Gift and Estate Tax Valuation Insights

Update on the Willamette Management Associates Pre-IPO Discount for Lack of Marketability Study

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Introduction

The concept of marketability deals with the liquidity of an asset—that is, how quickly and certainly the asset can be converted into cash at the owner's discretion. The markets for most assets value liquidity. Accordingly, market participants will extract a price premium for liquidity or, conversely, demand a price discount for the lack of liquidity.

The common stock of a closely held company is not as liquid as the comparative common stock of a publicly traded company. This is because the closely held stock does not have the same degree of marketability as the comparative publicly traded stock. All other factors being equal, the closely held stock is less valuable than the equivalent publicly traded stock, its value reflecting a discount for lack of marketability.

Empirical research attempting to quantify this valuation discount for lack of marketability generally falls into two fields of analysis:

1. studies of private transactions in the restricted stock of publicly traded companies (restricted stock studies) and
2. studies of private transactions in the stock of companies that have implemented initial public offerings (pre-IPO studies).

Willamette Management Associates has previously published the results of empirical research studies concerning the discount for lack of marketability covering the years 1975-1997. Recently, Willamette Management Associates has completed three additional pre–initial public offering (pre-IPO) studies covering the years 1998-2000.

The results of these pre-IPO discount for lack of marketability studies are presented in this article.

Restricted Stock Studies

Studies of the private sales of restricted shares of the stock of publicly traded companies have been performed to quantify the discount for lack of marketability. Restricted stock is almost identical to the freely traded stock of the same public company. However, the shares of the restricted stock cannot be sold on the stock market for a specified period of time.

Numerous restricted stock price studies have been performed since the late 1960s. These restricted stock studies have concluded average price discounts for restricted shares—compared to the price of identical freely traded shares—in the range of 13 to 45 percent.

The price discounts concluded in the more recent restricted stock studies are smaller than the price discounts concluded in the older studies. One explanation for this result is the increase in volume of privately placed stock (i.e., Rule 144(a)) in the past several years. Also, a change in the holding period required by the SEC under Rule 144—from two years to one year—took place as of April 29, 1997.

> *"The discounts for lack of marketability indicated by the restricted stock studies are typically lower than the discounts indicated by studies of private transactions prior to initial public offerings."*

The discounts for lack of marketability indicated by the restricted stock studies are typically lower than the discounts indicated by studies of private transactions prior to initial public offerings. Restricted stock shares cannot currently be traded on the stock market. However, the owner of the restricted stock has certainty that, in a relatively short period of time, the stock sale restrictions will be lifted.

However, shares of a closely held company may never be traded on an organized stock exchange. The prospect of ready marketability is lower for these closely held company shares; therefore, the discount for lack of marketability is higher for closely held shares than for restricted public stock shares.

Pre–Initial Public Offering Studies

A second type of study that attempts to quantify the discount for lack of marketability is the pre–initial public offering study. A pre-IPO study examines the private stock sale transactions of a closely held company that subsequently completed a successful initial public offering of its stock.

In a pre-IPO study, lack of marketability discounts are determined by quantifying the difference between (1) the price at which the stock was issued at the IPO and (2) the price at which the same stock was sold (in a private arm's-length transaction) prior to the IPO.

Willamette Management Associates

Willamette Management Associates has published the results of 18 pre-IPO studies covering the years from 1975 to 1997. We have recently completed three additional pre-IPO studies related to the years 1998, 1999, and 2000.

As in our previous pre-IPO studies, we attempted to include only private stock sale transactions that were consummated on an arm's-length basis. The data that we analyzed included: (1) the sale of stock in private placements and (2) the repurchase of treasury stock by the pre-IPO companies.

"The source documents that we used to identify the private sale transactions were complete SEC registration statements, primarily Forms S-1."

We eliminated from consideration in this study transactions involving the granting of stock options. In addition, any sale transactions (1) with corporate insiders or (2) between related parties were eliminated from consideration in this study. We eliminated these transactions unless we could verify (by telephone interview of the transaction principals) that the stock sale transactions were bona fide, arm's-length transactions.

