition today, it is not between banker and issuer but rather among the investment banks carving up the 7% spread. If a firm doesn’t receive what it believes to be an equitable allocation of the gross economics, it will withdraw from participation in the underwriting syndicate.

Available data from Ritter show that, astonishingly, 96% of the 473 IPOs priced between 2001 and 2012 that raised gross proceeds of \$25-100 million had underwriting spreads of *exactly* 7%.⁶ In other words, the clustering phenomenon that began in the mid-1990’s has become entrenched as the “standard” price for IPOs, so much so that in October 1998, the NASD felt obliged to issue *Notice to Members* 98-88, which reminded broker-dealers that there was no standard level of underwriting discount and that any type of coordination or collusion among members with respect to underwriting fees was prohibited.

We conclude that clustering, coupled with the issuer’s inability to forecast IPO underpricing, indicates lack of price competition among banks for venture-backed IPO underwriting business.

² Xiaoding Liu and Jay R. Ritter, “Local Underwriter Oligopolies and IPO Underpricing,” *The Journal of Financial Economics*, Vol. 102, p. 580.

³ Hsuan-Chi Chen and Jay R. Ritter, “The Seven Percent Solution,” *The Journal of Finance*, Vol. LV, No. 3, June 2000, p. 1105.

⁴ *Ibid.*, p. 1125.

⁵ Since 1999, there have been 19 IPO auctions bookrun by WR Hambrecht + Co., with spreads ranging from as low as 1.88% (Interactive Brokers Group’s \$1.2 billion IPO in 2007) to a high of 7.00% (four IPOs). As of the date of this paper, there has not been an IPO auction bookrun by WR Hambrecht since May 2007). Source: “Initial Public Offerings: Updated Statistics,” Jay R. Ritter Website, Table 13, April 11, 2013.

⁶ Jay R. Ritter Website, Table 10.

Non-price Dimensions

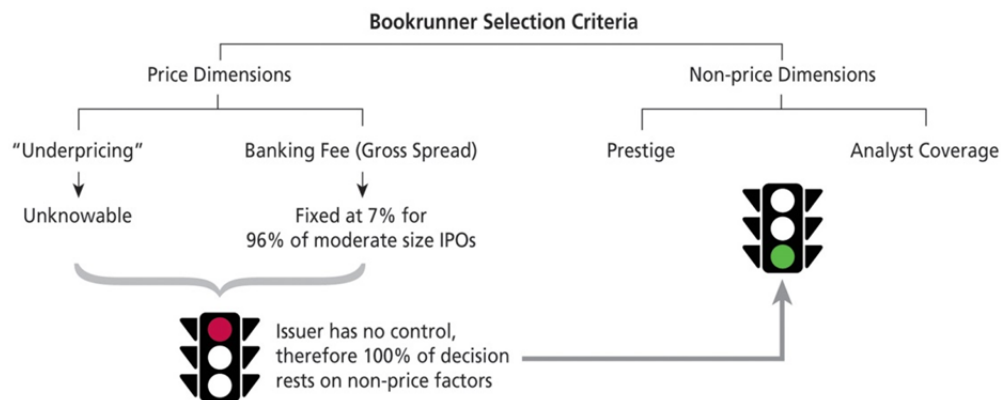
If price is not the determining factor in a venture-backed issuer's selection of an underwriter, then non-price dimensions must be. As the IPO market has evolved over time, several factors posited by academics in earlier times have ceased to be relevant. For example, the composition of underwriting syndicates, once considered important, has changed dramatically:

“Historically, syndicates existed partly for regulatory capital requirement and risk-sharing purposes, and partly to facilitate the distribution of an issue. This was particularly relevant when the lead underwriter did not have a significant retail or institutional distribution network and had limited capital. Today, there is little reason to form a syndicate to perform the traditional roles of risk sharing, distribution and meeting capital requirements. Not surprisingly, syndicate size, as measured by the number of participating firms, has fallen over time, even as the number of co-managers has grown.”⁷

Another example is the so-called “information production” factor, which can perhaps be best summarized as the blending of art and science in the determination of IPO pricing. Under the information production theory, underwriters with different types of investors (institutional vs. retail) located in different regions and with different experiences could all contribute valuable information to be used in the pricing process. While this may have been important in years past, the combined effects of the disintermediation of the retail broker (through online trading), the advent of the self-directed individual and institutional investor, along with the information explosion of the post-Internet era have all caused the amount and quality of pricing information used in the bookbuilding process to decline dramatically, to such a point that the information production theory has now been rendered irrelevant.

After reviewing a number of other factors, we conclude that the non-price dimension of bookrunner selection really boils down to two inter-related factors: prestige and analyst reputation. See Figure 1 below for a simple decision tree that illustrates this selection process.

Figure 1: Bookrunner Selection Criteria



⁷ Chen and Ritter, “The Seven Percent Solution,” p. 1120.

Reputation/Certification

Academics have studied the issue of underwriter reputation in exhaustive detail and their unsurprising conclusion is that the certification role played by a “prestigious” firm has value to an issuer. But how exactly does one go about objectively measuring prestige? And what really is its value?

The two most notable methods for ranking underwriters were developed by Carter and Manaster, who developed a model based on tombstone announcements, and Megginson and Weiss, who crafted their model based on underwriting market share. Carter and Manaster’s main proposition was that underwriters market “low-risk” IPOs in the expectation that (i) these low-risk issuers will survive, and (ii) that they will be able to participate in subsequent financing business. Although we will briefly describe the Carter-Manaster model for illustration purposes, the crucial question for our discussion is whether venture capital sponsors, and the management teams of their portfolio companies, *overvalue* the importance of prestige/reputation and the related certification role in bookrunner selection. We believe they do.

In 1990, Carter and Manaster introduced an empirical framework for measuring underwriter reputation by examining the relative position of underwriters in IPO tombstone announcements, and then assigning a zero (lowest) to nine (highest) integer rank based on the underwriter’s position in the announcement. Based on the rankings of 117 underwriters at the time, only five firms had the highest assigned rank of 9.0: First Boston, Goldman Sachs, Merrill Lynch, Morgan Stanley and Salomon Brothers. Interestingly, of the 501 offerings studied, 352 IPOs had a single lead manager; and L.F. Rothschild, Unterberg and Towbin, though ranked as an 8.0, was the most active lead manager in the study—for 34 new issues.⁸ (As a historical footnote, print tombstone announcements largely disappeared after the 2001 collapse of the IPO market as part of a cost-cutting exercise.) The hypothesis was that because more prestigious underwriters were associated with lower risk IPOs, investors in these IPOs could effectively rely on the certification of the underwriter as a seal of quality approval, and, correspondingly, that investors would demand less return, resulting in less underpricing for the issuer. In other words, the non-price dimension of reputation was indirectly linked to the all-important price dimension of underpricing. However, as we have already seen, when prestigious underwriters are linked with influential analysts, the underpricing is actually greater, not less.

