

# Regression Analysis and the Discount for Lack of Marketability

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*This discussion considers the use of regression analyses for purposes of estimating a discount for lack of marketability within a valuation analysis. This discussion focuses on two published studies, which each employ a regression analysis. The first study is entitled "Firm Value and Marketability Discounts" by Mukesh Bajaj, David J. Denis, Stephen P. Ferris, and Atulya Sarin, which is referred to here as the "Bajaj Study." The second study is entitled "Market Discounts and Shareholder Gains for Placing Equity Privately" by Michael Hertzels and Richard L. Smith, which is referred to here as the "Hertzels and Smith Study." Collectively, the above studies are referred to as the "Private Placement Studies."*

## INTRODUCTION

In the context of closely held business valuation, one of the controversial issues that an analyst may have to deal with is the discount for lack of marketability (DLOM) inherent in a private equity holding. In many types of business valuations, the analyst may often answer questions such as, "Is a DLOM appropriate to apply in the subject case? What is the size of the DLOM? How can I support my concluded DLOM?"

The research and data relied on to support an estimated DLOM are often an important part of the closely held business valuation. Over the past decades, the business valuation profession has been introduced to several studies that have employed a multivariable regression analysis in order to try to pinpoint the exact value of the DLOM applicable to a business valuation.

Two of the more recent studies are the Bajaj Study<sup>1</sup> and the Hertzels and Smith Study.<sup>2</sup> Both of those studies analyze actual private stock placements and the prices at which those placements transact. The prices of these unregistered (i.e., restricted) stocks are compared with the private placement prices of registered stock of the same

company in order to estimate the discount attributed to the lack of marketability inherent in the unregistered stock compared to its publicly traded counterpart.

The following discussion summarizes those studies and the conclusions that they reach regarding the DLOM. It is important to note that the Bajaj Study is somewhat of an extension and update of the Hertzels and Smith Study. Furthermore, the purpose of the Hertzels and Smith Study was not to develop a model that predicts the size of the DLOM, but rather to test whether certain factors contribute to the DLOM.

The Bajaj Study, on the other hand, makes direct claims regarding the predicted size of the DLOM. For these reasons, the primary focus of this discussion relates to a summary of the Bajaj Study, with a secondary focus on the Hertzels and Smith Study.

There have been many articles published regarding certain areas of the Private Placement Studies and their relevance in estimating a DLOM. This discussion aims to provide a comprehensive analysis of the Private Placement Studies, covering (1) general issues when using regression models to estimate the DLOM and (2) the specific issues related to the two studies.

## GENERAL ISSUES WHEN USING REGRESSION MODELS TO ESTIMATE THE DLOM

As mentioned above, both of the Private Placement Studies perform a regression analysis using private placement data points. The purposes of the multivariate regression analysis are (1) to identify the factors which contribute to the discounts seen in private placements, and (2) in the case of the Bajaj Study, to isolate the portion of the privately placed stock discount attributed to the DLOM. This is because the authors of the Bajaj Study argue that there are other factors besides marketability that influence unregistered stock discounts.

However, there are many hurdles that a regression analysis must pass in order to have accurate predictive power. Dr. Stanley Jay Feldman highlights the issues associated with the use of regression analysis in the September 2002 article “A Note on Using Regression Models to Predict the Marketability Discount.”<sup>3</sup> Several of those issues are highlighted below.

First, the “r-squared” value in a regression model is an important factor that illustrates the explanatory power, or lack thereof, of a particular model. In the context of any of the Private Placement Studies, the r-squared statistic represents the percentage of the variance in the overall price discount that is explained by the independent variables in a particular model. A large r-squared would indicate that the independent variables of a given model can explain a large portion of the variance seen in the dependent variable.

It is noteworthy that all of the regression models employed in the Private Placement Studies have an r-squared value of less than 50 percent. Essentially, with each of the Private Placement Studies, the amount of the price discount variance that is unexplained by the regression models exceeds the amount of the price discount variance that is explained by the model. This conclusion raises questions such as: What factors account for the other half of the discount? And, why did the Private Placement Studies not investigate and include those factors as independent variables?

