Chapter 17

Discounts for Illiquidity and Lack of Marketability

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All other things being equal, an ownership interest in a business is worth more if it is readily marketable. An ownership interest in a business is worth less if it is not readily marketable. This is because business owners—and all investors—prefer liquidity to illiquidity. Ownership interests in closely held businesses—even substantial closely held businesses—are illiquid relative to many other types of investments. This phenomenon may be further compounded by restrictions on the transfer of ownership interests often found in close corporation buy-sell agreements or shareholder agreements. Therefore, analysts have to identify and quantify the valuation adjustment associated with (1) the illiquidity of the subject business enterprise and (2) the lack of marketability in the subject business ownership interest.

For purposes of this chapter, we will use the term illiquidity to mean the inability of the owner of an entire business enterprise to convert his or her investment into cash quickly and at a reasonably low and predictable cost. We will use the term lack of marketability to mean the inability of the owner of a noncontrolling equity interest to convert his or her investment into cash quickly and at a reasonably low and predictable cost.

These two concepts of illiquidity and lack of marketability are related but distinctly different. As with all valuation adjustments, it is important to identify the base of comparison to which the adjustment relates.

The measurement base for the discount for illiquidity relates to “control event” transfers (i.e., asset sales, stock sales, or mergers) of controlling ownership interests or entire business enterprises. This discount quantifies the inherent liquidity differences between the subject business enterprise and the selection of guideline merged and acquired companies that are used as a benchmark for estimating the subject business enterprise value.

The measurement base for the discount for lack of marketability relates to noncontrol event transfers (i.e., sales of small blocks of securities on organized stock exchanges). This discount quantifies the inherent liquidity differences between the subject noncontrolling equity interest and the selection of guideline publicly traded company securities that are used as a benchmark for estimating the value of the subject securities.

First, this chapter will discuss the theoretical concepts of illiquidity and lack of marketability. Second, this chapter will present the most recent empirical studies that are frequently used by analysts to quantify these valuation adjustments.
Concept and Importance of Marketability

The concept of *marketability* deals with the liquidation of the subject business ownership interest. That is, how quickly can the business ownership interest be converted to cash at the investor’s discretion?

In this text, we will define *marketability* as the ability to convert the business ownership interest (at whatever ownership level) to cash quickly, with minimum transaction and administrative costs in so doing and with a high degree of certainty of realizing the expected amount of net proceeds.

Our definition is consistent with the definition offered by the *Encyclopedia of Banking & Finance*, which focuses on securities for which *some* public market already exists:

**Marketability.** The relative ease and promptness with which a security or commodity may be sold when desired, at a representative current price, without material concession in price merely because of the necessity of sale. Marketability connotes the existence of current buying interest as well as selling interest and is usually indicated by the volume of current transactions and the spread between the bid and asked price for a security—the closer the spread, the closer are the buying and selling interests to agreement on price resulting in actual transactions. To look at it from the standpoint of a dealer maintaining the MARKET, the closer his [or her] bid to current transactions and the smaller his [or her] markup is to asking prices, the larger the volume will be. By contrast, inactive securities that rarely trade or for which buyers have to be located or sales negotiated are characterized by large spreads between the bid and asked prices.¹

With respect to the ownership characteristics of operating assets (such as operating real estate and tangible personal property), the terms *marketability* and *liquidity* are sometimes interchangeable. The *Encyclopedia of Banking & Finance* offers the following:

**Liquidity.** The amount of time required to convert an asset into cash or pay a liability. For noncurrent assets, liquidity generally refers to marketability....

In economics, liquidity is the desire to hold assets in the form of cash. Common elements often included in the concept of liquidity include marketability, realizability, reversibility (as to the difference between buying and selling prices), divisibility of the asset, predictability or capital certainty, and plasticity (case of maneuvering into and out of various yields after the asset has been acquired). Firms and individuals often prefer to hold money for the sake of holding money. Liquidity may be desired for the following reasons: (1) the transactions motive, (2) the precautionary motive, and (3) the speculative motive. Money is desired to carry out future monetary transactions, to save for a rainy day, or to take advantage of movements in the price level.²

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² Ibid., p. 703.
Barron's Dictionary of Business Terms defines marketability and liquidity as follows:

**Marketability.** Speed and ease with which a particular product or investment may be bought and sold. In common use, *marketability* is interchangeable with *liquidity*, but *liquidity* implies the preservation of value when a security is bought or sold.\(^3\)

The North American Business Valuation Standards Council, including ASA, is proposing the following definitions by way of an exposure draft on an international glossary:

**Liquidity.** The degree to which an asset, business, business ownership interest, or security can readily be converted into cash without significant loss of principal.

**Marketability.** The capability and ease of transfer or salability of an asset, business, business ownership interest, or security.