Analyst Coverage

In a previous white paper, we examined the causal links between analyst coverage, on the one hand, and institutional ownership, average daily trading volume and valuation, on the other hand.⁹ We concluded that the greater the number of analysts covering a stock, the higher the level of institutional ownership, the higher the average daily trading volume, and the higher the valuation. But that paper made no attempt to differentiate analysts based on quality, which is a critical issue in the determination of underwriter selection.

Local Underwriter Oligopolies

Professor Jay Ritter, a noted expert on IPOs, has theorized that “local underwriter oligopolies” have formed around all-star analysts as follows: Since the underwriting fees for moderate-size IPOs are essentially fixed at 7%, investment banks need to differentiate themselves and add more services. Among other ways, this is accomplished by bundling analyst coverage with underwriting. Each year, *Institutional Investor* magazine designates three analysts in each of about 70 sectors as all-stars, so there are only about

⁸ Richard Carter and Steven Manaster, “Initial Public Offerings and Underwriter Reputation,” *The Journal of Finance*, Vol. 45, No. 4, Sept., 1990, p. 1063.

⁹ Timothy J. Keating, “Analyzing the Analysts: A Survey of the State of Wall Street Research in the 10 Years After the Global Settlement,” January 2013.

200 total all-stars in any given year, or less than 10% of the total universe of approximately 3,000 sell-side analysts who work on Wall Street.¹⁰ Furthermore, because there are a limited number of highly influential analysts (three all-stars) for any particular sector, this effectively leads to a series of local oligopolies for the underwriting firms that employ these influential analysts.¹¹ Liu and Ritter explain: “Without a well-regarded analyst being involved in the deal, issuers will be skeptical about the ability of an underwriter to successfully maintain demand for the stock in the aftermarket, or even to place it initially. Furthermore, by emphasizing industry expertise, the IPO underwriting business becomes one of differentiated products, reducing the number of viable competitors for any given deal.”¹²

“Analyst Lust Theory” of the Underpricing of VC-backed IPOs

Under a second intriguing notion posited by Professor Ritter—the “analyst lust theory”—venture capitalists have a particular focus on the market price six months (up to a year) after the completion of an IPO.¹³ Why? Because underwriter lockups expire 180 days after the pricing of an IPO, which is the point in time when many VC firms typically make distributions of shares to their limited partners. This same market price as of the date of distribution is also used to calculate all-important internal rates of return (i.e., performance) and incentive fees. In essence, Ritter argues that the desire of venture-backed issuers to secure coverage from all-star analysts that work at prestigious underwriting firms in order to support a strong market in their stock six months after the IPO, actually leads to *more* underpricing at the time of the IPO. Interestingly, this notion conflicts with the conventional wisdom that the certification role played by prestigious underwriters should lead to *less* underpricing. But this is where academia and the real world of IPO investing diverge dramatically.

“Money Left on the Table” = Successful IPO

What the academic community refers to as “money left on the table” is viewed by Wall Street as a successful offering, where investors make money. An IPO after all is more than a financing event, it is also a marketing and publicity event—the debut of a newly public company. While a gain to IPO investors can be viewed as money left on the table by the issuer, the gain only applies to the 10-20% of shares that are typically issued in a venture-backed IPO. The increase in stock price also inures to the benefit of the existing owners of the other 80-90% of the stock. And it is precisely this gain in price that increases the marketability of the stock, for either (i) existing investors, that may be able to sell at higher prices in a secondary offering, and/or for (ii) the company, that may be able to issue new stock in a follow-on offering at a small discount to the market price but at a much higher price than the IPO. In short, an IPO that increases in price is a win for investors, a win for the issuer, and is marketed as a win by the underwriters.

Conversely, an IPO that breaks issue price on its first day of trading (or in the first several days) creates a negative momentum feedback loop, where selling begets more selling and shuns institutional investor interest in the stock in the near term. This type of transaction is bad for the IPO investors, bad for the issuer that may need to access the public capital markets again in the near future (either for itself or in the form of a secondary transaction for VC investors seeking an orderly exit), and embarrassing for the underwriters because it demonstrates an inability to accurately gauge investor interest and price transactions correctly.

¹⁰ Liu and Ritter, “Local Underwriter Oligopolies and IPO Underpricing,” p. 17.

¹¹ Ibid., p. 8.

¹² Chen and Ritter, “The Seven Percent Solution,” p. 1119.

¹³ Liu and Ritter, “Local Underwriter Oligopolies and IPO Underpricing,” p. 3.

We believe that whether having an all-star analyst leads to less IPO underpricing (the certification theory) or more underpricing (the analyst lust theory) is far less important than whether the issuer actually gets the all-star coverage that it believes it is buying.

Section 2: The Myths and Realities of Analyst Coverage

There are several important, implicit assumptions with respect to the role of the all-star analyst that underlie both the certification and analyst lust theories. We will pose questions from an issuer's perspective to highlight these assumptions:

1. What if you "buy" the all-star analyst, but he really doesn't cover the stock in earnest?
2. What if you "buy" the all-star analyst, but you really only get the junior analyst instead?
3. What if you "buy" the all-star analyst, but then he drops coverage after the IPO?

Analyst Capacity Constraint

Assuming that an average analyst covers about 10 stocks, there is a high marginal cost for an all-star analyst to forego coverage of an existing name under coverage in favor of a new IPO stock. (Liu and Ritter refer to this as an analyst capacity constraint.) However, in order to remain relevant and valuable, these analysts need to generate actionable trading ideas on large-cap stocks for the largest assets under management, highest commission dispensing, buy-side institutions they serve (and which disproportionately cast the largest number of *Institutional Investor* all-star votes). For an all-star analyst at a bulge bracket firm,¹⁴ the marginal cost might be millions of foregone commission dollars. As a result, the issuer's perceived research benefit, which may have largely justified the bookrunner selection in the first place, may not be conferred fully upon the newly public venture-backed firm. (See evidence of dropped analyst coverage on page 17.) By contrast, many non-bulge bracket investment banks have analysts that predominantly cover small-cap stocks and sales teams that focus on the small-cap institutional investors who are natural buyers and holders of venture-backed IPOs.

