Vol. 3 No. 6 November 1999

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Marmer Penner Newsletter

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Valuing Restricted Stock

Introduction

Executives of companies who hold restricted shares are faced with difficult valuation problems if and when it becomes necessary to value those shares. This has become a reality for many executives in recent years as a result of the popularity of stock and option awards in executive remuneration packages.

In the 1970s, a typical executive received a simple base salary. In the last twenty years, annual stock and option awards as components of executive remuneration became trendy. This trend continues today. Typically, the stock and option awards of key employees within an organization vest over a long period of time in order to foster long-term loyalty to the organization. Before vesting, holders of these stock and option awards are restricted from selling or exercising them. Occasionally, these employees are faced with circumstances where it becomes necessary to value restricted stock awards prior to them having vested, for example, on the occasion of a marital breakdown or for purposes of a wrongful dismissal claim against a former employer.

In addition, merger and acquisition transactions between two companies often involve the issuance of restricted stock, typically by the acquiring company, in exchange for the stock of the company being acquired. It becomes very important for business valuators and other advisors involved in corporate finance activities to recognize occasions where restricted stock is a significant component of a merger and acquisition transaction. Faulty valuation conclusions will result if proper consideration is not given to the risks

associated with holding restricted securities.

Empirical Evidence from the Public Markets of Restricted Stock Discounts

Much research has been done to support the existence and magnitude of restricted stock discounts. Valuators typically cite the research from restricted stock studies and pre-IPO studies (which are described below) to support these discounts. Overall, these studies suggest an average restricted stock discount somewhere between 25% and 40% of the gross value. As a result, valuators often quote this range as a rule of thumb in practice. However, the thoughtless application of this rule of thumb can lead to inappropriate conclusions. Although the *average* result of most of these historical restricted stock and pre-IPO studies indicate a discount in the range of 25% to 40%, wide variances in all of the studies were observed.

While the restricted stock and pre-IPO studies are useful for making general conclusions about restricted stock discounts, they fall short in their ability to pinpoint a narrower range for the discount in a particular transaction or notional situation. Because the 25% to 40% rule of thumb for these transactions represents only the average of those restricted stock discounts encountered in the studies, wide ranges in the studies were experienced. In the summary of restricted stock studies shown in Figure 1, the discounts were *as high as 91% and as low as –30%* (i.e. a *premium* was actually paid to acquire a block of restricted stock). Similarly, wide fluctuations are seen in the summary of pre-IPO studies as shown in Figure 2.

Restricted Stock Studies

The first restricted stock studies were completed in the United States during the 1960s and 1970s. These studies were based on the acquisitions of large blocks of actively traded securities by mutual funds and other institutional investors. Under Rule 144 of the *Securities and Exchange Act of 1934* (“Rule 144”), the investors in these large blocks of stock were faced with a minimum two-year holding period in order to protect the interest of average investors. Following the expiry of the two-year period, Rule 144 allowed for the gradual liquidation of the block of stock on the public market. Typically, the total restriction was for a period of two to three years following the acquisition of the

block. These investors were required to disclose the discounted prices they paid for large blocks of stock that were subject to the Rule 144 restriction and the quoted market price on the date of acquisition. Accordingly, implied restricted stock discounts were reported over several years and a reasonably good population of data was available to analyze until the mid 1970s. Although some studies were completed as late as 1992, the studies completed after the mid 1970s were based on much smaller populations. As shown in Figure 1 below, the studies suggest an *average* restricted stock discount in the range of 23% to 45%.

The largest restricted stock study of its kind was performed by the Security Exchange Commission in the United States and was completed in 1969. The SEC Institutional Investor Study ("SEC study") analyzed a total of 398 transactions. In addition to simply reporting the results of the study, the SEC took its analysis one step further and made several general conclusions about the size of the restricted stock discounts it encountered in the population based on several common factors among the transactions in the population. The SEC study noted that the size of the restricted stock discount for a particular transaction was dependant on several factors. Subsequent studies, including the Silber study and the Hall/Polacek study supported the general conclusions of the SEC study.

Some of the more important factors highlighted by the SEC study were:

(a) *The size of the transaction*. The larger the dollar value of the transaction, the smaller the restricted stock discount encountered.

(b) *The revenues of the company*. The larger the revenues of company, the smaller the restricted stock discount encountered.

(c) *The earnings of the company*. Companies with higher levels of earnings tended to have smaller discounts associated with them.