The market for securities in the United States is generally considered to be the most liquid market for any kind of property anywhere in the world. This is one of the reasons that companies are able to raise investment capital from both institutional and individual investors: the ability to liquidate the investment immediately, at little cost, and with virtual certainty as to realization of the widely publicized market price. Empirical evidence suggests that investors are willing to pay a price premium for this level of liquidity. Conversely, investors extract a price discount relative to actively traded securities for stocks or other investment interests that lack this high degree of liquidity.

**Adjustment for Lack of Marketability for Noncontrolling Ownership Interests**

For a valuation "adjustment" to have a precise meaning, there should be a precise definition of the level of value to which the adjustment is made. When noncontrolling business ownership interests are valued by reference to the prices paid for guideline actively traded securities, the benchmark for the lack of marketability of the noncontrolling ownership interests is the active public securities markets. This publicly traded counterpart value is often called the *publicly traded equivalent value* or the *freely traded value*.

In the U.S. capital markets, a security holder is able to sell a security over the telephone or the Internet in seconds, usually at or within a small fraction of a percent of the last price at which the security traded, with a relatively small commission cost, and to receive the cash proceeds within three working days.

By contrast, the universe of potential buyers for most noncontrolling business ownership interests is an infinitesimal fraction of the universe of potential buyers for publicly traded securities.

Besides the problem of actually trying to sell the subject ownership interest, the liquidity of noncontrolling business ownership interests is further impaired by the relative unwillingness of banks and other lending institutions to accept them as loan collateral the same way they would accept public stock.

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Because of these extreme contrasts between the ability to sell or hypothecate noncontrolling business ownership interests as compared with publicly traded stock, empirical evidence suggests that significant valuation discounts for lack of marketability are appropriate. These lack of marketability discounts for noncontrolling business ownership interests tend to cluster in the range of 30 percent to 50 percent from their publicly traded counterparts. Naturally, each valuation should be analyzed on the basis of the individual facts and circumstances. Accordingly, each individual noncontrolling equity interest valuation may justify a discount for lack of marketability above or below this typical range.

Evidence for the Quantification of Discount for Lack of Marketability

There are two general types of empirical studies designed to quantify the valuation adjustments associated with the lack of marketability of noncontrolling ownership interests in closely held businesses:

1. Discounts on the sale of restricted shares of publicly traded companies.
2. Discounts on the sale of closely held company shares—compared with prices of subsequent initial public offerings of the same company's shares.

As noted earlier, the above empirical studies indicate that the base from which to take the indicated lack of marketability discount is the actual (or estimated) price at which the shares would sell if registered and freely tradable in a public stock market.

The immediately following sections of this chapter summarize the findings of these two extensive lines of empirical evidence. The second line of empirical studies is more recent. More importantly, the transactions are more similar to noncontrolling privately held business ownership interest transactions. This is because that is what they are, even though the subject company may have contemplated a public offering at the time of the transaction.

The data presented in this chapter relate to the quantification of the discount for lack of marketability only. As mentioned previously, the discount for lack of marketability is separate and distinct from the discount for lack of control. The discount for lack of control is discussed in the previous chapter.

The body of empirical evidence from which to quantify illiquidity discounts for controlling business ownership interests is much less extensive and of a different nature. This subject will be covered later in the chapter.

Marketability Discounts Extracted from Prices of Restricted Stocks

One body of empirical evidence specifically isolates the pricing implications of marketability from all other valuation-related factors: the body of data on transactions in letter stocks. A letter stock is identical in all respects to the freely traded stock of a public company except for the fact that it is restricted from trading on
the open stock market for a certain period. The duration of the restrictions may vary from one security to another. Since marketability is the only difference between the letter stock and its freely tradable counterpart, the analyst may quantify differences in the price at which letter stock transactions take place compared with open market transactions in the same stock on the same date. This difference will provide some evidence of the price spread between (1) a readily marketable security and (2) one that is otherwise identical but subject to certain restrictions on its marketability.

Publicly traded corporations frequently issue letter stock when making acquisitions or when raising private capital. This is because the time and cost of registering the new stock with the Securities Exchange Commission (SEC) would make registration at the time of the transaction impractical. Also, company founders or other insiders may own portions of a publicly traded company stock that has never been registered for public trading. Even though such stock cannot be sold to the public on the stock market, it may be sold in private transactions under certain circumstances. Such transactions usually must be reported to the SEC. Therefore, these private transactions become a matter of public record. Accordingly, empirical data on the prices of private transactions in restricted securities—or letter stocks—can be used for comparison with prices of the same but unrestricted securities eligible for trading on the open market.