But we don't want to give the false impression that non-bulge bracket firms offer some type of panacea with respect to analyst coverage. To be sure, research coverage as a whole is a commodity in short supply, and there is an analyst capacity constraint at all firms. Consider: The median market cap of the approximately 5,000 exchange-listed companies (i.e., New York Stock Exchange, Nasdaq and NYSE MKT) is an estimated \$450 million. We estimate that almost 1,500, or nearly 30% of all exchange-listed companies have either zero or no meaningful analyst coverage of their stocks. Our point simply is that analyst coverage is a very scarce commodity and an issuer has to spend its banking fees-as-currency very wisely.

"Pseudo" Analyst Coverage

There are two ways that an all-star analyst can discharge his implicit obligation to initiate coverage of a new IPO stock while minimizing (or avoiding altogether) the marginal cost associated with relinquishing coverage of an existing name. We refer to this as "pseudo" analyst coverage.

First, the analyst might "take one for the team" by providing token research coverage for a limited period of time until it is politically expedient to drop coverage altogether. Second, the analyst can provide bare bones research coverage in the form of superficial analysis, with no earnings model or price target, and a perpetual hold rating. In essence, the analyst is signaling that he doesn't care about the name.

¹⁴ We define the "bulge bracket" as consisting of the following 10 global investment banks: Barclays Capital, BofA Merrill Lynch, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, J.P. Morgan, Morgan Stanley, UBS and Wells Fargo.

Alternatively, a junior analyst might be assigned to provide the analysis, which in some cases could make the situation even worse. For the issuer, it is analogous to “buying” the senior banker and then being assigned the junior investment banker to oversee the execution of a financing transaction.

Perversely, according to Greenwich Associates, which is a premier consulting firm for the financial services industry, one of the two most highly valued “research” services provided by Wall Street to the buy-side is direct access to company management.¹⁵ The venture capital community may be operating under the mistaken belief that institutions allocate commission payments for research based exclusively on analyst services, when the reality is that they also want and highly value direct access to management—something that any issuer, by definition, can provide on its own.

Coverage Universe

It stands to reason that an investment bank that focuses on small-cap stocks (e.g., under \$1 billion in market cap) should have equity research that is tilted toward names in the Russell 2000 (a stock index that tracks small-cap stocks) as opposed to the large-cap S&P 500 index. (As of June 30, 2013, the median stock in the Russell 2000 had a market cap of slightly under \$600 million, while the median stock in the S&P 500 was 24x larger with a market cap of approximately \$14.6 billion.) Conversely, an investment bank with a large-cap stock focus should have a relatively higher mix of coverage of names in the S&P 500 relative to the Russell 2000. This distinction largely corresponds with reality on Wall Street.

Figure 2 on the next page provides a scatterplot of the relative small-cap/large-cap research coverage of 30 investment banks (10 bulge bracket firms and 20 non-bulge bracket firms selected on the basis of their activity in public offerings), with data as of July 11, 2013.¹⁶ The size of each sphere is a scaled representation of the total number of stocks under research coverage by each firm. The horizontal axis shows the percentage of stocks in the S&P 500 that have analyst coverage by that firm, while the vertical axis shows the percentage of stocks in the Russell 2000 that have analyst coverage. Not surprisingly, there is a very clear pattern that shows a bunching of eight of the ten bulge bracket firms at about an 80% level for coverage of the S&P 500, whereas the non-bulge bracket firms cluster at about the 20% level.

First, let’s consider the research coverage of the firms that constitute the oligopoly of bookrunners for venture-backed IPOs, namely Morgan Stanley, J.P. Morgan and Goldman Sachs:

- Morgan Stanley covers a total of 890 stocks for research, including 57% of the stocks in the S&P 500, but only 9% of the stocks in the Russell 2000. Its ratio of the number of small-cap stocks with analyst coverage relative to the number of large-cap stocks covered is 0.6x (179 small-cap/283 large-cap).
- Goldman Sachs covers a total of 1,268 stocks, including 86% of the S&P 500, but only 15% of the Russell 2000. Its relative coverage ratio of small-cap to large-cap stocks is 0.7x (291/429).
- J.P. Morgan covers a total of 1,393 stocks (the second most on Wall Street behind BofA Merrill Lynch with 1,502), including 80% of the S&P 500, but only 20% of the Russell 2000. Its relative coverage ratio is 1.0x (392/400).

¹⁵ Greenwich Associates, “U.S Equity Trading Business Falling Short of Expectations in 2010,” June 2010.

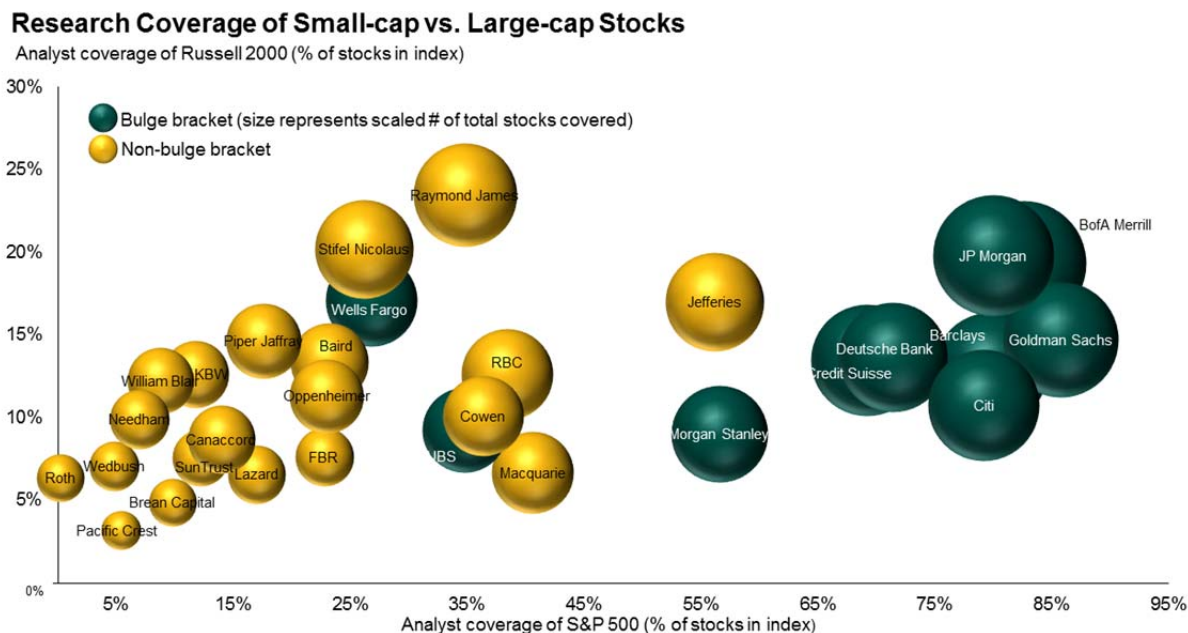
¹⁶ Data provided courtesy of Weild & Co., LLC, as of July 11, 2013.

