Valuation Discounts and Premium Insights

Update on the Willamette Management Associates Pre-IPO Discount for Lack of Marketability Study For the Period 1998 through 2002

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Introduction

The concept of investment marketability relates to the liquidity of an asset, property, or business interest—that is, how quickly and certainly it can be converted into cash at the owner's discretion. Investors value liquidity. That is, rational investors will pay a price premium for liquidity. And, conversely, rational investors will demand a price discount for the lack of liquidity.

For example, the common stock of a closely held company is not as liquid as the otherwise comparable common stock of a publicly traded company. The closely held company stock does not have the same degree of marketability as the otherwise comparable publicly traded company stock. Therefore, all other factors held constant, the closely held stock is less valuable than the comparable publicly traded stock, reflecting a price discount for lack of marketability.

Empirical research attempting to quantify this discount for lack of marketability (DLOM) for closely held stock generally falls into two fields of analysis:

1. studies of sale transactions in the restricted stock of publicly traded companies (also known as restricted stock studies) and
2. studies of private sale transactions in the stock of closely held companies that subsequently implement successful initial public offerings (also known as pre-IPO studies).

Willamette Management Associates (WMA) analysts have previously published empirical research pre-IPO studies analyzing the DLOM for the years 1975 through 1997. Recently, WMA analysts completed an additional pre-initial public offering (pre-IPO) DLOM study covering the five years of 1998 through 2002.

This discussion summarizes the results of the WMA pre-IPO DLOM study for the years 1998 through 2002.

"Typically, restricted stock is identical in all respects to the freely traded stock of the same public corporation, except that the restricted stock cannot be traded on a stock exchange for a specific time period."

Restricted Stock DLOM Studies

Studies of the sale of restricted shares of the stock of publicly traded companies are performed in order to quantify one indication of the DLOM related to closely held securities. Typically, restricted stock is identical in all respects to the freely traded stock of the same public corporation, except that the restricted stock cannot be traded on a stock exchange for a specific time period.

Numerous restricted stock DLOM studies have been performed (and their results published) since the late 1960s. These published restricted stock studies have concluded an average DLOM for restricted shares (compared to otherwise identical freely traded shares) in the range of 13 to 45 percent.

The DLOM concluded by the more recent restricted stock studies are smaller than the DLOM concluded by the older restricted stock studies. One explanation for this phenomenon is the increase in volume of privately placed stock under Securities and Exchange Commission (SEC) Rule 144(a) in the past several years. Also, a change in the minimum investment holding period required by the SEC under Rule 144—from two years to only one year—took place as of April 29, 1997.

The DLOM conclusions indicated by the published restricted stock studies are typically lower than the DLOM conclusions indicated by the published pre-IPO studies. Restricted shares of public corporation stock are not able to be traded directly on a stock exchange temporarily. With regard to restricted public stock, the investor has certainty that, in a relatively short time period, the trading restrictions will lapse.

However, the shares of stock of a closely held corporation may never be traded directly on a stock exchange. The prospect of any level of efficient marketability is much lower for closely held corporation shares compared to restricted public corporation shares.

Therefore, the appropriate DLOM related to closely held corporation shares (or to similar closely held investment securities) is generally considered to be much greater than the DLOM indicated by published restricted stock studies.

Pre–Initial Public Offering (Pre-IPO) DLOM Studies

A second type of empirical analysis that quantifies the appropriate DLOM for closely held stock is the pre-IPO study. A pre-IPO study examines arm's-length sale transactions in the stock of a closely held company that has subsequently achieved a successful initial public offering of its stock.

In a pre-IPO study, the DLOM is quantified by analyzing (with various adjustments) the difference between:

1. the public market price at which a stock was issued at the time of the IPO and
2. the private market price at which a stock was sold (in an arm's-length transaction) prior to the IPO.