Since these data represent hundreds of actual arm's-length transactions, anyone who is considering a deal involving such securities (for example, receiving letter stock in connection with selling out to a public company) would be well advised to become familiar with the information. Furthermore, courts have often referenced the data on letter stock price discounts when estimating the discount for lack of marketability appropriate to noncontrolling ownership interests in closely held companies.

The restrictions on the transfer of letter stock eventually lapse, usually within 24 months up to 1997, and generally within a year since that time except for the "dribble out" provisions, subject to volume limitations. At that point, the holder can sell the shares into the existing market, subject to whatever volume and other restrictions may be imposed. Consequently, all other things being equal, shares of closely held stock—which may never have the benefit of a public market—would be expected to require a higher discount for lack of marketability than that applicable to stock that would trade on an organized exchange but is restricted from doing so. In fact, the market does impose a higher discount on closely held noncontrolling ownership interests than on restricted stock of a public company, as we will see in a later section.

SEC Institutional Investor Study

In a major SEC study of institutional investor actions, one topic was the amount of discount at which transactions in restricted stock (or letter stock) occurred compared with the prices of identical but unrestricted stock on the open market. The most pertinent summary tables from that study are reproduced in Exhibits 17–1 and 17–2.

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### Table XIV-45 of SEC Institutional Investor Study: Discount by Trading Market

<table>
<thead>
<tr>
<th>Discount</th>
<th>-15.0% to 0.0%</th>
<th>0.1% to 10.0%</th>
<th>10.1% to 20.0%</th>
<th>20.1% to 30.0%</th>
<th>30.1% to 40.0%</th>
<th>40.1% to 50.0%</th>
<th>50.1% to 80.0%</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trading Market</strong></td>
<td><strong>No. of Trans.</strong></td>
<td><strong>Value of Purchases</strong></td>
<td><strong>No. of Trans.</strong></td>
<td><strong>Value of Purchases</strong></td>
<td><strong>No. of Trans.</strong></td>
<td><strong>Value of Purchases</strong></td>
<td><strong>No. of Trans.</strong></td>
<td><strong>Value of Purchases</strong></td>
</tr>
<tr>
<td>Unknown</td>
<td>1</td>
<td>$1,500,000</td>
<td>2</td>
<td>$2,496,583</td>
<td>1</td>
<td>$205,000</td>
<td>0</td>
<td>$0</td>
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<tr>
<td>New York Stock Exchange</td>
<td>7</td>
<td>3,760,663</td>
<td>13</td>
<td>15,111,798</td>
<td>13</td>
<td>24,303,988</td>
<td>10</td>
<td>17,954,085</td>
</tr>
<tr>
<td>American Stock Exchange</td>
<td>2</td>
<td>7,263,080</td>
<td>4</td>
<td>15,850,000</td>
<td>11</td>
<td>14,548,750</td>
<td>20</td>
<td>46,200,677</td>
</tr>
<tr>
<td>Over-the-Counter (reporting companies)</td>
<td>11</td>
<td>13,828,757</td>
<td>39</td>
<td>13,613,676</td>
<td>35</td>
<td>38,585,259</td>
<td>30</td>
<td>35,479,946</td>
</tr>
<tr>
<td>Over-the-Counter (non-reporting companies)</td>
<td>5</td>
<td>8,329,369</td>
<td>9</td>
<td>5,265,926</td>
<td>18</td>
<td>25,122,024</td>
<td>17</td>
<td>11,229,155</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>26</td>
<td>$24,681,849</td>
<td>67</td>
<td>$52,313,982</td>
<td>78</td>
<td>$102,965,024</td>
<td>77</td>
<td>$110,863,863</td>
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</table>