We obtained the list of initial public offerings to consider in our study from the Corporate New Issues database provided by Thomson Financial Securities Data. We eliminated from our IPO analysis: (1) financial institutions, (2) real estate investment trusts (REITs), (3) natural resource companies, (4) offerings priced at $1 or less per share, and (5) offerings of units or warrants. We eliminated these offerings from the study because these IPOs may have unique characteristics.

"Because the private transactions occurred over a period of up to three years prior to the initial public offering, we made adjustments to reflect differences in market conditions for stocks of the respective industries between (1) the time of each private transaction and (2) the time of each subsequent public offering."

The source documents that we used to identify the private sale transactions were complete SEC registration statements, primarily Forms S-1. We analyzed all private sale transactions in the pre-IPO stock that took place during the 36 months prior to the company's initial public offering. If a company had more than one pre-IPO stock sale transaction that met the study's criteria, all such transactions were included. Multiple pre-IPO stock sale transactions within 12 months occurring at the same price were treated as a single sale transaction.

For each stock sale transaction for which meaningful earnings data were available in the registration statement as of both the private transaction and public offering dates, we compared (1) the price/earnings multiple of each private transaction with (1) the subsequent initial public offering price/earnings multiple. Companies that had no meaningful earnings as of the private transaction date and/or as of the initial public offering date were eliminated from the study.

Because the private sale transactions occurred over a period of up to three years prior to the initial public offering, we made adjustments to reflect differences in market conditions for stocks of the respective industries between (1) the time of each private transaction and (2) the time of each subsequent public offering. We adjusted the price/earnings multiples for differences in the industry average price/earnings multiple between (1) the time of the private transaction and (2) the time of the initial public offering.

The results of the Willamette Management Associates pre-IPO studies, including the three most recent studies, are presented in Table 1.

In addition to the Willamette Management Associates studies, other recent pre-IPO lack of marketability discount studies include: (1) the studies performed by John D. Emory and (2) the studies performed by Valuation Advisors LLC.

John D. Emory Pre-IPO Studies

John D. Emory, president of Emory Business Valuation, LLC, has conducted a series of pre–initial public offering studies for the period from 1980 to 2000. Emory's most recent pre-IPO study in the series covers the time period of May 1997 to December 2000.[1]

For the 1997-2000 period, Emory concluded (1) an average discount for lack of marketability of 48 percent and (2) a median discount for lack of marketability of 44 percent. These results are consistent with Emory's previous pre-IPO studies that concluded median discounts for lack of marketability ranging from (1) 40 percent in his 1989-1990 and 1990-1992 studies to (2) 66 percent in his 1980-1981 study.

Emory also performed (1) a dot-com pre-IPO study and (2) an expanded pre-IPO study during the same period.

Emory's dot-com pre-IPO study[2] included companies that had ".com" in their names. These types of companies are principally Internet-related. With the 92 dot-com IPOs in the May 1997 to December 2000 time period, Emory found 53 sales transactions to use in his pre-IPO study. The mean discount for lack of marketability and the median discount for lack of marketability conclusions for this study were both 54 percent.

In his expanded pre-IPO study,[3] Emory included companies he did not include in his "regular" pre-IPO study due to their financial condition. In this expanded pre-IPO study, companies that were not determined to be "reasonably sound" were included.

The discounts for lack of marketability concluded in this expanded pre-IPO study were somewhat higher than the discounts concluded in Emory's limited study. In the expanded pre-IPO study, the mean discount for lack of marketability was 50 percent and a median discount for lack of marketability was 52 percent.

"The mean and median discounts for lack of marketability concluded by the Willamette Management Associates 1998 pre-IPO study are consistent with our previous studies."

Valuation Advisors, LLC Pre-IPO Study

Valuation Advisors, LLC, performed a pre-IPO discount for lack of marketability study for each of the years 1999, 2000, and 2001.