> *"All transactions involving the granting of employee, executive, or other compensation-related stock options were eliminated from consideration in the 1998-2002 study."*

WMA Pre-IPO Studies

Willamette Management Associates analysts have previously published the results of 18 pre-IPO DLOM studies covering the period of 1975 through 1997. We have recently completed an additional pre-IPO DLOM study encompassing the five years 1998 through 2002.

As in the previous pre-IPO studies, we include only private market stock sale transactions that were conducted on an arm's-length basis in the 1998–2002 study. The transactional data analyzed in the 1998–2002 pre-IPO study included (1) sales of closely held corporation stock in private placements and (2) repurchases of treasury stock by the closely held corporation.

All transactions involving the granting of employee, executive, or other compensation-related stock options were eliminated from consideration in the 1998–2002 study. All transactions involving stock sales to corporate insiders or other related parties were eliminated from consideration in the 1998–2002 study unless we could verify (by a telephone interview with at least one principal party) that the stock sale transaction was, in fact, a bona fide, arm's-length transaction.

The specific analytical procedures performed in the various WMA pre-IPO DLOM studies are detailed on pages 408-411 of *Valuing a Business*, 4th edition, by Shannon P. Pratt, Robert F. Reilly, and Robert P. Schweihs, published in 2000 by McGraw-Hill.

In the current WMA pre-IPO study, we obtained the list of initial public offerings from the Corporate New Issues database. This database is provided by Thomson Financial Securities Data.

We eliminated from our analyses all IPOs involving financial institutions, real estate investment trusts (REITs), and natural resource companies. We also eliminated from our analyses (1) all offerings priced at $1 or less per share and (2) all offerings on units or warrants. Consistent with the procedures performed in previous WMA pre-IPO studies, we eliminated these data because such offerings may have unique investment characteristics.

The source documents used to identify the potential pre-IPO private market sale transactions were complete SEC registration statements, primarily Forms S-1.

The private market sale transactions we analyzed occurred during the 36-month period prior to the IPO. If a corporation had more than one private market transaction that met the study's criteria, all such private market transactions in that company were included in the analysis. Also, multiple private market transactions occurring within 12 months at the same share price were treated as a single transaction in the analysis.

For each private market transaction for which meaningful earnings data were available in the registration statement as of both the private transaction and the IPO dates, we compared the price/earnings multiple of each private transaction with the subsequent IPO price/earnings multiple. Corporations that had no meaningful earnings data as of either the private transaction date and the IPO date were eliminated from the analysis.

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

Both (1) the calculation of company and industry price/earnings multiples and (2) the adjustment for temporal changes in stock market conditions within each industry are consistent with the procedures performed in previous WMA pre-IPO studies.

The results of the recent WMA pre-IPO study, and the results of the previous WMA pre-IPO studies, are presented in Table 1.

In addition to the above-mentioned WMA pre-IPO DLOM studies, other recent pre-IPO DLOM studies include analyses performed by John D. Emory and analyses performed by Valuation Advisors LLC. The results of these other recent pre-IPO DLOM studies are summarized below.

John D. Emory Pre-IPO Studies

John D. Emory, president of Emory Business Valuation, LLC, conducted a series of pre-IPO DLOM studies from 1980 to 2000. His most recent pre-IPO study in the series covers the time period of May 1997 to December 2000.[1] For this time period, Emory concluded a mean DLOM of 48 percent and a median DLOM of 44 percent.

These recent DLOM conclusions are consistent with previously published Emory pre-IPO studies. The previously published Emory pre-IPO studies concluded a median DLOM ranging from 40 percent in the 1989 through 1990 and 1990 through 1992 studies, to 66 percent in the 1980 through 1981 study.

Emory also performed (1) a dot-com pre-IPO study and (2) an expanded pre-IPO study during the same time period. The Emory dot-com pre-IPO study[2] included initial public offering companies that had ".com" in their names. These types of companies typically involve Internet-related businesses.

With the 92 dot-com IPOs in the May 1997 to December 2000 time period, Emory found 53 private market stock sale transactions to analyze in this pre-IPO study. In this particular study, Emory concluded that the mean DLOM and the median DLOM conclusion were both 54 percent.