### Table XIV-47 of SEC Institutional Investor Study: Discount by Size of Transaction and Sales of Issuer

<table>
<thead>
<tr>
<th>Discount</th>
<th>50.1% or More</th>
<th>40.1% to 50.0%</th>
<th>30.1% to 40.0%</th>
<th>20.1% to 30.0%</th>
<th>10.1% to 20.0%</th>
<th>0.1% to 10.0%</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trading Market</strong></td>
<td><strong>No. of Trans.</strong></td>
<td><strong>Size of Transactions</strong></td>
<td><strong>No. of Trans.</strong></td>
<td><strong>Size of Transactions</strong></td>
<td><strong>No. of Trans.</strong></td>
<td><strong>Size of Transactions</strong></td>
<td><strong>No. of Trans.</strong></td>
</tr>
<tr>
<td>Less than 100</td>
<td>11</td>
<td>$2,894,999</td>
<td>7</td>
<td>$2,554,000</td>
<td>17</td>
<td>$19,642,354</td>
<td>16</td>
</tr>
<tr>
<td>100-999</td>
<td>7</td>
<td>474,040</td>
<td>2</td>
<td>1,221,000</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>1,000-4,999</td>
<td>8</td>
<td>4,605,505</td>
<td>13</td>
<td>8,170,747</td>
<td>12</td>
<td>10,675,150</td>
<td>15</td>
</tr>
<tr>
<td>5,000-19,999</td>
<td>6</td>
<td>1,620,015</td>
<td>4</td>
<td>1,147,305</td>
<td>13</td>
<td>25,860,008</td>
<td>25</td>
</tr>
<tr>
<td>20,000-99,999</td>
<td>3</td>
<td>605,689</td>
<td>3</td>
<td>4,372,676</td>
<td>6</td>
<td>11,499,259</td>
<td>8</td>
</tr>
<tr>
<td>100,000 or more</td>
<td>2</td>
<td>1,805,068</td>
<td>0</td>
<td>2</td>
<td>2,049,999</td>
<td>3</td>
<td>7,503,386</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>37</td>
<td>$12,005,316</td>
<td>29</td>
<td>$17,465,728</td>
<td>50</td>
<td>$69,825,770</td>
<td>68</td>
</tr>
</tbody>
</table>

Exhibit 17-1 presents the price discount from stock market prices on letter stock transactions disaggregated by the market in which the unrestricted stock trades. The four categories are the New York Stock Exchange (NYSE), American Stock Exchange (AMEX), over-the-counter (OTC) reporting companies, and OTC nonreporting companies. A reporting company is a publicly traded company that must file Forms 10-K, 10-Q, and other information with the SEC. A nonreporting company is one whose stock is publicly traded OTC but is not subject to the same reporting requirements. A company whose stock is traded OTC can avoid becoming a SEC reporting company either by maintaining its total assets under $1 million or by keeping its number of stockholders under 500.

Because most closely held businesses (even substantial close corporations) are much smaller than typical well-known public companies, the smaller nonreporting public companies may have characteristics that are more comparable with the subject closely held business. However, since these nonreporting public companies need not report to the SEC, the analyst may have trouble obtaining annual and interim reports for them.

Exhibit 17-1 indicates that, compared with their free-trading counterparts, the price discounts on the letter stocks were the least for NYSE-listed stocks and increased, in order, for AMEX-listed stocks, OTC reporting companies, and OTC nonreporting companies. For OTC nonreporting companies, the largest number of observations fell in the 30 to 40 percent price discount range. Slightly over 56 percent of the OTC nonreporting companies had price discounts greater than 30 percent on the sale of their restricted stock—compared with the stock market price of their free-trading stock. A little over 30 percent of the OTC reporting companies were discounted over 30 percent, and over half had price discounts over 20 percent.

Using midpoints of the price discount range groups from Exhibit 17-1—and even including those that sold at price premiums for one reason or another—the overall mean average price discount was 25.8 percent and the median price discount was about the same. The study also noted, “Average discounts rose over the period January 1, 1966, through June 30, 1969,” and average discounts were “27.9 percent in the first half of 1969.” For nonreporting OTC companies (which are more comparative with smaller businesses), the average price discount was 32.6 percent, and the median price discount again was about the same.

Since the time of the SEC study, the efficiency of the OTC market has improved considerably. This has been aided by the development of inexpensive and virtually instantaneous electronic communications and the advent of the Nasdaq system. Since the market in which restricted OTC shares will eventually trade once the restrictions expire (or are removed) is now somewhat more efficient, one would expect the differential in price discounts for restricted listed versus OTC stocks to be less pronounced. This generally has been the case.

Exhibit 17-2 presents the discounts from open market prices on letter stock transactions, disaggregated by the subject companies’ annual sales volumes into six groups. Companies with the largest sales volumes tend to receive the smallest discounts, and companies with the smallest sales volumes tend to receive the largest discounts. Well over half the companies with sales under $5 million (i.e., the three smallest of the six size categories used) had price discounts of over 30 percent. However, this may not be a size effect but just further evidence of the influence of the trading market. This is because most of the largest companies were listed on the NYSE, by far the most liquid market at that time.

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5 Ibid., p. 2452.
Exhibit 17–3

Gelman Study

Distribution of Price Discounts

<table>
<thead>
<tr>
<th>Size of Discount</th>
<th>No. of Common Stocks</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 15.0%</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>15.0–19.9</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>20.0–24.9</td>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td>25.0–29.9</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>30.0–34.9</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>35.0–39.9</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>40.0 and Over</td>
<td>32</td>
<td>36</td>
</tr>
<tr>
<td>Total</td>
<td>89</td>
<td>100</td>
</tr>
</tbody>
</table>


Gelman Study

In 1972, Milton Gelman published the results of his study of prices paid for restricted securities by four closed-end investment companies specializing in restricted securities investments.6 From 89 transactions between 1968 and 1970, Gelman found that (1) both the arithmetic average and median price discounts were 33 percent and that (2) almost 60 percent of the purchases were at price discounts of 30 percent and higher. The distribution of price discounts found in the Gelman study is presented in Exhibit 17–3.