Second, other important data points to examine in a regression analysis are the various test values such as p-values and f-statistics. Supporters of the Private Placement Studies often cite that their models are “statistically significant” due to acceptable values for certain regression statistics such as the p-values and f-statistics. However, as Feldman describes “statistical significance [of an independent variable] only means that the coefficient is not likely to be zero.”<sup>4</sup>

In other words, the statistical significance of an independent variable in a regression model has little to do with the accuracy or predictive capacity of the model. Rather, it simply means that the independent variable affects the dependent variable in some way.

For example, in the context of the Bajaj Study, the regression model concludes a coefficient of 7.23 percent for the “registration indicator,” which is a dummy variable that has a value of one if the stock is unregistered, and zero if the stock is registered.

The high level of statistical significance for the Bajaj Study registration indicator (i.e., a low p-value) provides no indication of whether or not 7.23 percent is in fact the correct value of this coefficient (i.e., what the Bajaj Study authors would argue is the indicated value of the DLOM). All this suggests is that the registration status of the stock has an effect on the amount of the overall price discount. However, the statistical significance of a coefficient does nothing to support the accuracy of the numerical value of the coefficient.

Third, Feldman points out that cross-sectional models (such as those employed in the Private Placement Studies) “only [apply] to the time interval of estimation . . . a model estimated with one sample of firms would have to demonstrate that it could accurately predict values of the dependent variable in another sample at a different point in time before one could conclude that the model’s predictive characteristics were satisfactory.”<sup>5</sup>

So, even if the models used in the Private Placement Studies were completely accurate in the context of the sample data (which may not be the case, as described above), they would still provide little support for predicting the DLOM of an out of sample company in a different time period, at least until the authors demonstrate that their models are accurate across multiple samples and time periods.

In fact, in his whitepaper titled “Restricted Stock Studies: Estimating Discount for Lack of Marketability,” Dr. Ashok Abbott, a finance professor at West Virginia University, describes his attempt to recreate the Private Placement Studies.<sup>6</sup> Abbott tested the models used in the Bajaj Study and the Hertz and Smith Study by applying similar methodologies and the same independent regression variables as used in those studies, but using different restricted stock databases.

Ultimately, Abbott found that his recreated regression models had similar, but even lower statistical significance and explanatory power as the original models, suggesting that those two models may be inaccurate at predicting discounts for an out of sample company.

There are significant issues with using a multivariate regression model to quantify a DLOM. Unless a model is proven to (1) be statistically significant, (2) have sufficient explanatory power, and (3) be accurate across multiple data points and time periods, it cannot be relied upon exclusively. As illustrated above (and further explained below), the models employed in the Private Placement Studies fail to pass some of these tests.

## SPECIFIC ISSUES RELATED TO THE PRIVATE PLACEMENT STUDIES

### Are Registered Shares Freely Tradable?

One important assumption within the Bajaj Study is that registered shares are freely tradable:

Registered shares can be transacted freely, and the fact that the firm was publicly traded meant that there was a ready market for these shares. Despite their marketability, registered shares were also placed at discounts. . . . Clearly, the discounts on private placements are being generated, at least in part, by factors that are distinct from the marketability of these issues.<sup>7</sup>

This assumption that registered shares are freely tradable is extremely important because it is ultimately the primary justification the authors use to conclude that the registration indicator is the sole factor that isolates the DLOM. If this assumption does not hold, and the registered shares are not freely tradable, then the DLOM suggested by the regression analysis in the Bajaj Study is understated.

Similarly, although the authors of the Hertz and Smith Study do not make this same claim, analysts who point to the Hertz and Smith Study regression model to support a DLOM inherently rely on this premise as well. However, the premise that registered shares are freely tradable is not necessarily true. This is because there are several situations in which registered shares are not freely tradable.

One such instance is if an investor owns a block of stock that is large enough to require that the investor be considered an “affiliate” by the SEC. Generally, an investor is considered an affiliate if he or she owns at least 5 percent to 10 percent of the outstanding shares of the company.<sup>8</sup> If that is the case, then SEC Rule 144 generally limits the amount of shares that can be transferred to approximately one percent of the outstanding shares per quarter (depending on the average trade volume of the com-

pany’s shares). In other words, if an investor owns a block of registered stock that comprises 10 percent of the total shares outstanding, it will likely take no less than 2.5 years to completely sell that interest. Obviously, this restriction is contrary to the idea of being “freely tradable.”

In the Bajaj Study, the average overall block size of the private placements was 13 percent of the shares outstanding. If these shares were purchased mostly by one investor, the Rule 144 restriction would be in effect, and despite being registered, those shares would not be freely tradable.