In the expanded pre-IPO study,[3] Emory included companies that were not included in the general pre-IPO study due to their uncertain financial condition. In the Emory expanded

Table 1
WMA Pre-IPO DLOM Studies
Summary of Concluded DLOM
(with Private Transaction P/E Multiples Compared to IPO P/E Multiples
Adjusted for Changes in Industry P/E Multiples)

Study Time Period	Number of IPO Companies Analyzed	Number of Private Market Transactions Analyzed	Standard Mean DLOM	Trimmed Mean DLOM*	Median DLOM	Standard Deviation of DLOM
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%
2001	2	2	-195.8%	n/a	-195.8%	n/a
2002	5	7	55.8%	n/a	76.2%	42.8%
5-Year Period 1998-2002	56	73	23.9%	31.6%	36.1%	59.9%

* Excludes the highest and lowest deciles of the indicated DLOM data.
n/a - not applicable

pre-IPO study, companies that were not determined to be "reasonably sound" were included in the analysis.

The DLOM conclusions in the Emory expanded pre-IPO study were greater than the DLOM conclusions in the general pre-IPO study. In the expanded pre-IPO, Emory concluded a mean DLOM of 50 percent and a median DLOM of 52 percent.

Valuation Advisors, LLC, Pre-IPO Study

Valuation Advisors, LLC (VA) performed a pre-IPO DLOM study for each of the years 1999, 2000, and 2001. The conclusion of the VA 1999 pre-IPO study indicated a mean one-year DLOM of 51.91 percent.[4] In the 2000 pre-IPO study, the mean one-year DLOM was concluded to be 47.07 percent.[5] The mean one-year DLOM concluded in the VA 2001 pre-IPO study was 22.41 percent.[6]

However, the mean DLOM became 40.84 percent when a narrowed DLOM range of 10 to 90 percent was used. This narrowed DLOM range was considered in order to reduce the influence of (1) cheap stock or stock options and (2) price premiums due to changing stock market conditions.

"In the 1998 WMA study, the indicated mean DLOM was 35.0 percent and the indicated median was 49.4 percent."

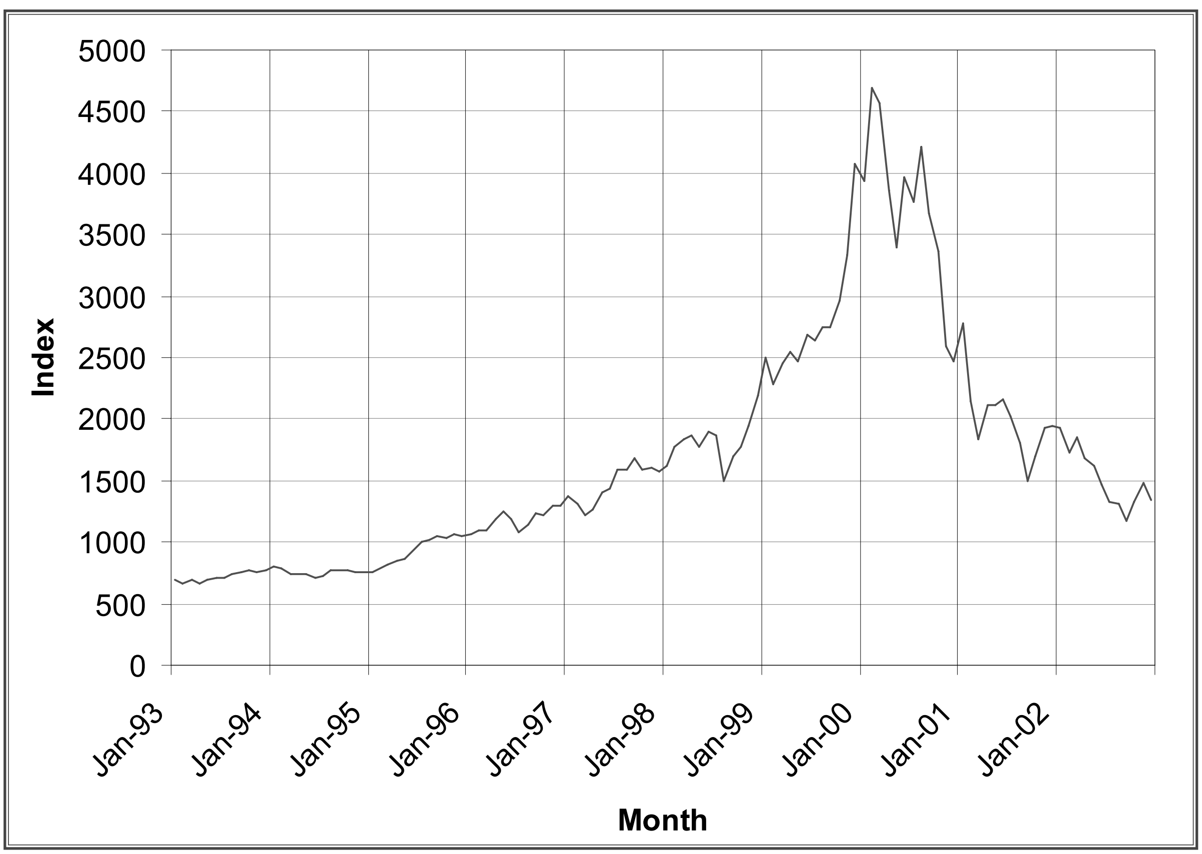
Interpretation of the WMA Pre-IPO Study DLOM Conclusions for 1998–2002