Trout Study

In a study of letter stocks purchased by mutual funds from 1968 to 1972, Robert Trout attempted to construct a financial model that would provide an estimate of the price discount appropriate for a private company's stock.7 His multiple regression model involved 60 purchases and found an average price discount of 33.45 percent for restricted stock from freely traded stock. As the SEC study previously indicated, Trout also found that companies with stock listed on national exchanges had lower discounts on their restricted stock transactions than did companies with stock traded OTC.

Moroney Study

In an article published in the March 1973 issue of Taxes, Robert E. Moroney presented the results of a study of the prices paid for restricted securities by 10 registered

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investment companies. The study reflected 146 purchases. The average price discount for the 146 transactions was 35.6 percent, and the median price discount was 33.0 percent.

Moroney points out:

It goes without saying that each cash purchase of a block of restricted equity securities fully satisfied the requirements that the purchase price be one, "at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of relevant facts." Reg. Sec. 20.2031-1(b).

Moroney contrasts the evidence of the actual cash deals with the lower average price discounts for lack of marketability adjudicated in most prior court decisions on gift and estate tax cases. He points out, however, that the empirical evidence on the prices of restricted stocks was not available as a benchmark for quantifying lack of marketability discounts at the time of the prior cases. And, he suggests that higher price discounts for lack of marketability be allowed subsequently based on relevant data available.

Maher Study

Another well-documented study on lack of marketability discounts for closely held business ownership interests was performed by J. Michael Maher and published in Taxes. Maher's analytical method was similar to Moroney's in that it compared prices paid for restricted stocks with the market prices of their unrestricted counterparts. Maher found that mutual funds were not purchasing restricted securities during 1974 and 1975, which were very depressed years for the stock market. Therefore, the data actually used covered the five-year period from 1969 through 1973. The study showed, "the mean discount for lack of marketability for the years 1969–1973 amounted to 35.43 percent." Maher further eliminated the top and bottom 10 percent of purchases in an effort to remove especially high- and low-risk situations. The result was almost identical with the outliers removed, with a mean price discount of 34.73 percent.

Standard Research Consultants Study

In 1983, Standard Research Consultants (SRC) analyzed recent private placements of common stock to test the current applicability of the SEC study. SRC studied 28 private placements of restricted common stock from October 1978 through June 1982. Price discounts ranged from 7 to 91 percent, with a median of 45 percent.

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9 Ibid., p. 151.
11 Ibid., p. 571.
Willamette Management Associates Study

Willamette Management Associates analyzed private placements of restricted stocks for the period January 1, 1981, through May 31, 1984. The early part of this study overlapped the last part of the SRC study, but few transactions took place during the period of overlap. Most of the transactions in the Willamette Management Associates study occurred in 1983.

Willamette Management Associates identified 33 transactions during that period (1) that could reasonably be classified as arm's length and (2) for which the price of the restricted shares could be compared directly with the price of trades in identical but unrestricted shares of the same company at the same time. The median price discount for the 33 restricted stock transactions compared with the prices of their freely tradable counterparts was 31.2 percent.

The slightly lower average percentage price discounts for private placements during this time may be attributable to the somewhat depressed pricing in the public stock market. This, in turn, reflected the recessionary economic conditions prevalent during most of the period of the study.

Silber Study

In a 1991 article in the Financial Analysts Journal, William L. Silber presented the results of his analysis of 69 private placements of common stock of publicly traded companies between 1981 and 1988. He found that the average price discount was 33.75 percent, which is very consistent with earlier studies.

Silber also found that the size of the price discount tended to be higher for private placements that were larger as a percentage of the shares outstanding. He found a small effect on the price discount on the basis of the size of the company as measured by revenues.

FMV Opinions, Inc. Study

An article in the January/February 1994 issue of Estate Planning referenced a study by FMV Opinions, Inc., that "examined over 100 restricted stock transactions from 1979 through April 1992." The FMV study found a mean price discount of only 23 percent.

Management Planning, Inc. Study

A detailed study of restricted public securities was conducted by the valuation firm Management Planning, Inc. This study is titled "Analysis of Private Sales of Unregistered Common Stock, January 1, 1980–December 31, 1996." The results of this study are reported in The Handbook of Advanced Business Valuation.

There was clear size effect in the Management Planning Study, with smaller companies tending to have larger discounts, as shown in Exhibit 17–4.