Supporters of the Bajaj Study contend that while the average overall block size is around 13 percent of total shares outstanding, there are usually several investors involved. If there are several investors that each purchase a significant amount of shares, then each investor would hold less than 10 percent of the outstanding shares and thus may not be subject to the Rule 144 restrictions. However, there is insufficient evidence presented in the Bajaj Study to determine the amount of shares purchased by each investor in each private placement.

Methodologically, it is concerning that the Bajaj Study does not clarify whether or not any of the investors within the registered private placements were limited by SEC Rule 144. Since the Rule 144 restrictions run contrary to the idea of being “freely tradable,” it is an important consideration that the Bajaj Study does not effectively address.

Furthermore, even if the transaction block sizes used in the Bajaj Study were less than 10 percent of the outstanding shares, there could still be liquidity issues depending on the trading volume of the shares. Despite not having regulatory restrictions on trading, there may very well be blockage aspects to privately placed registered stock. For example, many companies that participate in private placements are relatively small as compared to most publicly traded companies. Some of these smaller public companies may have low trading volume. Therefore, while an investor may legally be able to sell his shares immediately, low trading volume would prevent him from doing so at fair market value.

Even more concerning is the lack of clarification that is cited in both the Bajaj Study and the Hertz and Smith Study as to how exactly it was determined whether or not the shares used in the studies were registered or unregistered. In fact, there are various “degrees” of registration. For example, some shares may be unregistered at the time of the transaction but may have registration rights attached, which include some guarantee of near-term registration. There is no explanation within the Bajaj Study or the Hertz and Smith Study as to how this issue

was handled and how transactions were classified for unregistered or registered shares.

In fact, in an article by Mark Mitchell and Mary Norwalk, the authors attempt to track down and validate the data points (i.e., private placement transactions) that were used in the Bajaj Study and the Hertz and Smith Study.<sup>9</sup> They were ultimately unable to verify the registration status of approximately half of the issues that the Bajaj Study and Hertz and Smith Study classified as being “registered.” Again, this lack of clarification is concerning.

Furthermore, under the efficient-market hypothesis, market awareness of stock price arbitrage opportunities suggested by the Bajaj Study would quickly be traded away if the registered shares are truly freely and immediately tradable in the public market. The arbitrage exists because a buyer of a registered private placement at a discounted price could immediately turn around and resell these same shares in the secondary market for a profit based on the discount.

This is only the case if these shares are truly freely and immediately tradable in the secondary market. If they are, demand for the shares would increase, which would, in turn, increase the price such that the arbitrage or discount would approach zero. The fact that the registered shares actually traded at a discount clearly indicates there was some restriction on marketability.

Ultimately, because one of the most important assumptions of the Bajaj Study regression model is left largely unsupported, it may not be a reliable source for the estimation of the DLOM.

## The DLOM and the Restricted Stock Discount

The Bajaj Study authors list several firm-specific and issue-specific factors that they describe as being “distinct from considerations of marketability.”<sup>10</sup> These factors include (1) the fraction of total shares offered, (2) business risk, (3) financial distress, and (4) total proceeds from the placement. The Bajaj Study claims that increases or decreases in these characteristics affect the assessment and monitoring costs of investors, and thus would explain part of the discounts realized in private placements of stock.

Aside from the problems with the theory of assessment and monitoring costs, which are addressed further below, these aforementioned factors are not different or distinct from marketability. Rather, many business valuation analysts would argue that these factors contribute to the level of marketability of a stock, rather than being distinct from it.

As Shannon Pratt writes in his March 2002 article “Dr. Bajaj Responds to Dr. Pratt’s February 2002 Editorial,” the debate over what exactly contributes to the DLOM may be largely semantic. Dr. Pratt writes, “The discounts are real, but Dr. Bajaj wants to separate other factors from marketability while we recognize them as factors influencing the discount for lack of marketability.”<sup>11</sup>

In other words, the Bajaj Study regression model includes four independent variables, each of which are hypothesized as influencing the overall price discount realized in private placements of stock. However, the Bajaj Study ultimately concludes that one variable, the registration indicator, is equal to the DLOM, whereas the other three variables (percentage of shares, standard deviation of firm performance, and z-score) are unrelated to marketability.

It may be the case that the registration status of those shares is simply one of many factors that influence the overall DLOM.

