

Empirical Method for Determining DLOM

The vast majority of business appraisers still rely on the restricted stock studies to determine a discount for lack of marketability (DLOM) in their standard practice of valuing a closely held, noncontrolling interest. These studies, shown in Exhibit 1, were published between 1969-1998.

According to *BVWire's* recent survey, 80% of responding appraisers checked off the restricted stock approach, with an additional 18% indicating they use a "restricted stock study equivalent analysis." Notably, what many consider the next most common approaches garnered roughly the same percentage of use among survey respondents:

- Forty-six percent rely on pre-IPO studies;
- Forty-five percent rely on FMV Opinions Restricted Stock Studies; and
- Forty-five percent use the empirical method (also referred to as the Partnership Profiles [Partnership Spectrum] method).

Basics or blasphemy? "I think [restricted stock] studies have a lot of merit," says Bruce A. Johnson, ASA (Munroe Park & Johnson), who recently presented a webinar in BVR's advanced series on DLOM. "They show that in third-party transactions, discounts for lack of marketability issues do occur," with a reported average of 20% to 35%.

However—as many appraisers acknowledge—simply applying the averages from the studies may no longer pass muster under IRS or court examination. (As one survey respondent said: "Quit using the averages." Another elaborated, "Relying on studies without quantifying the

discount is not the correct way of going about this.") Johnson noted the studies' averages do not establish a bell curve; rather, the distribution of data is flat. The underlying companies are also not truly comparable to business appraisers' most common subject companies. Appraisers who continue to rely on restricted stock studies (RSS)—as well as the pre-IPO placement studies—should be sure to read and understand the underlying data, Johnson advises.

After reading and studying the data back in the 1990s, Johnson decided to conduct his own study. He started with over 300 restricted stock transactions (from 1991 to 1995), deleted those with warrants, options, or other elements affecting value, and eventually settled on 72 transactions. The average discount equaled 20%—substantially lower than that of the prior RSS. The observed decrease from the prior average discounts in the studies was due to two changes in the regulation of these restricted stock securities. Prior to 1990, the stock of small companies could be sold by a public company

Exhibit 1. Restricted Stock Studies

Years Studied	Name of Study	Average Discount	Number of Transactions
1966-1969	SEC Institutional Investor	25.8%	398
1968-1970	Milton Gelman	33.0%	89
1969-1972	Robert E. Moroney	35.6%	146
1969-1973	J. Michael Maher	35.4%	na
1968-1972	Robert Trout	33.5%	60
1978-1982	Standard Research Consultants	45.0% *	28
1981-1984	Willamette Management Associates	31.2% *	33
1981-1988	William L. Silber	33.8%	69
1979-1992	FMV Opinions, Inc.	23.0%	100
1980-1995	Management Planning	27.7%	49
1991-1995	Bruce A. Johnson	20.0%	72
1996-1997	Columbia Financial Advisors	21.0%	23
1997-1998	Columbia Financial Advisors	13.0%	15

* denotes median

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without making a public offering. Securities sold in this type of transaction were subject to certain restrictions which stated that the stock could not be resold without being registered with the SEC or qualifying for a Rule 144 exemption. Originally, Rule 144 allowed the limited resale of unregistered securities after a holding period of two years.

In 1990, the SEC implemented new regulations that allowed qualified institutional investors to trade restricted stock among themselves without filing registration documents. This new rule (Rule 144A), effectively created a limited market for the purchase and sale of these restricted stocks. The increased liquidity for restricted stocks after 1990 is reflected by the decline in the average discounts reported by the restricted stock studies. In 1997, the SEC reduced the Rule 144 holding period from two years to one year, further increasing the liquidity of restricted stocks.

By reviewing the 10K reports for each of the companies, Johnson examined a number of factors that influenced the discount. For example, he observed that positive net income for a company that sold restricted stock generally indicated a lower discount. Similarly, higher net sales and higher transaction amounts led to lower discounts. (See Exhibit 2.)

“This told me that the discount for lack of marketability was related to the factors that are affected by the risk of the investment,” Johnson says. “As the risk of the investment increases, the discount for lack of marketability also increases.” (For more on his studies, see, “Restricted Stock

Exhibit 2. Johnson Restricted Stock Study

	Average	Std Dev
Sorted by Current Year Net Income		
Positive net income	16%	12%
Negative net income	23%	17%
Sorted by Previous Year Net Income		
Positive net income	16%	13%
Negative net income	23%	17%
Sorted by Sales Current Year		
Greater than \$12.7M	18%	14%
Less than \$12.7M	22%	17%
Sorted by Transaction Value		
Greater than \$8.3M	16%	14%
Less than \$8.3M	25%	16%

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Discounts, 1991-95”, in the March 1999 *BVU*, and “Quantitative Support for Discounts for Lack of Marketability,” *Business Valuation Review*, December 1999.)