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### Exhibit 17–4

#### Analysis of Restricted Stock Discounts by Revenue Size

Based upon Data from the Management Planning, Inc. Study

<table>
<thead>
<tr>
<th>Revenues</th>
<th>Percent of Sample</th>
<th>Average Revenues ($ Millions)</th>
<th>Average Discounts</th>
<th>Standard Deviations</th>
<th>Range of Discounts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under $10 million</td>
<td>28.6%</td>
<td>6.6</td>
<td>32.9%</td>
<td>15.6%</td>
<td>2.8% – 57.6%</td>
</tr>
<tr>
<td>$10-$30 million</td>
<td>22.4%</td>
<td>22.5</td>
<td>30.8%</td>
<td>11.2%</td>
<td>15.3% – 49.8%</td>
</tr>
<tr>
<td>$30-$50 million</td>
<td>20.4%</td>
<td>35.5</td>
<td>25.2%</td>
<td>15.1%</td>
<td>5.2% – 46.3%</td>
</tr>
<tr>
<td>$50-$100 million</td>
<td>16.3%</td>
<td>63.5</td>
<td>19.4%</td>
<td>7.3%</td>
<td>11.6% – 29.3%</td>
</tr>
<tr>
<td>Over $100 million (adjusted)*</td>
<td>8.2%</td>
<td>224.9</td>
<td>14.9%</td>
<td>10.5%</td>
<td>0.0% – 24.1%</td>
</tr>
<tr>
<td>Overall sample averages</td>
<td>95.9%</td>
<td>47.5</td>
<td>27.7%</td>
<td>14.1%</td>
<td>0.0% – 57.6%</td>
</tr>
<tr>
<td>*Over $100 million (actual calculation)</td>
<td>4.1%</td>
<td>187.1</td>
<td>25.1%</td>
<td>17.9%</td>
<td>0.0% – 46.5%</td>
</tr>
</tbody>
</table>

NOTE: Excludes Sudbury Holdings, Inc., whose private placement consisted of 125 percent of the pre-transaction shares outstanding. Excludes Starrett Housing Corp. which is one of the five most thinly traded companies in the sample.

The purpose of the Management Planning restricted stock study was to compare (1) the per share prices paid in private placements of restricted stock with (2) the same company’s freely traded, stock market price. The Management Planning study shows that in the vast majority of cases, restricted shares are privately placed at a lower price than the concurrent publicly traded price of the same stock. The difference in price, or discount, stems from the burden of the holding period, and resultant lack of liquidity, placed on the restricted stock. The restricted shares, it should be remembered, can be expected to have marketability after the initial two- to three-year holding period (a one- to two-year holding period for shares privately placed after April 29, 1997) and the various other Rule 144 requirements are met. In contrast, there is little likelihood that the typical privately held security will ever have the ready liquidity of a public stock or access to the infrastructure that supports our efficient public stock markets. Nonetheless, research and understanding of the discounts in private placements of restricted stock provide a good starting point for estimating the size of discounts for lack of marketability.

The private placement of restricted stock is a means by which corporations raise capital. This alternative is selected when, for reasons related to control issues, costs, or timing, it is not advantageous or practical to raise new equity capital in the already established market for a company's stock. Management Planning found three publications to be excellent sources of private placement transactions. All are now published by Securities Data Publishing (SDP), located in New York. (They were formerly published by Dealer's Digest, Inc.) Up until 1989, Management Planning reviewed Investment Dealers Digest. When Investment Dealers Digest reduced its coverage of private placements in 1989, Management Planning first switched to Private Placement Letter and, later, to Private Equity Week. Using these three publications as a source, Management Planning reviewed all the private placements that were reported from January 1, 1980, to December 31, 1996. In selecting the transactions for further analysis, they established the following initial tests, or screening.

- The company selling stock in a private placement should make its financial statements available to the public.
• The company should have a publicly held and actively traded common stock "counterpart" equal in all other respects to the unregistered stock.
• Sufficient data on the private transaction should be readily available.
• The publicly traded common stock counterpart should be selling at a price of at least $2 per share.
• The company should be a domestic corporation.
• The company should not be characterized as being in the "developmental" stage at the time of the transaction.

In order to obtain the most meaningful group of private placement transactions that would have the most relevance to business valuation analysts, Management Planning established three additional tests that had to be met by each transaction.

• If the company issuing the restricted shares lost money in the year prior to the transaction, it was excluded.
• All start-up companies were excluded. Companies with less than $3 million in sales volume were also excluded.
• If the transaction involved restricted shares and the terms of the transaction conferred on the holder the right to register the shares for public trading, the transaction was excluded.