As it follows, the Bajaj Study claims that the 7.23 percent coefficient on the registration indicator is equal to the total DLOM. Similarly, analysts who use the Hertz and Smith Study regression model often claim that the 13.5 percent coefficient on the “restricted shares” indicator is equal to the total DLOM.

In reality, the overall average discount for unregistered issues within the Bajaj Study and Hertz and Smith Study of 28 percent and 20 percent, respectively, are the more appropriate conclusions for a DLOM to be taken from these studies. For example, the authors of the Bajaj Study argue that the 7.23 percent registration indicator coefficient is equal to the total DLOM, and other distinct factors are involved, which increased the total discount to 28 percent. However, based on the conclusions provided within the Bajaj Study, it appears to support an overall DLOM of 28 percent. This 28 percent DLOM includes considerations for the registration status of the stock as well as many other DLOM-related factors, including firm performance, block size, financial distress, and others.

## Assessment and Monitoring Costs

As mentioned above, the Bajaj Study authors claim that there are factors unrelated to marketability that increase assessment and monitoring costs for a private placement. The authors claim that there are additional assessment and monitoring costs, distinct from marketability, which must be paid by investors in private placements. The authors argue that these assessment and monitoring costs are what increase the overall discount from 7.23 percent (which they attribute to the DLOM) to an average of 28 percent

(which is the overall average discount realized in the unregistered private placements used in the study).

As described above, there is not sufficient evidence presented in the Bajaj Study to support the idea that the various company and issue-specific factors are distinct from marketability. In addition, there are many questions that can be raised regarding general characteristics of registered private placements that weaken the assessment and monitoring cost theory.

In their article, Mark Mitchell and Mary Norwalk present several questions involving general characteristics of registered private placements.<sup>12</sup> These questions raise a number of issues related to the assessment and monitoring costs theory:

- If the discount is viewed partly as compensation for assessment and monitoring costs, who sets the placement price (given that all investors purchase at the same price)?
- If an investor already owned shares of the issuer, how is that factored into additional assessment costs? Does it depend on whether or not the investor was monitoring or not monitoring?
- Fund managers are already compensated for analysis and monitoring through management fees. Why do issuers of registered private placements need to provide additional compensation?
- How are monitoring costs estimated in negotiating the purchase price? What if some investors want to monitor and others do not?
- Did Barbara Barkley, who invested approximately \$5,000 in Transmedia Network, hire someone to assess it for her or did she undertake the analysis herself?

Despite the rhetorical nature of some of the questions proposed by Mitchell and Norwalk, they raise important points regarding the Bajaj Study assessment and monitoring costs theory. Although the assessment and monitoring costs theory may sound reasonable on paper, in reality there is little evidence to support it. As suggested by Mitchell and Norwalk, simple common sense of the realities of the private placement market debunk the assessment and monitoring costs theory.

There is no evidence to support the idea that all investors in a private placement somehow conspire as to how much they will collectively demand (in the form of a discount) for their assessment and monitoring costs. Also, there is no evidence to assume that fund managers, who are already paid management fees, would require additional payment for assessment and monitoring costs for which they are already compensated. And, it is unlikely that each

firm or investor that participates in a private placement would assess and monitor to the same degree, which is an implicit assumption of the theory.

Furthermore, if the assessment and monitoring cost theory was sound, most private placement offerings would imply monitoring costs of several million dollars for each issue. As stated by Mitchell and Norwalk, “it would take a small army of assessors and monitors to incur costs of several million dollars.” Also, purchasers of private placements typically do not join the board, participate publicly in firm affairs, or criticize management publicly. Both monitoring and assessment would seem to require that at least some of these activities are observable for a large portion of the sample.

Finally, Lance Hall offers further support against the assessment and monitoring costs theory in his February 2004 article titled “The Discount for Lack of Marketability: an Examination of Dr. Bajaj’s Approach.”<sup>13</sup> In the article, Hall writes that “another reason for the observed discount, according to Bajaj, is that an investor will require a return for the management advice he or she gives. . . . What is interesting about this conjecture is that it presupposes that the private placement buyer has influence and control over the management of the company.”

It is generally accepted throughout the valuation profession that investors who buy controlling interests, which have the ability to influence management, pay a control price premium for that investment—not a discounted price. Based on this fact, an extension of the monitoring and assessment cost theory is that there can never be a control price premium, because investors must receive a return for the monitoring and assessment costs they bear while influencing and controlling the management of the company. This idea is demonstrably false.