The WMA 1998 DLOM Conclusions

The mean and median WMA pre-IPO study DLOM conclusions for 1998 are generally consistent with the DLOM conclusions of our previously published studies.

In the 1998 WMA study, the indicated mean DLOM was 35.0 percent and the indicated median was 49.4 percent. These DLOM conclusions are entirely consistent with (1) the long-term (e.g., the decade prior to 1998) trends in prior WMA studies and (2) the DLOM conclusions of other analysts.

Chart 1
Monthly Nasdaq Composite Index
For the Period of January 1993 through December 2002



THE WMA 1999–2000 DLOM CONCLUSIONS

The DLOM conclusions for 1999 and 2000 are significantly lower than the DLOM conclusions of our previously published pre-IPO studies.

In addition, the WMA DLOM conclusions for 1999 and 2000 are significantly lower than (1) the DLOM conclusions reported by the Valuation Advisors, LLC study for the same years and (2) the DLOM conclusions reported by John Emory for the period from May 1997 through December 2000.

The question that arises from the fact that the WMA DLOM conclusions indicated for 1999 and 2000 are lower than indicated in our previous studies is: "Is there a downward trend for the DLOM?" Although this conclusion is possible, we believe that there are several reasons why the DLOM results for 1999 and 2000 are atypical of both (1) long-term trends and (2) the conclusions of other analysts.

"The DLOM conclusions for 1999 and 2000 are significantly lower than the DLOM conclusions of our previously published pre-IPO studies."

First, there were relatively few IPO companies and relatively few private sale transactions that qualified for inclusion in the WMA pre-IPO study in 1999 and 2000. The result of a DLOM study based on a larger data set of private sale transactions is likely to be more statistically valid.

Second, 1999 and 2000 were not typical years with regard to stock market price trends. This conclusion is illustrated by Chart 1, the monthly Nasdaq Composite Index for the period of January 1993 through December 2002. The years 1999 and 2000 clearly represent a "spike" in stock market prices when compared to both prior years and subsequent years.

Third, the height of the dot-com "bubble" occurred during this time frame. The 1999–2000 period encompassed both a record number of dot-com IPOs and a record with regard to dot.com company pricing multiples. These pricing multiples are often unexplainable based on the dot-com company financial fundamentals. Of course, a large number of dot-com companies consummated IPOs around this time and many of these dot-com companies subsequently failed.