By contrast, consider the case of two non-bulge bracket firms, which also provide extensive equity research coverage:

- Raymond James covers a total of 1,019 stocks for research, including 35% of the S&P 500 and 23% of the Russell 2000. Its ratio of the number of small-cap stocks with analyst coverage relative to the number of large-cap stocks covered is 2.7x (465/174).
- Stifel Nicolaus covers a total of 922 stocks for research, including 26% of the S&P 500 and 20% of the Russell 2000. Its relative coverage ratio is 3.1x (400/131).

Finally, there are firms such as Needham, which have smaller research footprints but focus almost exclusively on small-cap stocks: 329 total stocks covered, including 7% of the S&P 500, 10% of the Russell, and a relative small-cap/large-cap coverage ratio of 5.6x (196/35). Other firms such as Pacific Crest, may cover a smaller number of total names but have focused resources on a handful of industry verticals (e.g., clean technology).

Figure 2: Percentage of Names Covered in the Russell 2000 and S&P 500 Indices



Source: Weild & Co., LLC

The relative relationship between small-cap and large-cap research coverage reflects the DNA of the investment bank. It raises an interesting question: If analyst coverage were indeed the only non-price dimension to bookrunner selection, then shouldn't issuers weigh a particular underwriter's research capabilities for the *size* of company that is being taken public? In other words, if a venture-backed company expects a sub-\$500 million market cap post-IPO (the median market cap of venture-backed IPOs was \$370 million during our 3½-year study period), shouldn't it ensure that a significant role is given to firms with the best and broadest *small-cap* research coverage? We believe the answer to that question is a resounding yes: An issuer that will have a Russell 2000 range market cap should include at least one non-bulge bracket investment bank that focuses on small-cap stocks as one of its IPO bookrunners.

Section 3: Bookrunner Oligopoly

If price is not part of the bookrunner selection equation, and the principal non-price dimensions in the selection process are reputation and analyst coverage, then logic dictates that only the most prestigious underwriters with the greatest number of all-star analysts should ever be chosen as bookrunners. And, of course, that is exactly what happens. For the 148 VC-backed IPOs priced between January 2010 and June 2013, only 18 unique investment banks served as the coveted “lead-left” underwriter, or bookrunner.

All IPOs

From January 1, 2010 through June 30, 2013, either Morgan Stanley, J.P. Morgan or Goldman Sachs has served as one of the lead left bookrunners on 42% of the 499 IPOs that have been completed. And during the same period, 41 unique investment banks have acted as the lead left underwriter.

Venture Capital-backed IPOs

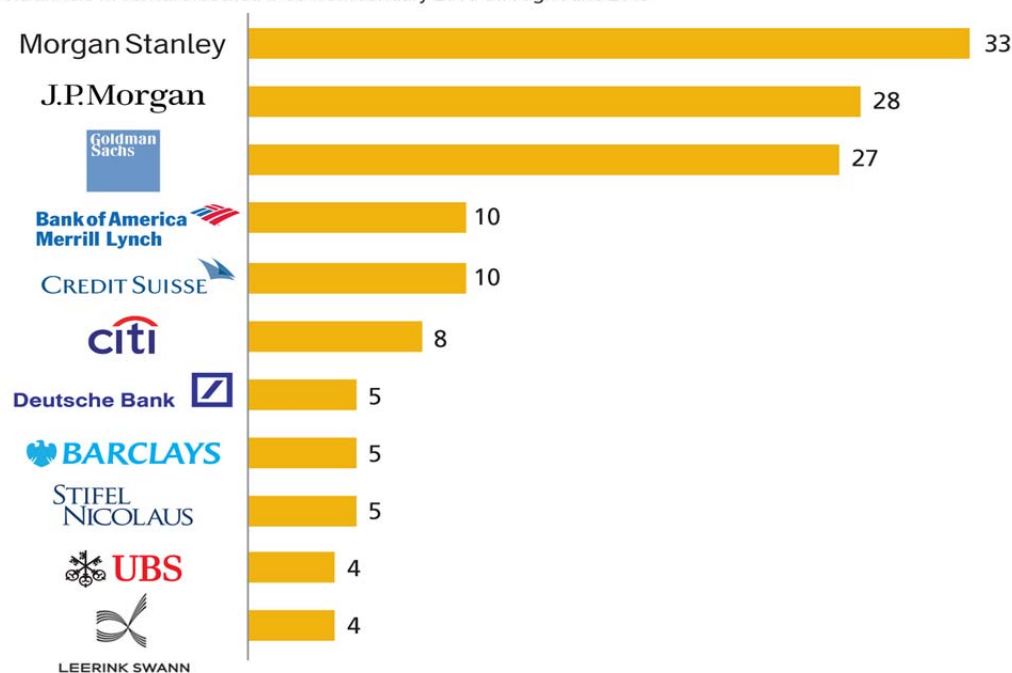
From January 1, 2010 through June 30, 2013, Morgan Stanley, J.P. Morgan or Goldman Sachs combined (with 33, 28 and 27 lead left bookrunner roles, respectively) have served as one of the lead left bookrunners on 59% of the 148 venture-backed IPOs that have been completed.