The results of the 1999 pre-IPO study indicated an average one-year discount for lack of marketability of 51.91 percent.[4] In the 2000 pre-IPO study, the average one-year discount for lack of marketability was 47.07 percent.[5] And, the average one-year discount for lack of marketability concluded in the 2001 pre-IPO study was 22.41 percent.[6]

However, the average discount for lack of marketability became 40.84 percent when a narrowed discount range of 10 to 90 percent was used. This narrowed discount range was selected in order to reduce the impact of (1) "cheap" stock or stock options and (2) price premiums paid due to changing market conditions.

Interpretation of Discount for Lack of Marketability Results

The mean and median discounts for lack of marketability concluded by the Willamette Management Associates 1998 pre-

Table 1
Willamette Management Associates Pre-IPO Study
Summary of Price Discounts for Private Stock Sale Transactions
Compared to Subsequent Initial Public Offering Prices
(Data Adjusted for Changes in Industry P/E Multiples)

Time Period	Number of IPO Companies Analyzed	Number of Private Stock Sale Transactions Analyzed	Standard Mean Price Discount	Trimmed Mean Price Discount*	Median Price Discount	Standard Deviation
1975–78	17	31	34.0%	43.4%	52.5%	58.6%
1979	9	17	55.6%	56.8%	62.7%	30.2%
1980–82	58	113	48.0%	51.9%	56.5%	29.8%
1983	85	214	50.1%	55.2%	60.7%	34.7%
1984	20	33	43.2%	52.9%	73.1%	63.9%
1985	18	25	41.3%	47.3%	42.6%	43.5%
1986	47	74	38.5%	44.7%	47.4%	44.2%
1987	25	40	36.9%	44.9%	43.8%	49.9%
1988	13	19	41.5%	42.5%	51.8%	29.5%
1989	9	19	47.3%	46.9%	50.3%	18.6%
1990	17	23	30.5%	33.0%	48.5%	42.7%
1991	27	34	24.2%	28.9%	31.8%	37.7%
1992	36	75	41.9%	47.0%	51.7%	42.6%
1993	51	110	46.9%	49.9%	53.3%	33.9%
1994	31	48	31.9%	38.4%	42.0%	49.6%
1995	42	66	32.2%	47.4%	58.7%	76.4%
1996	17	22	31.5%	34.5%	44.3%	45.4%
1997	34	44	28.4%	30.5%	35.2%	46.7%
1998	14	21	35.0%	39.8%	49.4%	43.3%
1999	22	28	26.4%	27.1%	27.7%	45.2%
2000	13	15	18.0%	22.9%	31.9%	58.5%

* Excludes the highest and lowest deciles of indicated price discounts.

IPO study are consistent with our previous studies. However, the discounts for lack of marketability indicated by our 1999 and 2000 pre-IPO studies are significantly lower than:

1. the discounts indicated by our previous pre-IPO studies,
2. the discounts reported by Valuation Advisors, LLC, for the same years, and
3. the discounts reported by John Emory for the period from May 1997 through December 2000.

The first question one may ask upon reading these discount for lack of marketability results is, "Does this indicate a downward trend in discounts for lack of marketability?" Though this conclusion is possible, we believe that there are several other reasons that the results of the 1999 and 2000 pre-IPO studies may be atypical compared to long-term discount for lack of marketability indications.

First, there were relatively few IPO companies and private sale transactions that qualified for inclusion in our pre-IPO studies in the 1999 and 2000 years. The results for a larger data set would likely be indicative of long-term trends.