(d) *The exchange that the company traded on*. Companies that traded on the New York Stock Exchange and American Stock Exchange tended to have smaller

discounts associated with them while companies whose shares traded on over-the-counter exchanges had larger discounts associated with them.

Although the general conclusions reached in the SEC study and others are useful, a more rigorous approach to the quantification of restricted stock discounts is needed. Although the restricted stock studies identified several factors that were common with larger discounts, these studies failed to identify the one variable that was the driver for the magnitude of the restricted stock discount. Once the main driver is identified, an approach to the quantification of restricted stock discounts can be more easily understood.

Figure 1

Author of Study	Year(s) Completed	Median	Mean	Discount Low	Range High
SEC Institutional Investor Study	1969	24%	26%	(15%)	80%
Gelman Study	1968-1970	33%	33%	<15%	>40%
Moroney Study	1968-1972	34%	35%	(30%)	90%
Maher Study	c.1968-1972	33%	35%	3%	76%
Trout Study	1969-1973	na	34%	na	na
Stryker/Pittock Study	1978-1982	45%	na	7%	91%
Williamette Management Assoc.	1981-1984	31%	na	na	na
Silber Study	1981-1988	na	34%	(13%)	84%
Hall/Polacek Study	1969-1992	na	23%	na	na

Pre-IPO studies

The types of transactions on which the restricted stock studies were based in the 1960s and 1970s decreased significantly by the mid 1970s. Accordingly, few transactions are available after this time on which more current restricted stock studies can be based. An additional disadvantage therefore of relying on the restricted stock studies for supporting restricted stock discounts is that these studies are now almost thirty years old.

An additional public market phenomenon became more prevalent in the mid 1970s that provided further evidence for restricted stock discounts. Studies based on this phenomenon are known as the pre-IPO studies. The pre-IPO studies were based on transactions that took place prior to the initial public offering of a stock on a public exchange. Typically, these transactions were private placements between large investors and insiders. These investors were restricted from selling their shares, not only until the company went public, but also for the two to three year period pursuant to Rule 144 after the initial public offering. These studies analyzed the price difference between blocks of shares acquired as private placements by investors before the initial public offering of those shares vis-à-vis the initial public offering price once the shares first came onto the market. This difference is known as the pre-IPO discount and has been used to support the existence of restricted stock discounts. The most comprehensive studies on pre-IPO transactions were performed by Emory in the United States. Emory worked for the large investment bank Robert W. Baird & Company, and as such, was privy to many pre-IPO transactions in the course of his employment. Emory's first study was completed in 1985 and included thirteen transactions. Since that time, Emory has published six updates of his original study. For each of the updates, Emory took the price at which the pre-IPO transaction took place and compared it to the price on the public market immediately after the initial public offering. A summary of the results of Emory's studies are shown in Figure 2.

Figure 2

Years Completed	Number of IPOs	Median	Mean	Discount Low	Range High
1985-1986	21	43%	43%	3%	83%
1987-1989	27	45%	45%	4%	82%
1989-1990	23	40%	45%	6%	94%
1990-1992	35	40%	42%	-6%	94%
1992-1993	54	44%	45%	-4%	90%
1994-1995	46	45%	45%	6%	76%

These results suggest an average discount in the range of 40% to 45%. However, like the restricted stock studies, wide ranges of observations were noted.

An additional criticism of the pre-IPO studies is that the discount encountered in these transactions is dependant on other factors other than the restriction on the stock and it is difficult, if not impossible, to separate out the components of the discount in order to derive the "pure" restricted stock discount. Discussion of the other factors that impact the pre-IPO discount is beyond the scope of this article, however other authors including Mercer discuss how the pre-IPO discount is affected by factors other than the restrictive nature of the block of stock.

Many transactions were reviewed by Emory in his studies, all of which support the existence of a restricted stock discount. However, the wide dispersion of discounts and the difficulties with being able to separate out the impact resulting from restrictions as opposed to the impact of other factors make it difficult to use the pre-IPO studies to determine restricted stock discounts in actual transactions or notional situations.

In our next newsletter, we will discuss an approach which can assist the valuator in quantifying a discount for a particular restricted stock holding.

This newsletter is intended to highlight areas where professional assistance may be required. It is not intended to substitute for proper professional planning. The professionals at Marmer Penner will be pleased to assist you with any matters that arise.