Management Planning reached the following conclusions about the final 53 transactions included in their study:

• The average lack of marketability discount was about 27 percent.
• The median lack of marketability discount was about 25 percent.
• These median and average lack of marketability discounts are slightly lower than the median (28 percent) and the average (29 percent) discounts of the entire prescreen group of 231 transactions.
• Only one of the 53 transactions occurred at a price equal to the market price.
• The remaining 52 transactions all occurred at lack of marketability discounts ranging from a low of 3 percent to a high of 58 percent.

Johnson Study

Bruce Johnson, of the firm Munroe, Park, & Johnson, studied 72 private placement transactions that occurred from 1991 through 1995.16 This was the first half-decade after the Rule 144 restrictions were relaxed. The range was a 10 percent premium to a 60 percent discount, with an average discount for these 72 transactions of 20 percent.

The study analyzed four factors that might influence the size of the discount: (1) positive net income, (2) sales volume, (3) transaction value, and (4) net income strength. The results of his study are shown in Exhibit 17-5.

Columbia Financial Advisors Study

As of this writing, the only restricted stock study undertaken since the Rule 144 holding period was reduced to one year in 1997 is the one headed by Kathryn Aschwald at Columbia Financial Advisors, Inc. (CFA).17

---

### Johnson Study

<table>
<thead>
<tr>
<th>Total Net Income</th>
<th>Avg Discount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative</td>
<td>22.5%</td>
</tr>
<tr>
<td>$0 to $1M</td>
<td>26.0%</td>
</tr>
<tr>
<td>$1M to $10M</td>
<td>18.1%</td>
</tr>
<tr>
<td>+ $10M</td>
<td>6.3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Sales</th>
<th>Avg Discount</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0 to $10M</td>
<td>23.5%</td>
</tr>
<tr>
<td>$10M to $50M</td>
<td>19.4%</td>
</tr>
<tr>
<td>$50M to $200M</td>
<td>17.7%</td>
</tr>
<tr>
<td>+ $200M</td>
<td>13.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transaction Size</th>
<th>Avg Discount</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0 to $5M</td>
<td>26.7%</td>
</tr>
<tr>
<td>$5M to $10M</td>
<td>20.9%</td>
</tr>
<tr>
<td>$10M to $25M</td>
<td>17.0%</td>
</tr>
<tr>
<td>+ $25M</td>
<td>10.8%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Net Income Margin</th>
<th>Avg Discount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative</td>
<td>22.5%</td>
</tr>
<tr>
<td>0% to 5%</td>
<td>23.7%</td>
</tr>
<tr>
<td>5% to 10%</td>
<td>15.2%</td>
</tr>
<tr>
<td>+10%</td>
<td>11.6%</td>
</tr>
</tbody>
</table>


Their study was divided into two parts: January 1, 1996, through April 30, 1997 (before the reduction in the Rule 144 holding period), and May 1, 1997, through December 31, 1998 (after the one-year holding period became effective, April 29, 1997).

They identified 23 transactions for the 1996 to April 1997 period, with discounts ranging from .8 to 67.5 percent, with a mean of 21 percent. For the May 1997 to December 1998 period, they identified 15 transactions, with a range of 0 to 30 percent, and a mean of 13 percent, and a median of 9 percent.

As explained by Kathryn Aschwald, author of the CFA study:

Many “rumblings” in the appraisal community have centered around the fact that discounts for restricted stock have been declining, and many appear to be concerned about what this might mean in valuing privately held securities. It makes perfect sense that the discounts for restricted securities have generally declined since 1990 as the market (and liquidity) for these securities has increased due to Rule 144A and the shortening of restricted stock holding periods beginning April 29, 1997. Thus, while the newer studies are specifically relevant for determining the appropriate discounts for restricted securities, the studies conducted after
1990 are not relevant for purposes of determining discounts for lack of marketability for privately held stock, because they reflect the increased liquidity in the market for restricted securities. Such increased liquidity is not present in privately held securities.18

LiquiStat Database

As of this writing, the latest restricted stock study to be published is the LiquiStat database, a study by Espen Robak at Pluris Valuation Advisors LLC. The LiquiStat database is a continuously updated database of transactions in the secondary market for illiquid securities.19 This sets LiquiStat apart from the rest of the restricted stock studies reviewed in this chapter. Of the three categories of empirical studies reviewed herein (restricted stock studies, pre-IPO studies, and studies of acquisition multiples for public vs. private companies), LiquiStat almost fits into a separate category. This is because all the other restricted stock studies measure the discounts taken in private placements: mostly very large corporate transactions where a (sometimes cash-strapped) company sells a significant portion of its shares to an investor or, most frequently, a group of investors. LiquiStat, on the other hand, analyzes discounts taken when investors not affiliated with the issuing company sell restricted stock in private transactions to other investors.