Fourth, the average first-day returns for IPO stocks, measured from the offer price to the first listed close price, were extraordinarily high in 1999 and 2000. These average first-day return data are presented on Table 2.

One possible explanation for this return phenomenon is that many of the 1999-2000 IPOs may have been underpriced. There have also been allegations of IPO "spinning" on the part of certain investment banking (I/B) firms. In IPO "spinning," IPO "hot" offerings are allocated by the underwriter to corporate executives—so that the IPO shares could be sold or "spun" for a quick profit. The allegation is that such allocations were made by the underwriter in exchange for future I/B business.

Furthermore, underwriters are alleged to have (1) charged excessive brokerage commissions to investors to whom lucrative IPO share allocations were made and (2) required customers to buy shares of the new stock after the IPO date at much higher prices. Due to all of these influences, the IPO share prices during 1999 and 2000 may not be the best indication of the intrinsic value of the subject stocks.

To the extent that IPO prices were artificially low—allowing some underwriters and corporate executives to make excessive profits—the DLOM conclusions calculated in our 1999–2000 pre-IPO study may be understated.

Table 2
Average First-Day Returns for Initial Public Offerings Consummated in the Period of 1980-2001

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

THE WMA 2001-2002 DLOM CONCLUSIONS

The WMA DLOM conclusions for 2001 and 2002 are also inconsistent with the conclusions of our previously published pre-IPO studies.

The mean DLOM conclusion for 2001 is *negative* 195.8 percent (indicating a DLOM price premium). This "negative" DLOM conclusion is completely counterintuitive both in terms of (1) magnitude and (2) direction (i.e., a price premium instead of a price discount).

The mean DLOM conclusion for 2002 is 55.8 percent. This conclusion is abnormally high when compared to the mean DLOM conclusions of, say, the decade prior to 1999.

Accordingly, we recommend that analysts do not rely on the indicated DLOM conclusions for these two years 2001 and 2002 because:

1. there are too few private market stock sale transactions in the study for the results to be statistically meaningful and
2. the DLOM indications of the individual private market transactions are too extreme (both positive and negative) for the results to be practically meaningful.

"The WMA DLOM conclusions for 2001 and 2002 are also inconsistent with the conclusions of our previously published pre-IPO studies."

For the year 2001, there were only two private market sale transactions that met the selection criteria to be included in the WMA pre-IPO study. In the year 2002, there were only 7 private market sale transactions that met the selection criteria to be included in the WMA pre-IPO study.

Due to the low number of private market sale transactions included in the study in these two years, any extreme/aberrational prices from individual private sale transactions have the affect of disproportionately influencing the overall DLOM conclusions.

Accordingly, when looking for professional guidance with regard to the selection of an appropriate DLOM, we recommend that analysts either:

1. ignore the 2001 and 2002 results of the WMA pre-IPO study as not being representative of long-term trends with regard to the DLOM, or
2. consider the 2001 and 2002 results of the WMA pre-IPO study only within the context of an analysis of longer-term 5-year or 10-year period DLOM data (e.g., the consideration of the total private market sale transaction data with regard to the 5-year period 1998 through 2002, as presented on Table 1).

" . . . we believe that the quantitative conclusions for 2001 and 2002 are not reliable indicators of the current DLOM related to privately held corporation stock."

Both industry-specific and general capital market events in the years 2001 and 2002 could explain the unusual results of our DLOM study for those years. The year 2001 included much of the impact of the "burst" of the dot-com bubble. This "burst" ended the several years of apparent "irrational exuberance" both in terms of:

1. the volume of IPO transactions and
2. the inflated prices of dot-com and many other stocks.

The year 2001 also exhibited a significant decline in both (1) the volume of merger and acquisition (M&A) transaction activity and (2) M&A transaction pricing multiples. These unusual capital market events likely affected the DLOM conclusions with regard to 2001 and 2002.