If we add to this group the next two highest-ranked underwriters based on lead left mandates, BofA Merrill Lynch and Credit Suisse, the market share of the group increases to 73%. The step down in the league table from the #3 to the #4 position is a steep one—each of BofA Merrill Lynch and Credit Suisse’s 10 lead left bookrunning assignments are less than half the 27 managed by Goldman Sachs. Only 11 unique underwriters have bookrun an average of at least one IPO each year since 2010. Figure 3 below is a league table that shows the members of this club.

Figure 3: Bookrunners in Venture Capital-backed IPOs, January 2010 – June 2013

VC-backed Bookrunners

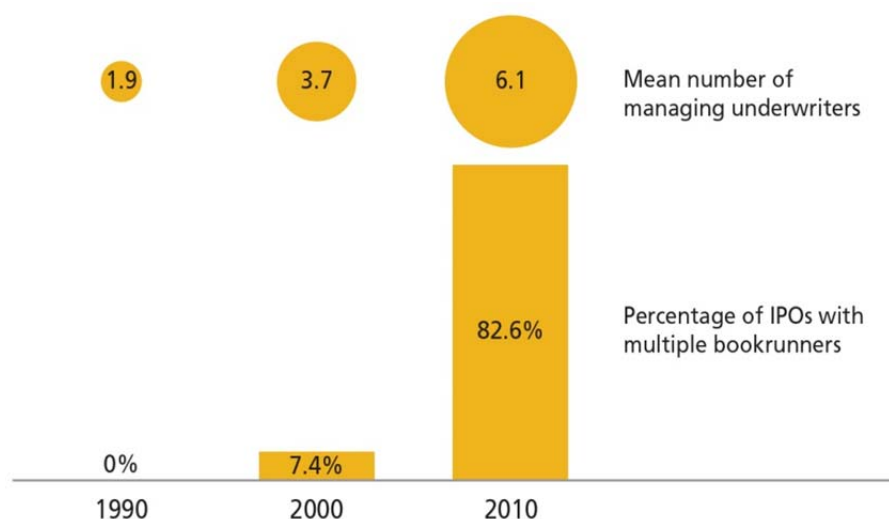
Lead left bookrunners in venture-backed IPOs from January 2010 through June 2013



It was not always thus. Twenty-five years ago, a typical IPO used to have one bookrunner, one or two co-managers and a large syndicate to distribute the stock. As an example, consider Microsoft's \$59 million IPO in 1986. Goldman Sachs was the bookrunner, Alex. Brown was the co-manager and there were a total of 116 underwriters in the syndicate.¹⁷ In 1990, there were no IPOs with multiple bookrunners, and an average of 1.9 managing underwriters. The first instance of multiple bookrunners on a purely domestic IPO occurred in 1993, with Salomon Brothers and Lehman Brothers serving jointly on the \$1.4 billion PacTel IPO.¹⁸ By 2010, the percentage of IPOs with multiple bookrunners had increased to 82.6%, and the mean number of managing underwriters had increased to 6.1.¹⁹ Figure 4 below shows this increase in multiple bookrunners and managing underwriters in 10-year intervals from 1990 to 2010.

There are really two explanations for the changing composition of underwriting syndicates over time. The first is that in the 1970s, 80s and 90s, the aftermarket trading of IPOs was a nicely profitable business for Wall Street and supplemental to the high margins associated with underwriting itself. Fulsome commissions and trading spreads provided strong economic incentive to staff the sales, trading and research departments that supported these stocks. With the compression of commissions and the decimation of trading spreads wrought by decimalization, the sales and trading economics evaporated. For many firms, the only way that equity research could be economically supported was through investment banking business. But the Global Research Settlement of 2003 radically altered the manner in which investment banking departments could interact with their research analysts. (For a comprehensive discussion of how this relationship changed, please see our white paper *Analyzing the Analysts: A Survey of the State of Wall Street Equity Research in the 10 Years After the Global Settlement*.)

Figure 4: Increase in Multiple Bookrunners and Managing Underwriters, 1990 – 2010



The second explanation for this growth in the number of co-managers “is that the issuing firm is essentially buying analyst coverage at no incremental expense since the underwriting fees will be seven percent of proceeds whether or not there are co-managers.”²⁰ The growth of co-manager appointments is effectively a form of underwriter grade inflation, where firms that previously would have been simply syndicate or selling group members have been promoted to co-managers in an effort to secure research

¹⁷ Bro Uttal, “Inside the Deal that Made Bill Gates \$350,000,000,” *Fortune*, July 21, 1986.

¹⁸ Based on data sourced from Dealogic by Jay R. Ritter.

¹⁹ “Initial Public Offerings: Updated Statistics,” Jay R. Ritter Website, Table 11, April 11, 2013.

²⁰ Chen and Ritter, “The Seven Percent Solution,” p. 1116.

coverage. Previously, the economics associated with aftermarket sales and trading would have provided sufficient economic rent on their own to incentivize such syndicate members to provide sales, trading and research coverage without extra inducement. That is no longer the case today. Some historical perspective is required to fully grasp the change that has occurred in the past 30 years.

Historical Perspective: Role Inversion

Once upon a time, no one cared about technology IPOs. During the 1980s, the action was in hostile takeovers, leveraged buyouts and junk bonds—all of which generated massive fees for Wall Street. Morgan Stanley was one of four firms that each earned an advisory fee of \$25 million in connection with the leveraged buyout of RJR Nabisco in 1989.²¹ By contrast, the technology investment banking group at Morgan Stanley was derided as the “dinky deals department.” “Back at Morgan Stanley headquarters on Sixth Avenue in Manhattan, Joe Fogg, head of [Morgan Stanley] investment banking at the height of the takeover craze, scanned a list of his bankers and their fee production. Appraising [Frank] Quattrone’s production, he cracked, ‘I’ve got guys whose *fees* are bigger than the *companies* he covers.’”²²

On the one hand, the largest Wall Street investment banks at the time, such as Morgan Stanley, Goldman Sachs and Merrill Lynch, viewed technology as one industry sector among many and didn’t throw disproportionate resources at technology companies. On the other hand, there were a number of boutique firms that did specialize in technology, but they didn’t have the large sales forces and distribution firepower of the bulge bracket firms. So it came to pass that the *boutiques* enlisted the help of their bulge bracket brethren to market technology new issues. For example, Hambrecht brought Morgan Stanley into the Apple IPO (and not the other way around), as follows:

“Morgan Stanley had landed a lead role in the \$101 million Apple IPO based partly on the relationship between William Hambrecht, whose firm had underwritten both Apple and the hot new biotech IPO Genentech Inc., and Richard Fisher, who then ran the capital-markets division at Morgan Stanley. Hambrecht and Fisher had been classmates at Princeton, class of 1957, and Hambrecht believed that having a name-brand East Coast firm would lend credibility to such start-ups.”²³

Thirty years ago it was the boutiques inviting the bulge bracket firms to act as joint bookrunners in technology IPOs. The “four horsemen” (L.F. Rothschild, Hambrecht & Quist, Robertson Stephens and Alex. Brown) dominated the VC-backed IPO ecosystem and took hundreds of technology companies public in the 1980s.²⁴ These firms (including Montgomery Securities, which replaced Rothschild as one of the horsemen in the 1990s) have disappeared. Today bulge bracket firms dominate venture-backed IPOs, and the boutique firms are brought in not as joint bookrunners but as co-managers.

The Conventional Wisdom

“No one ever got fired for buying IBM” was one of the most powerful marketing phrases of the 1980s. It served to instill fear, uncertainty and doubt into the mind of the buyer that might be considering straying

²¹ Randall Smith, *The Prince of Silicon Valley*, St. Martin’s Press, 2009, p. 33.

²² Ibid.

²³ Ibid., p. 19.

²⁴ Xiaohui Gao, Jay R. Ritter, Zhongyan Zhu, “Where Have All the IPOs Gone?,” December 17, 2012, p. 19.

from the established brand. On Sand Hill Road today, VCs take comfort in recommending bulge bracket firms as the IPO bookrunners for their portfolio companies by citing reasons such as the following:

- “I know they are not going to mess it up when it comes to distributing the stock.”
- “They will get the deal in front of the right investors.”
- “The biggest issues are aftermarket support and research.”²⁵

Of course, the most important (and implicit) assumption is that the bulge bracket firms will be able to complete the IPO all the time and within a reasonable timeframe. All of these reasons *seem* to make complete sense. But just as was the case with the Oakland Athletics in *Moneyball*, we invite the venture capital community to check their premises.

Section 4: Evidence of Fundamental Flaws in Underwriter Selection

Evidence indicates the mix of underwriter selection affects the post-IPO stock price performance of venture-backed issuers. We examine two key performance metrics (the proportion of “successful” IPOs and the frequency of dropped analyst coverage) to determine how the empirical data squares with the conventional wisdom. Finally, we explain the remedial step (effectively, a “second” round of distribution) that is often required in the aftermarket to place the stock in the hands of institutional investors whose holdings more closely align with the market cap, volume and volatility profile of a typical venture-backed IPO.

Unsuccessful IPOs

There has been a steady drop in the number of “successful” IPOs over the last 20 years. For our purposes a successful IPO is defined as one that:

- Is priced within 365 days of its filing;²⁶
- Prices at least at the low end of the range; and
- Is trading at the IPO price or greater 30 days after the IPO.²⁷

The downward sloping black line in Figure 5 that starts at approximately 55% in 1993, and drops to below 25% in 2012, is a regression showing the trend line of successful IPOs during the period. It would be hard to argue that the criteria listed above represent a demanding bar for the definition of success. Yet the success rate, under our definition, has dropped from one-half to one-quarter of all IPOs in the span of 20 years. And this in spite of the fact that companies going public more recently are significantly more mature (i.e., raising more capital privately, staying private longer and generating higher revenue) than 20 years ago. Moreover, the deterioration in IPO performance is universal across all three categories of measurement, meaning that deals are taking longer to complete, IPOs are pricing below the low end of the range more often and IPOs are breaking issue price more often.

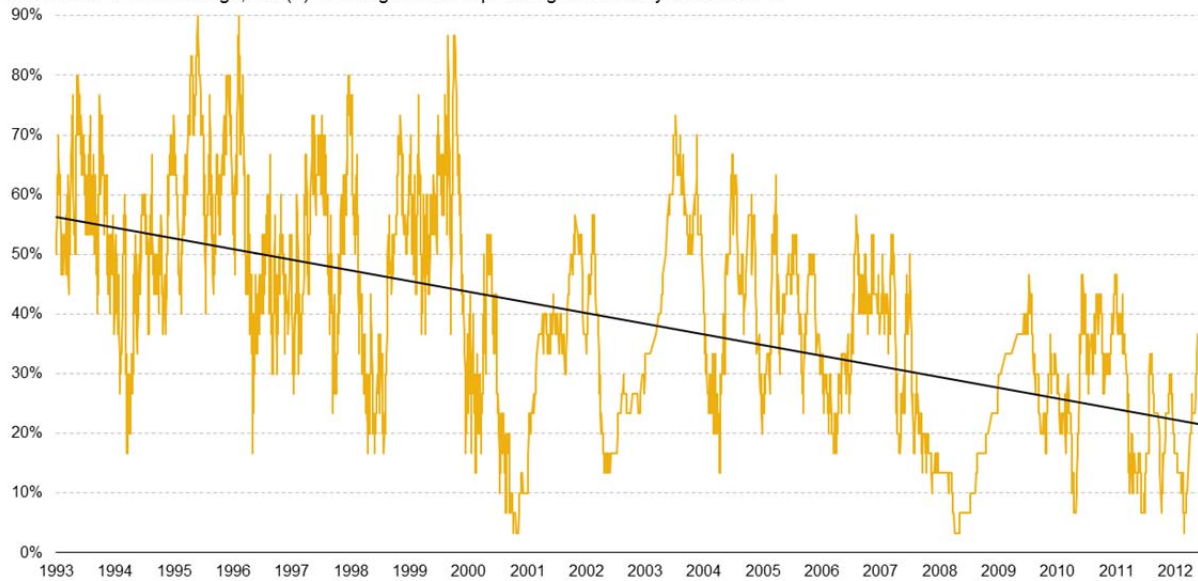
²⁵ Mark Boslet, “VCs Caught in an Underwriter Bottleneck,” *Venture Capital Journal*, December 20, 2012.

²⁶ Under the JOBS Act, signed into law on April 5, 2012, issuers may now file IPO registration statements confidentially, and it is our belief that the majority of IPO registrants now avail themselves of this confidential filing option.

²⁷ Methodology and data provided by Weild & Co., LLC as of July 2013.