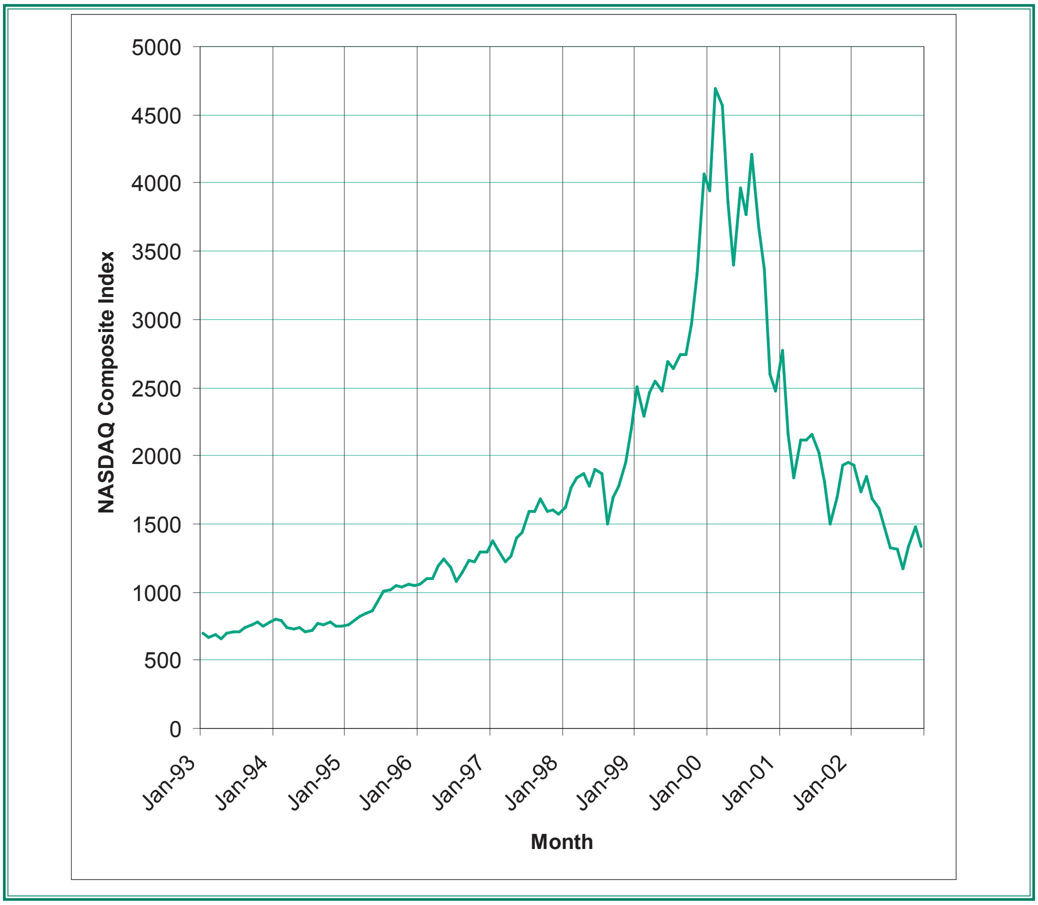
Second, 1999 and 2000 were not typical years for the stock market in general (see Chart 1). The height of the dot-com price "bubble" occurred during this time frame. A large number of dot-com companies implemented IPOs during this period, and a large number of those IPO dot-com companies subsequently failed.

Third, the average first-day trading returns for IPO stocks, measured from (1) the initial offer price to (2) the first day listed closing price, were extraordinarily high in 1999 and 2000. These data are presented in Table 2.

One possible explanation for this result is that many of the 1999-2000 IPOs may have been underpriced. There have also been allegations of IPO "spinning" by securities firms. According to these allegations, "hot" initial public stock offerings were allocated to corporate executives—so that the shares could be sold or "spun" for a quick profit—in exchange for investment banking business.

Furthermore, underwriters were alleged to have (1) charged excessive brokerage commissions to investors to whom lucrative IPO allocations were made and (2) required customers to buy shares of a new stock after the IPO at higher prices.

