



Lack of Marketability

As the Scrutiny of Valuation Reports Increases, Discounts Must be Better Supported with New and Improved Methods

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Introduction

There is no doubt that one of the most difficult areas of valuation is quantifying and justifying a lack of marketability adjustment. While it is undisputable that some downward adjustment is justified to account for a lack of ability to convert an investment into cash, the magnitude of that adjustment is often a contentious subject. Valuation professionals are being challenged to refine their conclusions. Practitioners and users of valuation reports should be familiar with the latest thinking on marketability and illiquidity. This overview of the available methodology and current theory is a good start.

To know where we are now, we need to know from whence we have come. Z. Christopher Mercer and Travis W. Harms offer an excellent historical analysis. In their December 2001 article in *Business Valuation Review*, Mercer and Harms noted that “everyone is finally agreeing that the average of a restricted stock study tells us little about the appropriate marketability discounts for the varying fact patterns presented by minority interests in private companies.”ⁱ They provide this view of the evolution of the appraisal profession’s use of restricted stock study data. There have been, they say, four stages:

- (1) **The “35 percent” stage**—In the 1970s and 1980s, many believed that the marketability discount should be 35 percent, irrespective of a specific situation’s facts.
- (2) **The “35 percent to 45 percent, plus or minus” stage**—In the late 1980s, appraisers begin to benchmark against studies using certain factors believed to influence a discount’s magnitude.
- (3) **The “Mandelbaum Benchmark” stage**—After U.S. Tax Court Judge David Laro’s 1995 decision in *Mandelbaum*,ⁱⁱ his nine specific factors became prevalent when benchmarking discounts.

(4) **The “more data” stage**—In the early 1990s, it was generally acknowledged that benchmarking was insufficient; a more quantitative analysis was necessary.

Clearly, we are now in the “more data” era. Indeed, one could even go so far as to claim that we have moved into a new, “quantify and justify” Stage. As the tax court and outside party reviewers scrutinize the profession and its professionals ever more carefully, it is incumbent upon us to improve our practices related to the marketability adjustment. Let’s face it, in most cases, a great deal of time and analysis is devoted to the valuation analysis and the determination of the control adjustment. Once appraisers have concluded a marketable, minority value, it is easy to slap a marketability adjustment on top, often with insufficient thought or analysis.

Now there’s a movement to refine our definitions, toward distinguishing between the lack of marketability (LOM) and the lack of liquidity (LOL) of an interest. Marketability is the capability and ease of transfer or salability of an asset. The marketability can be restricted by agreements and regulation. Liquidity is the ability to readily convert the asset into cash without significant loss of principal. Liquidity centers on the ability to find a buyer.

So let us look at theories of marketability and liquidity—including some traditional as well as some more recently proposed approaches.

Restricted Stock Studies

No article about marketability is complete without acknowledging that various studies related to restricted stock comprised the go-to approach for discounting during last 30 years. Overall, these studies indicate adjustments ranging from nil to 90 percent, with central tendencies, clustering near 35 percent.

Several studies noted factors that influence the size of the adjustment. The primary factors cited indicate that adjustments generally are higher:

- the smaller the revenue size;
- the lower the earnings;
- the higher the earnings volatility;
- the lower the dividend yield;
- the larger the size of the block;
- the weaker the prospects for the entity or the industry; and
- the lower the stock’s quality and grade.

The Go To Approach

For the past 30 years, restricted stock studies have dominated most appraisers’ approaches to discounting
The most well-known studies find that discounts cluster around 35 percent. Here they are:

- Securities and Exchange Commission (SEC) Study Overall, median and average of 26 percent;
- SEC Study Non-reporting OTC (Over The Counter) median and average of 33 percent;
- Gelman Study has an average of 33 percent;
- Maher Study has an average of 35 percent;
- Management Planning Study has a median of 25 percent.
- Moroney Study has an average of 36 percent and a median of 33 percent;
- Standard Research Study has a median of 45 percent;

- Trout Study has an average of 33 percent; and
- Willamette Study has a median of 31 percent.

In addition to the older studies, in 2001, FMV Opinions, based in Los Angeles, California, first published the FMV Study with a data set from 1980 to 2000 that allows professionals to target a search, tailoring a sample to fit the valuation subject.

Trading in Restricted Stock

Although the restricted stock studies remain a cornerstone in determining LOM, these studies are often criticized for being outdated and lacking texture. As an alternative to the outdated studies, more recent restricted stock data can be used. In the past year, a small private exchange for trading restricted stock called, Restricted Securities Trading Network (RSTN) has been established. RSTN provides liquidity and trading solutions to holders of restricted securities. For owners of restricted stocks to sell their securities, certain conditions must be met, such as those stated in Rule 144, requiring adequate public information, a 12-month holding period, restrictions on volume, and public disclosure. A private sale is permissible if the Section 4(1-1/2) exemption is utilized.

Espen Roback, president of Pluris Valuation Advisors, LLC, in New York, has compiled trading data from RSTN (he is affiliated with RSTN)ⁱⁱⁱ. Roback's study data demonstrated that illiquidity discounts are a function of risk and the illiquidity period, with key factors including the volatility, size and trading market characteristics of the security. Results from the study of 90 private sales of restricted stock showed that higher discounts occurred for stocks with large block sizes relative to volume and high volatility stocks, while lower discounts occurred when the issuers had significant revenues. The average discount for private sales of restricted stock was 31.2 percent while the median was 33.4 percent. One of the study's conclusions noted that longer holding periods resulted in higher discounts—the relationship being a quadratic one.