Because of both (1) the unusual events in the stock markets and in the M&A capital markets in this period and (2) the aberrational quantitative conclusions of the 2001/2002 analyses compared to previously published studies, we believe that the quantitative conclusions for 2001 and 2002 are not reliable indicators of the current DLOM related to privately held corporation stock.

The WMA 1999–2002 DLOM Conclusions Compared to Other Studies

For the period 1999–2002, the WMA pre-IPO DLOM conclusions differ from the DLOM conclusions of the Valuation Advisors and the Emory studies for two primary reasons.

First, the selection criteria for inclusion of private market transactions in the respective pre-IPO studies vary.

Second, and more importantly, changes in subject company earnings and in the prices/earning multiples within the subject company industry (between the time of the private transaction and the IPO) are included in the WMA pre-IPO DLOM calculation. In contrast, the DLOM conclusions in the Valuation Advisors and in the Emory pre-IPO studies are calculated by simply comparing the private transaction (pre-IPO) price to the IPO price without adjustment for changes in industry-specific stock market conditions.

Summary and Conclusion

This discussion focused on the concept of marketability (or the lack thereof) in the valuation of closely held securities. This discussion summarized the general types of empirical research that have been conducted with regard to estimating a market-derived DLOM to be used in the valuation of closely held investments. And, this discussion presented the results of the most recent WMA pre-IPO DLOM study within the context of other published pre-IPO studies.

With regard to our 1998-2002 DLOM study, the DLOM conclusions for 1998 are a mean discount of 35.0 percent and a median discount of 49.4 percent. These conclusions are consistent with our previous studies and with the results of other published DLOM studies.

". . . we recommend that analysts rely on the collective results of the 5-year period 1998-2002 as a reasonable indication of the DLOM for the contemporary period."

The DLOM conclusions for 1999 and 2000 are lower than we would expect based (1) on our previous studies and (2) on the results of other published DLOM studies. As explained above, there are several capital market reasons why the 1999 and 2000 results of our DLOM study are suspect.

The DLOM conclusions for 2001 and 2002 do not appear to be reasonable. As explained above, there are several capital market reasons why the 2001 and 2002 results of our DLOM study appear to be unreliable.

In addition to these various capital market reasons, the extremely small number of private transaction observations analyzed in 2001 and 2002 would suggest concern with regard to the reliability of the DLOM conclusions for these two years.

". . . the mean DLOM for the 5-year period 1998-2002 is 23.9 percent and the median DLOM for the 5-year period 1998-2002 is 36.1 percent."

Therefore, we recommend that analysts do not rely on the discrete results of our DLOM study for the years 2001 and 2002. Rather, we recommend that analysts rely on the collective results of the 5-year period 1998-2002 as a reasonable indication of the DLOM for the contemporary period.

As presented on Table 1 above, the mean DLOM for the 5-year period 1998-2002 is 23.9 percent and the median DLOM for the 5-year period 1998-2002 is 36.1 percent. These 5-year period DLOM indications appear to be both reasonable and reliable.

In estimating the appropriate DLOM, an analyst should consider all of the facts and circumstances relevant to the subject security/business interest. Based on the unique facts of a specific analysis, there are times when the restricted stock DLOM studies may be more relevant, and there are times when the pre-IPO DLOM studies may be more relevant.

The concept of marketability of a closely held security is often intertwined with the concept of ownership control of a closely held security. However, these two investment valuation concepts (while generally related) are distinct in both theory and practice.

Consideration of how marketability and ownership control (or the lack of either of these two investment attributes) can affect value is an integral procedure in the estimation of/security analysis business valuation discounts or premiums.

The investment attributes of marketability and ownership control are fundamental considerations in the valuation of closely held stock. However, these investment attributes may also be considered in the valuation of other assets, properties, or business interests.

Notes:

1. John D. Emory Sr., F.R. Dengel III, and 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, and 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, and 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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