Figure 5: IPO Success Rates Have Dropped from 50% to Below 25%**Declining IPO Success Rate**

Success rate of trailing 30 IPO filings, where a "successful" IPO is defined as one that (i) is priced within 365 days of its filing, (ii) prices at at least the low end of the range, and (iii) is trading at the IPO price or greater 30 days after the IPO



Source: Weild & Co., LLC. Corporate filings only; excludes funds, REITs, LPs and SPACs.

Dropped Analyst Coverage Over Time

The extant academic literature that measures analyst coverage of IPO stocks generally counts a stock as being covered if at least one of the bookrunners initiates coverage. We believe that this standard is too lax and doesn't dig deep enough into the realities of the marketplace. So we decided to dig deeper and the results we found may be revealing and contrary to the conventional wisdom.

In a surprisingly high fraction of IPOs, bulge bracket firms have a verified tendency to drop research coverage (over time) of issuers for which they served as a bookrunning underwriter. As a case study, we decided to examine analyst coverage for all of the venture capital-backed IPOs of 2010. We chose the class of 2010 for the following reasons: (i) 2010 was the first year after the financial crisis of 2008-2009, and there was both a significant rebound in the number of IPOs (154 in 2010 compared to 63 in 2009 and 30 in 2008) as well as a change in the landscape of underwriters following the collapse of Lehman Brothers and Bear Stearns; (ii) in the five-year period since 2007 (through the end of 2012), 2010 was the peak IPO issuance year and provided an adequate sample size of venture-backed IPOs (37); and (iii) 2010 provided a long enough period of time to track an entire group of cohorts (2½ -3½ years through June 30, 2013).

Bulge bracket participation in these IPOs was as follows:

- Of the 154 IPOs in 2010, 37 were venture-backed and domiciled in the U.S.
- Of these 37 venture-backed IPOs, 31 had a bulge bracket firm as the lead left bookrunner and six had a non-bulge bookrunner.
- Of the bulge bracket-led IPOs, there were a total of 69 underwriting “roles” filled by bulge bracket firms, consisting of 31 lead left bookrunners, 32 joint bookrunners and six co-managers.

We reviewed each of these IPOs first to determine (i) if and when the bulge bracket firms initiated research coverage, and (ii) whether they dropped coverage. If a firm had been either acquired or delisted, there was no “penalty” for ending research coverage. We specifically concentrated the case study on the 69 underwriting roles occupied by bulge bracket firms in the 31 venture-backed IPOs of 2010 where the lead left bookrunner was a bulge bracket firm. For those cases where the initiating analyst dropped coverage, we further examined whether the dropped coverage was a result of the analyst leaving the firm. If so, we did not count the coverage as dropped if either (i) a new analyst from the same firm picked up coverage of the stock, or (ii) the departing initiating analyst resumed coverage at his new firm, regardless of the status of the new firm.

Our study concluded as follows:

- In seven out of 69 underwriting roles (10% of the time), the bulge bracket firm did not initiate coverage within 90 days—which was more than double the then prevailing 40-day norm (in 2010, prior to the JOBS Act) during which research isn’t provided (i.e., after the expiration of the quiet period).
- Of these seven instances where there was no initiation of research coverage by a bulge bracket firm, the breakdown of underwriting roles was as follows: two bookrunners, two joint bookrunners, and three co-managers. In other words, there were two cases where the bulge bracket, lead left bookrunner of a venture-backed IPO (out of a total sample size of 31 such IPOs) did not initiate research coverage within 90 days. Interesting, to say the least.
- In 13 out of 69 underwriting roles, or 19% of the time, the bulge bracket firm dropped coverage. Of these 13 instances, eight of the drops were by lead left bookrunners and five drops were by joint book runners (with no drops by co-managers).
- In those cases where there was dropped coverage, the average length of time between the initiation report and the drop date was eight quarters.

In other words, in nearly 30% of the instances where a bulge bracket firm served as either the bookrunner, joint bookrunner or co-manager in a venture-backed IPO in 2010, there was either no analyst coverage at all or dropped coverage over time, with the average drop occurring within eight quarters. The management teams of issuers rely very heavily on their VC sponsors to provide the best capital markets advice possible and there is a presumption that the value should extend well beyond the time when the VCs may be exiting post IPO. Because there are very strong correlations between analyst coverage on the one hand, and the level of institutional ownership, liquidity and valuation on the other hand, the consistency and quality of analyst coverage matters greatly to the issuer over the long term regardless of whether the VC chooses to remain as a long-term investor in the company.

As a matter of completeness, we also examined the 14 venture-backed IPOs in 2010 that consisted of either (i) the combination of a *bulge* bracket bookrunner and a *non-bulge bracket* joint bookrunner (eight transactions), or (ii) the combination of a *non-bulge bracket* bookrunner and *any* type of firm as a joint bookrunner (six transactions). In these 14 transactions, there were a total of 19 non-bulge underwriting

roles. Out of the 19 total underwriting roles, there were two instances of dropped research coverage by a non-bulge bracket firm (11% of such roles).

Based on a case study of a single year of venture-backed IPOs, there was a combined 30% chance (approximately) that a bulge bracket firm either did not initiate analyst coverage at all or dropped coverage (and, in such cases, in eight quarters on average). We do not represent that such a rate of incidence is either typical or predictive, but we find it noteworthy nonetheless. Figure 6 below is a table that summarizes the status of research coverage for the underwriting roles associated with bulge and non-bulge bracket lead and joint bookrun venture-backed IPOs in the class of 2010.

Figure 6: Comparison of Bulge Bracket vs. Non-bulge Bracket Research Coverage

Research Coverage of Venture-backed IPOs in 2010				
Research Coverage	Bulge Bracket		Non-bulge Bracket	
	#	%	#	%
Did not initiate coverage ¹	7	10	0	0
Dropped coverage ²	13	19	2	11
Continued coverage ³	49	71	17	89
Total	69	100	19	100

¹ Did not initiate coverage within 90 days of the IPO.

² There is no penalty if a firm has been acquired or the covering analyst left the firm and resumed coverage at his new firm.

³ Underwriting firm initiated coverage within 90 days of the IPO and continues to cover the firm or covered the firm until it was acquired.