Thus, when valuing a closely held interest, an appraiser needs to identify the risk of holding a security for an indefinite period of time, Johnson believes, and then determine the DLOM in relation to the return on investment. “In other words, the discount for lack of marketability should raise the return on an investment to a level that is sufficient to compensate an investor for buying a nonmarketable interest.”

That may strike some business appraisers as basic financial theory. “To others, it sounds of blasphemy” compared to using RSS averages for so many years, Johnson says. Ultimately, he believes the approach derived from his study of the public data, which he calls the empirical method, will lead to a more supportable approach to deriving the DLOM for noncontrolling interests in operating as well as LLC- and LP-holding companies, particularly when the Tax Court is “hungry” for a more objective approach—and, judging from the latest *BVWire* survey, BV appraisers are, too.

Using public company data in some aspect of private company valuation is not new. “When we use the income approach, we use rates of return from publicly held investments. When we use the market approach, we use pricing multiples for non-controlling publicly held investment,” Johnson explains. Appraisers typically end up with a noncontrolling, marketable value, in which the discount for lack of control is already embedded by the application of either method.

The next step is to adjust for the lack of marketability, and any discount (as Johnson views it) should be justified by how much it increases an investor’s effective rate of return. As a fairly straightforward example, if you have a noncontrolling, nonmarketable share worth \$100 that produces \$12 of income per year, that’s a 12% return. If you apply a 20% marketability discount, as shown in Exhibit 3, the share value drops to \$80, or a 15% return.

The key question: “How much greater a return is required on the nonmarketable interest for it to be as desirable to an investor as a *marketable* interest yielding a 12% return?” Of course, investors will want to know more specifics about the company and its performance and debt, but the question is essentially the same that appraisers face when valuing a private company, Johnson says. “We have to decide how much more of a return we want for investing in a privately held interest than if it was publicly traded or readily marketable.”

After completing his study, he and his partner (James Park) reexamined the data to look for new data to support the increase in the rate of return. They published three studies to help appraisers determine how much the rate of return should increase for lack of marketability in Partnership Profiles’ *Comprehensive Guide for the Valuation of Family Limited Partnerships* in 2006 and then again in 2011, which is why some appraisers refer to the empirical method for determining DLOM (or the Johnson/Park approach) as the “Partnership Profiles” method. It is worth pointing out that in its *DLOM Job Aid*, the IRS discusses the “Partnership Profiles/Partnership Spectrum” method in the context of determining DLOM for real estate holding companies and similar non-income-producing entities. To resolve any confusion, Johnson and Park prefer to call their approach the empirical method, which they apply to both operating and nonoperating companies, such as FLPs, as further explained below.

The inability to readily sell an interest in a privately held entity increases the owner’s exposure to changing market conditions and increases their risk of ownership. Because of the lack of marketability and the resulting increased risk associated with ownership of a privately held

Exhibit 3. Marketability Discount

	Price	Income	Return
Noncontrolling, Marketable Value	\$100	\$12	12.0%
DLOM	20.0%		
Noncontrolling, Nonmarketable Value	\$80	\$12	15.0%

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interest, an investor typically demands a higher return in comparison to a similar but publicly traded interest. Consequently, the privately held interest trades at a discount or a value less than it would if it were publicly traded. The application of a DLOM increases the effective return on investment to compensate the owner of the interest for the risks associated with the ownership of a nonmarketable interest.

A discussion of the three studies that measure the increase in the rate of return required to compensate investors for lack of marketability follows.

Study # 1—Private Equity Versus Public Equity Returns

The first study examined the increase in return required by investors in private equities versus public equities. To measure the difference, the historical 25-year arithmetic returns between private equity investments and publicly traded equity investments were analyzed.

For the publicly traded equity investments, the historical returns were measured using information from Morningstar's Ibbotson SBBI 2011 Classic Yearbook. For privately held equity investments, the historical returns were measured using the Cambridge Associates, U.S. Venture Capital Index, the official performance benchmark of the National Venture Capital Association.

The long-term return for private equity interests was 18.7% versus 12.9% for publicly traded small stocks. Comparing the returns resulted in an increase in yield of 5.8%, which equates to a 45.2% increase in return as shown in Exhibit 4.¹

This incremental increase in rate of return indicates the extent to which investors in illiquid securities require or expect to realize higher returns relative to investors owning liquid securities.

¹ Spencer Jefferies, et al., *Comprehensive Guide for the Valuation of Family Limited Partnerships*, 4th ed., (Dallas, Partnership Profiles Inc., 2011), 125-132.