As described above, the authors of the Bajaj Study hypothesize that assessment and monitoring costs are a large influence in the overall discounts realized in transactions of privately placed stock. There are many limitations to that theory which are seemingly unfounded. The assessment and monitoring costs proposed by the Bajaj Study are not observable in the marketplace, and in reality, those factors that the Bajaj Study authors claim are distinct from marketability are, in fact, directly related to issues of marketability.

## Lack of Flexibility

The conclusion of the Bajaj Study is that the value of the registration indicator coefficient (7.23 percent) is the estimate of the discount that is attributable purely to the lack of marketability. This conclusion seems to imply that the DLOM would be

the same 7.23 percent for all companies, regardless of all other factors. A similar conclusion is implied by analysts who utilize the Hertz and Smith Study regression model when estimating a DLOM. That idea cannot be true and is quickly debunked through simple common sense.

For example, there have been various factors that have been widely accepted in judicial decisions and throughout the valuation profession as affecting the degree of marketability of a subject stock. In *Bernard Mandelbaum, et al. v. Commissioner*,<sup>14</sup> Judge David Laro cited nine specific (but nonexclusive) factors for analysts to consider in developing a DLOM:

1. Financial statement analysis
2. Dividend history and policy
3. Nature of the company, its history, its position in the industry, and its economic outlook
4. The company management
5. The amount of control in the transferred shares
6. The restrictions on transferability
7. The holding period for the stock
8. Subject company's redemption policy
9. Costs associated with a public offering

The conclusions of the Bajaj Study would seem to imply that, despite widespread support in the courts as well as in the valuation profession, none of these factors would directly influence the DLOM. This simply cannot be true. Marketability is most properly viewed as a spectrum, rather than as a binary "all or nothing" position.

The Bajaj Study conclusions would suggest the contrary—that a stock should be classified as marketable or nonmarketable—and the DLOM applicable to a nonmarketable stock is 7.23 percent. The inflexible nature of the conclusions of the DLOM from the Bajaj Study are troubling in that it would suggest the same DLOM for (1) a stock that is somewhat nonmarketable and (2) a stock that is entirely nonmarketable.

For example, let's suppose there are three stocks for three different companies: (1) the stock of a financially healthy, publicly traded company; (2) the stock of a financially healthy, closely held company that pays regular, moderate shareholder distributions and is expected to be liquidated in nine months; and (3) the stock of a financially distressed, closely held company that is expected to never pay shareholder distributions, imposes severe restrictions on share transfers, and is not expected to be liquidated or sold at any time within the next 10 years.

Obviously, the first stock would not be subject to any discounts and is sold at fair market value as

determined by the marketplace. A stock such as this is thought of as being fully marketable. The second and third stocks, however, are clearly not as marketable as the first stock. At the same time, there is a clear and distinct difference in the respective levels of marketability for the second and third stocks. It is irrational to assume that an investor would accept the same level of price discount for an investment in the second stock as he would for an investment in the third stock.

However, the authors of the Bajaj Study seem to suggest that a DLOM of 7.23 percent would be appropriate for both of those stocks, despite the obvious differences in marketability.

## Operating Companies Versus Nonoperating Companies

Another conclusion of the Bajaj Study, listed on the last page of the study, is that there are fundamental differences in the estimation of discounts for privately held operating companies and privately held nonoperating companies. The Bajaj Study authors write:

In our opinion, when valuing an operating company that is privately held . . . the appropriate benchmark for discounts is provided by the total private placement discount or the discount observed in the acquisition approach. This is because, whether it is marketability restriction per se or other factors, the relevant analysis aims to determine the total valuation discount. However, when it is appropriate to only consider the effect of marketability restrictions, as is the case in valuation of noncontrolling interests in a nonoperating partnership which holds assets of known value, the distinction between the total valuation discount and liquidity discount is key. In such cases, the applicable discount is only for the lack of liquidity.<sup>15</sup>

Again, it is worth mentioning the confusion regarding the identified factors as being distinct from marketability, as opposed to contributing to marketability. The authors of the Bajaj Study attempt to separate a "marketability discount" from a "total private placement discount," while, as described above, these two ideas are directly related.