We recognize that we have chosen a single year as a case study, and that such a selection exposes us to charges of cherry picking or data mining. We did not examine a time series and lay no claims to statistical significance for any of our findings. In fact, we did not even bother to look at the data in the years after 2010 because the sample period is still too short to be meaningful. Nor did we review the years prior to 2010, but others have. For example, in a study of all IPOs from January 2005 to June 30, 2010,²⁸ investment bank William Blair & Company concluded the following:

- Bulge bracket firms initiated coverage in their own bookrun IPOs an average of 91% of the time—not 100% as one might otherwise expect. In a sample of seven non-bulge bracket firms with bookrun IPOs, the average was 97% (Barclays and Wells Fargo are included in our definition of bulge bracket but excluded by Blair).²⁹
- In those instances where a bulge bracket firm served as co-manager of an IPO, research coverage was initiated on average only 46% of the time.
- In their 5½-year study period, Blair found that bulge bracket firms provided ongoing (i.e., not dropped) analyst coverage for their IPO clients on average only 66% of the time when the firm was a bookrunner, and on average only 37% of the time when the firm was a co-manager. In the sample of non-bulge bracket firms, the corresponding average numbers were 74% and 78%, respectively.

Clearly, bulge bracket firms have a great brand—and deservedly so. But we believe that the halo effect may be unjustly overextended in this regard, with the bulge bracket firms receiving full credit for their

²⁸ “ECM Discussion Materials,” William Blair & Company, December 6, 2010, p. 13.

²⁹ The seven non-bulge bracket firms included in the sample were: William Blair, Robert Baird, Cowen, Jefferies, Oppenheimer, Piper Jaffray, Raymond James and Thomas Weisel.

expertise in a given industry, regardless of whether the complete benefit is actually conferred upon the venture-backed IPO company. Stocks that perform extremely well in the aftermarket will naturally attract more research coverage, because investor interest follows performance. And some Russell companies will grow over time to become S&P 500 stocks. But there is a group of companies with market caps of between \$100 million to \$1 billion that will never get bigger but which nonetheless offer positive investment opportunities for investors and benefit the most from ongoing analyst coverage. We believe that non-bulge bracket firms are often better positioned to match these companies with investors hunting for promising emerging growth companies.

The Need for “Double” Distribution

Did you ever wonder why it is that there is such high trading volume on the first day of trading after an IPO? First day trading volume equal to 60-70% of the number of newly issued shares is typical. Is such heavy volume the hallmark of an IPO that has been broadly distributed to a group of core, fundamentally-oriented investors that will be long-term holders of the stock? These are puzzling questions, with disturbing answers. Unfortunately, in many IPOs there is effectively a need for two rounds of distribution of the stock, which means that the underwriters did not do a good job of marketing the issuer and allocating shares to the right types of buy and hold, long-term investors.

The first round is the IPO, and this is where damage can be done if stock is allocated to large institutional investors, which are often not natural holders of stocks with market caps under \$1 billion (as was the case for 85% of the venture-backed IPOs during our study period). As discussed earlier, there is a very high marginal cost for an all-star analyst to forego coverage of an existing name in favor of covering a new small-cap IPO (refer to discussion of pseudo coverage in Section 2). Institutional sales forces of bulge bracket firms have little incentive to recommend small-cap stocks to their top 100 commission dispensing roster of institutional investors who demand and require actionable ideas in liquid, large-cap names. In the worst-case scenario, how does Round 1 end? The large institutional investors hoping or looking for a first day “pop” flip the stock, the analysts provide pseudo coverage (until they begin dropping coverage altogether), and the institutional salesmen never bother to get actively involved in the first place to sell the issuer’s story to large institutions.

In those cases where a Round 2 distribution is necessary, the issuer now has to go through the process all over again in the form of a non-deal roadshow, but this time more likely with a non-bulge bracket firm that may have served as a co-manager in the IPO. These firms tend to cover a relatively higher percentage of Russell 2000 names and a lower percentage of S&P 500 names—the exact inverse of bulge bracket firms. The analysts at these firms don’t have a high marginal cost for assuming coverage. The institutional sales forces of non-bulge bracket firms actively cover a very different institutional investor account universe, including and especially those that are of the long only (as opposed to hedge funds), position building, low turnover, long-term holding, and low commission paying variety. In other words, the non-bulge bracket co-manager introduces the issuer to exactly the type of accounts that it should have had one-on-one meetings with during the IPO road show, and which may have received token allocations (if any) during the IPO itself.

In August 2009 the National Venture Capital Association issued a four-pillar plan to restore liquidity in the venture capital industry, with Pillar #1 calling for an expansion of IPO ecosystem partners—meaning primarily non-bulge bracket investment banks that serve emerging growth companies.

In order to achieve this, we recommend that prospective venture-backed IPO issuers engage a capital markets advisory consultant to objectively assist with underwriter selection and IPO execution—and help overcome the inherently “conflicted” underwriting process with a better alignment of interests. There is no incremental cost to the issuer if the cost of such a service comes out of the underwriting discount. And

the service providers in this specialty niche are typically professionals highly experienced with equity capital market businesses at bulge bracket firms. We suspect that the addition of a carefully (and systematically) selected non-bulge bracket firm to a bookrunning role would greatly benefit most venture-backed IPO issuers.

Conclusion

We believe that venture-backed issuers would benefit from including non-bulge bracket firms when selecting bookrunners for their IPOs. We encourage VCs and management teams of their portfolio companies to select a blend of underwriters after having carefully considered: (i) the non-price dimensions of underwriter differentiation (prestige and analyst coverage), (ii) the risk of size misalignment between the market caps of venture-backed companies and the institutional sales, trading and research franchises of bulge bracket investment banks, (iii) the risk of pseudo analyst coverage, (iv) the low “success” rate (as defined) of all IPOs and the potential underlying causes, (v) the drain on management’s time imposed by the need to conduct a non-deal road show after the IPO in order to get the stock into the hands of its natural long-term owners, and (vi) how this “second distribution” might have been avoided in the first place. After such careful consideration then, and only then, choose the bookrunners.

About Keating Investments

Keating Investments, LLC is a Denver-based SEC registered investment adviser founded in 1997, and is the investment adviser to Keating Capital, Inc. (www.KeatingCapital.com). Keating Capital is a business development company that specializes in making pre-IPO investments in emerging growth companies that are committed to and capable of becoming public. Keating Capital's shares are listed on Nasdaq under the ticker symbol "KIPO."

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