Exhibit 4. Historical Return Requirement

	25 Years
LT Return - Privately Held Companies	18.7%
LT Return - Publicly Traded Small Stocks	<u>12.9%</u>
Difference	5.8%
Incremental Return as a Percent	45.2%

Study #2—Restricted Stock Returns

This study compares the increase in return demanded by investors of restricted stocks to the same shares of stock traded on an active exchange. Restricted stock of a public company is identical to its counterpart traded on a major exchange except that restricted stock cannot be openly traded for a designated period of time. Restricted stock is usually issued by a company to raise capital while avoiding the costs of registering with the Securities and Exchange Commission.

To measure the increase in return that investors required between publicly traded shares of stock and restricted shares of stock in the same company, the return for the restricted stock and publicly traded stock were measured by earnings per share as a percent of the market price. Based on 25 transactions using the underlying data from the Johnson Restricted Stock Study (published in the March 1999 *BVU*), the average increase between the return using the restricted stock price and the return using the publicly traded price was 29.5%.²

Study #3—Long-Term Versus Short-Term Bond Horizons

This study examined horizon risk between short-term and long-term government bonds. Horizon risk was used as a proxy to measure the increased return that investors demand to compensate for the increased risk during the holding period of long-term bonds as compared to short-term bonds. For example, while long-term bonds can be sold quickly, an investor must hold the bond to maturity to be guaranteed the return of

² Ibid.

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the original investment in the event interest rates rise. Therefore, investors require a higher rate of return to compensate for the uncertainty of the longer holding period.³

The average variance in yield between short-term Treasury bills and long-term Treasury bonds over 30, 35, and 40 years is shown in Exhibit 5.

This differential represents an incremental increase in yield between short- and long-term investments in risk-free securities. In other words, investors have demanded a higher rate of return (in this case, an average of 34.3% higher return) for the additional risk of the extended holding period. (See Exhibit 6.)

Comparatively, an interest in a privately held security that cannot be sold in a secondary market is a riskier investment that may also need to be held for an extended period of time due to the lack of a ready market.

Summary

Based on these three studies, it is apparent that investors demanded a 30% to 45% (approximately) higher rate of return for the additional risk of holding an illiquid investment for a longer period of time. (See Exhibit 7.)

Due to the risk associated with an interest in a privately held entity resulting from the lack of marketability, an increase in the rate of return of 30% to 45% is reasonable based on the above studies.

The empirical method has been used by appraisers for several years and moves us a lot closer to an ability to quantify the discount for lack of marketability with an objective method, Johnson observes. Several appraisers who provided feedback in response to *BVWire's* survey and Johnson's BVR webinar presentation on DLOM state that they have successfully used the empirical method to determine DLOM with the IRS. Johnson used this method in both the *Estate of Elsie Church* and the *Estate of Emily Klauss*.

³ Ibid.

It's hard to argue the application of average discounts from historical RSS due to the age of the studies and the lack of comparability of the underlying companies when determining a specific DLOM in a privately held interest. In contrast, it is much easier to argue what is a reasonable rate of return for a privately held interest. (See Exhibit 8.)

The purpose of a DLOM, Johnson concludes, is to recognize and quantify the effect on value attributable to the inability to convert a privately held interest into liquid funds as quickly as a

Exhibit 5. Average Variance in Yield Between Short Term Treasury Bills and Long-Term Bonds

	<u>30 Year Average</u>	<u>35 Year Average</u>	<u>40 Year Average</u>
20 Year Treasury Bond	7.2%	7.4%	7.3%
3 Month Treasury Bill	<u>5.2%</u>	<u>5.5%</u>	<u>5.6%</u>
	2.0%	1.8%	1.7%
Incremental Increase	39.3%	32.9%	30.8%

Exhibit 6. Differential

	<u>30 Year Average</u>	<u>35 Year Average</u>	<u>40 Year Average</u>
Incremental Increase	39.3%	32.9%	30.8%
Average	34.3%		

Exhibit 7. Summary of Three Studies

<u>Studies</u>	<u>Average Incr Return</u>
Private Equity vs. Public Equity Returns	45.2%
Restricted Stock Transactions	29.5%
LT vs. ST Bond Horizon Risk	34.3%

Exhibit 8. Rates of Return

Small Company Stocks	16.5%	R e t u r n ↑
Real Estate Investment Trust	13.6%	
Large Company Stocks	11.8%	
Long-Term Corporate Bonds	6.4%	
Long-Term Government Bonds	6.1%	
U.S. Treasury Bills	3.6%	

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publicly traded security. Discounting a noncontrolling, marketable value effectively increases an interest's rate of return to a level that is reasonable to compensate the investor for the lack of marketability and the additional risks associated

with the ownership of the privately held interest. Using the empirical method, which relies on rates of return to accomplish and support the increase, seems to be the best method of determining a DLOM.