Furthermore, this conclusion of the Bajaj Study seems to suggest that nonmarketable interests in nonoperating companies will have a DLOM of approximately 7.23 percent (i.e., the coefficient of the registration indicator) and similar interests in operating companies will have a "total valuation discount" of 28 percent. The lack of flexibility that this

conclusion suggests is unsupported. It is unreasonable to suggest that analysts should apply discounts of over three times the size solely based on whether the company is an operating company or a nonoperating company.

## Some Additional Issues to Consider

Aside from the principal issues listed above, there are several other criticisms primarily related to the Bajaj Study:

- The Bajaj Study uses data from transactions in privately placed stock that occurred from 1990 to 1995. During this time, SEC regulations only required a one-year holding period for unregistered stock. Noncontrolling interests in privately held companies are likely to have a holding period of much longer than one year. As such, all conclusions for a DLOM from the Bajaj Study are likely understated.
- The model used in the Bajaj Study suffers from omitted variable bias. As described by Rob Oliver in an April 27, 2004, Business Valuation Resources teleconference titled “DLOM: A Critique of the Bajaj Approach,” in any academic regression study, the researcher must first show all the independent variables considered, and then describe the process of how he got down to the few that were included as being statistically significant in the regression model. In the Bajaj Study, there is no evidence of this process. As Oliver writes, “[the Bajaj Study authors] didn’t show us how they got from what would have been a large number of observations or data, down to those [four] that comprised his regression study.”

## SUMMARY AND CONCLUSION

There are several issues related to the proposed usage of the Private Placement Studies’ regression models in estimating a DLOM. First, there are several hurdles that any multivariable regression model should pass in order to be considered accurate. Second, there are many issues related to various claims and ideas theorized within the Bajaj Study and, to a lesser extent, the Hertz and Smith Study, which further questions the validity of the regression models in their capacity to estimate a DLOM.

This is not to claim that the Private Placement Studies as a whole are entirely flawed. On the contrary, it is merely the conclusions related to the regression analyses used within the studies that are highly controversial.

However, although some of the above criticisms still apply, it is generally more accurate to use the overall private placement discounts concluded by the two studies. The overall discounts concluded by the Private Placement Studies provide a better starting place when estimating a DLOM, rather than the conclusions reached by regression analyses that are based on incorrect assumptions and theories.

### Notes:

1. Mukesh Bajaj, David J. Denis, Stephen P. Ferris and Atulya Sarin, “Firm Value and Marketability Discounts,” *The Journal of Corporate Law* (Fall 2001).
2. Michael Hertz and Richard L. Smith, “Market Discounts and Shareholder Gains for Placing Equity Privately,” *The Journal of Finance* (June 1993).
3. Stanley Jay Feldman, “A Note on Using Regression Models to Predict the Marketability Discount,” *Business Valuation Review* (September 2002).
4. *Ibid.*: 147.
5. *Ibid.*: 148.
6. Ashok Abbot, “Restricted Stock Studies: Estimating Discount for Lack of Marketability” (whitepaper, 2012, documents.jdsupra.com/817ee1d3-ee4f-4c5a-8537-254c3b4940e8.pdf)
7. Bajaj, Denis, Ferris, and Sarin “Firm Value and Marketability Discounts”: 107.
8. FMV Opinions, Inc., “Determining Discounts for Lack of Marketability: A Companion Guide to the FMV Restricted Stock Study,” 2013, www.bvmarketdata.com.
9. Mark Mitchell and Mary Norwalk, “Assessing and Monitoring Bajaj: Debunking the Reliability of Marketability Discount Studies and the 7.23% Solution,” *Business Valuation Review* (Spring 2008).
10. Bajaj, Denis, Ferris, and Sarin “Firm Value and Marketability Discounts”: 108.
11. Mukesh Bajaj and Shannon Pratt, “Dr. Bajaj Responds to Dr. Pratt’s February 2002 Editorial,” *Business Valuation Update* (March 2002).
12. Mitchell and Norwalk, “Assessing and Monitoring Bajaj: Debunking the Reliability of Marketability Discount Studies and the 7.23% Solution”: 9.
13. Lance Hall, “The Discount for Lack of Marketability: An Examination of Dr. Bajaj’s Approach,” *Business Valuation Update* (February 2004).
14. Mandelbaum, et al. v. Commissioner, T.C. Memo 1995-255.
15. Bajaj, Denis, Ferris, and Sarin “Firm Value and Marketability Discounts”: 114.

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