Pre-IPO Studies

Other studies are based on the analysis of adjustments for LOM on sales of closely held shares compared to prices of subsequent initial public offerings (IPOs) of the same companies' shares. These measured marketability adjustments over an extended time period and their results can be studied to analyze changes in discounts over time. In 1981, John D. Emory, founder of Emory & Co. in Milwaukee, WI^{iv} began a series of studies analyzing the price relationship between private arms-length stock transactions occurring within five months of a company going public and the subsequent IPO price. The study has been updated eight times since the initial analysis in 1981, the last drawing upon data from May of 1997 through March of 2000. During an 18-month period, for each study, Emory analyzed all the IPOs of common stock in which Robert W. Baird, a large regional investment banking firm based in Milwaukee, had participated or had obtained offering prospectuses.

Willamette Management Associates conducted a similar series of twelve studies on the price of private stock transactions relative to those of subsequent public offerings of stock of the same companies.

Protective Put Options

In a protective put calculation, the cost of purchasing a put option to protect against downward price changes is used as a proxy for the cost of marketability. When the cost of the put option is divided by the asset price, we have

an expression of the adjustment for illiquidity. The magnitude of this illiquidity cost can be compared to other indications of marketability adjustments from other sources.

An indication of a minority interest's LOM can be estimated by calculating the price of a European put option on the subject interest. The price of the put is essentially the insurance a willing buyer would pay to guarantee the liquidity and the price of the asset at some point in the future. This put price is calculated with a Black-Scholes Model containing five inputs: (1) asset price, (2) strike price, (3) volatility, (4) term, and (5) risk-free rate.

The asset and strike price are set equal to each other, because this is the value the investor desires to protect. Setting the asset price and stock price in this manner gives the investor the right, at the maturity of the put option, to sell the asset at the price determined at the applicable valuation date. The volatility of the asset can be measured by observing the volatility of assets or comparable publicly traded companies in the same industry. The term of the put-option is the estimated time to liquidity for the interest. Lastly, the risk-free rate should correspond with the term of the put option.

In the context of private equity valuation, the derived value of the put option is interpreted as the price an investor would pay, on the applicable valuation date, for the right to sell the asset at a guaranteed price at the maturity of the option. The investor's net position, as of the valuation date, is the value of the stock minus the price of the put option purchased to insure liquidity. From this calculation the LOM discount can be observed as the price of a put option divided by asset value prior to the marketability adjustment.

LEAPs

Long-term equity anticipation securities (LEAPs) are exchange-listed options that give holders the right, but not the obligation to buy (in the case of a call) or to sell (in the case of a put) a specified amount of the underlying asset at a predetermined price on or before a given date. A study by appraiser Ronald M. Seaman, president of Southland Business Group, Inc., in Tampa, Fla.^v focused on the costs of LEAPs put options in July and August of 2006 that had expiration dates in January of 2008 (18 months into the future) or in January 2009 (30 months into the future.) Using the price of LEAPs put options relative to the price of the underlying asset, the study determined the price an investor was willing to pay to eliminate the risk of loss in value, which is a significant portion of the discount for lack of LOM.

Seaman's study spanned the total universe of LEAPs put options in July and August of 2006, including 920 LEAP issues. It also depicted the variability in liquidity discounts by the size of company, volatility or risk of the company, profitability, growth rates and current rates of return of investors. The study results of the study make clear that company size and company risk had a major effect on discounts, while the latest year profit margin, five-year growth rates and dividend yields had minor effects.

According to the data, the average cost of price protection for all LEAPs, calculated by dividing LEAPs put prices by the value of the underlying asset, was 16.3 percent for 2008 LEAPs and 20.5 percent for 2009 LEAPs, with medians of 13.9 percent and 17.4 percent respectively. This discount increased significantly as the companies' revenues decreased and as the expiration dates of the LEAPs increased.

Seaman's study also showed that discounts increased significantly as book values of companies decreased, with a 14.6 percent average discount for 2009 LEAPs of companies with book values greater than \$10 billion and a 31.2 percent average discount for 2009 LEAPs of companies with book values of less than \$500 million.

Informed Customers

Clearly, methods of quantifying the marketability adjustment are evolving. There are other methods available, some that are more quantitative and some that are complete valuation approaches incorporating more than just marketability determination. But, most importantly, consumers of valuation services—armed with an awareness that today there are alternatives to the traditional restricted stock studies—should be able to demand a improved product from their service providers.

Endnotes

ⁱ Z. Christopher Mercer and Travis W. Harms, “Marketability Discount Analysis at a Fork in the Road,” *Business Valuation Review*, December 2001, p 24.

ⁱⁱ *Mandelbaum v. Commissioner*, T.C. Memo 1995-2

ⁱⁱⁱ Presented by Espen Roback at the American Society of Appraisers Advanced Business Conference in San Diego, Nov. 30, 2007

^{iv} Discounts for Lack of Marketability, Emory Pre-IPO Discount Studies 1980-2000, as Adjusted October 10, 2002, *Business Valuation Review*, December 2002 - John D. Emory Sr., F.R. Dengel III, John D. Emory Jr.

^v Ronald M. Seaman, “Minimum Marketability Discounts—3rd Edition,” presented at the ASA Advanced Business Valuation conference in San Diego, Nov. 30, 2008