Chart 1
NASDAQ Composite Index - Monthly
For the Period of January 1993 through January 2002



Due to all of these influences during 1999 and 2000, the IPO prices may not be a good indication of the intrinsic fair market value of the subject stocks on the IPO date. To the extent that IPO prices were artificially low—allowing some underwriters and corporate executives to make excessive profits—the discounts for lack of marketability concluded in the various pre-IPO studies may be understated.

The discounts for lack of marketability indicated by Willamette Management Associates pre-IPO studies differ from the conclusions of the Valuation Advisors study and the Emory studies for two primary reasons. First, the criteria for the inclusion of private stock sale transactions vary between the respective pre-IPO studies.

Second, and more importantly, changes (1) in subject company earnings and (2) in the prices and earnings within the subject company's industry (between the time of the private transaction and the IPO) are included in the calculation of the discount for lack of marketability in the Willamette Management Associates pre-IPO studies. The discounts for lack of marketability in the Valuation Advisors study and in the Emory studies are calculated by simply comparing (1) the prior private stock sale transaction price to (2) the IPO price.

Table 2
Average First-Day Trading Returns For IPO Offerings During the Period 1980-2001

Year	Number of Initial Public Offerings	Average First-Day Return %
1980	70	14.5
1981	191	5.9
1982	77	11.4
1983	442	10.1
1984	172	3.6
1985	179	6.3
1986	378	6.3
1987	271	6.0
1988	97	5.4
1989	105	8.1
1990	104	10.8
1991	273	12.1
1992	385	10.2
1993	483	12.8
1994	387	9.8
1995	432	21.5
1996	621	16.7
1997	432	13.8
1998	267	22.3
1999	457	71.7
2000	346	56.1
2001	80	14.0

Source: Ritter, Jay R., and Ivo Welch, "A Review of IPO Activity, Pricing, and Allocations," *The Journal of Finance*, August 2002, pp. 1795-1828.

Summary and Conclusion

We have explained (1) the concept of marketability and (2) the types of research that have been performed to assist in estimating a discount for lack of marketability. We have presented the results of the most recent Willamette Management Associates pre–initial public offering studies within the context of other published pre-IPO studies.

In estimating a discount for lack of marketability, the analyst should consider the facts and circumstances of each particular case. There are times when the restricted stock studies are more relevant, and there are times when the pre-IPO studies are more relevant. This is because "lack of marketability" is a relative term.

The concept of marketability is often intertwined with the concept of control (e.g. a noncontrolling ownership interest as compared to a controlling ownership interest)—both in the courts and in actual transactions.

A thorough understanding of how marketability and control (or lack of the same) can affect the value of an asset is essential when estimating valuation discounts or premiums. These ownership attributes are most often an issue in the valuation of closely held company stock. However, these ownership attributes may also be considered in the valuation of other types of assets.

Notes:

1. John D. Emory Sr., F.R. Dengel III, John D. Emory Jr., "The Value of Marketability as Illustrated in Initial Public Offerings of Common Stock May 1997 through December 2000," *Business Valuation Review*, September 2001, pp. 15-19.
2. John D. Emory Sr., F.R. Dengel III, John D. Emory Jr., "The Value of Marketability as Illustrated in Initial Public Offerings of Dot-Com Companies May 1997 through March 2000," *Business Valuation Review*, September 2000, pp. 111-121.
3. John D. Emory Sr., F.R. Dengel III, John D. Emory Jr., "Expanded Study of the Value of Marketability as Illustrated in Initial Public Offerings of Common Stock May 1997 through December 2000," *Business Valuation Review*, December 2001, pp. 4-20.
4. Brian K. Pearson, "1999 Marketability Discounts as Reflected in Initial Public Offerings," *CPA Expert*, Spring 2000, pp. 1-6.
5. Brian K. Pearson, "2000 Marketability Discounts as Reflected in Initial Public Offerings," *Shannon Pratt's Business Valuation Update*, September 2001, pp. 1, 4-7.
6. Brian K. Pearson, "The 2001 Marketability Discount Study." Retrieved August 19, 2003, from http://www.valuationpros.com/ipo.html.

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