The average holding period remaining for the shares sold in the secondary market was 138 days, which is shorter than the holding periods in restricted stock private placement studies have been assumed to be. Surprisingly, therefore, the LiquiStat data shows significantly higher discounts than in other recent studies. Based on 61 transactions in plain-vanilla common equity from April 2005 to January 2007, their study found an average and median discount of 32.8 percent and 34.6 percent, respectively.20 As explained by Espen Robak, author of the study:

The expected illiquidity period for the shares sold in the private placement studies may be significantly and systematically understated. (...) PIPE investments have become highly popular partly because issuers often register the stock shortly after the private placement. When investing, PIPE buyers have fairly strong visibility over how long they will have to wait for the shares to be registered. However, those details are not always available to the authors of private placement studies. Thus, whether or not stock is issued with registration rights, or even a promise of registration very shortly after the placement, may be unknown. This, if true, would tend to overstate the actual expected period of illiquidity for the shares in the studies.21

Furthermore, the data shows that the discounts are higher for larger blocks, relative to market trading volume, shares with a greater number of days of illiquidity remaining, shares with lower share price, and riskier shares.

18 Ibid., pp. 4–5.
19 The transactions in the LiquiStat database are made on the Restricted Securities Trading Network (RSTN), an online trading platform managed by Restricted Stock Partners of New York, NY. More information on this trading market for restricted securities is available at www.restrictedsecurities.net.
Exhibit 17-6

LiquiStat™ Discounts for Restricted Stocks


The LiquiStat database also provides the first-ever sample of real-world transaction data on sales of warrants. The discounts for these restricted securities, which are directly comparable with the nonqualified stock options, issued by thousands of companies, are significantly higher than for restricted stock. Based on 76 transactions in illiquid warrants from April 2005 to January 2007, their study found an average and median discount of 41.5 percent and 44.0 percent, respectively. Discounts are higher for more volatile stocks, for longer times to expiration, and for options that are out-of-the-money. See Exhibit 17-6 for the LiquiStat discounts for restricted stock.

Summary of Empirical Studies on Restricted Stock Transactions

The 12 empirical studies cover several hundred restricted stock transactions spanning the late 1960s through 1998. Considering the number of independent researchers and the very long time span encompassing a wide variety of market conditions, the results are remarkably consistent, as summarized in Exhibit 17-7.

In many of the cases of restricted stock transactions tabulated in Exhibit 17-7, the purchaser of the stock had the right to register the stock for sale in the existing public market. Sometimes investors get a commitment from the issuer to register the securities at a certain future date. Sometimes investors have “demand” rights, where they can force the issuer to register the securities at a time of their choosing. Sometimes investors get “piggyback” rights where there is no obligation other than to include the securities on any future registration that the issuer undertakes. And, sometimes the purchaser has to rely on SEC Rule 144, where he or she can

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22 Robak, supra, note 2.
Exhibit 17–7

Summary of Restricted Stock Studies

<table>
<thead>
<tr>
<th>Empirical Study</th>
<th>Years Covered in Study</th>
<th>Average Price Discount (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEC overall average [a]</td>
<td>1966–1969</td>
<td>25.8</td>
</tr>
<tr>
<td>SEC nonreporting OTC companies [a]</td>
<td>1966–1969</td>
<td>32.6</td>
</tr>
<tr>
<td>Gelman [b]</td>
<td>1968–1970</td>
<td>33.0</td>
</tr>
<tr>
<td>Trout [c]</td>
<td>1968–1972</td>
<td>33.5</td>
</tr>
<tr>
<td>Moroney [d]</td>
<td>[k]</td>
<td>35.6</td>
</tr>
<tr>
<td>Maher [e]</td>
<td>1969–1973</td>
<td>35.4</td>
</tr>
<tr>
<td>Silber [h]</td>
<td>1981–1988</td>
<td>33.8</td>
</tr>
<tr>
<td>FMV Opinions, Inc. [i]</td>
<td>April 1992</td>
<td>23.0</td>
</tr>
<tr>
<td>Johnson [m]</td>
<td>1991-1995</td>
<td>20.0</td>
</tr>
<tr>
<td>Columbia Financial Advisors</td>
<td>1996–April 1997 (n)</td>
<td>21.0</td>
</tr>
<tr>
<td>Columbia Financial Advisors</td>
<td>May 1997–1998 (n)</td>
<td>13.0</td>
</tr>
</tbody>
</table>

g. Willanette Management Associates study (unpublished).
k. Although the years covered in this study the likely to be 1969–1972, no specific years were given in the published account.
l. Median discounts.

sell after one year if other parts of the rule are followed. In recent years, more transactions have occurred under SEC Rule 144(a), which relaxes some of the restrictions on such transactions, thus making the restricted securities more marketable. In any case, investors generally expect to be able to resell the stock in the public market in the foreseeable future.

The Internal Revenue Service specifically recognized the relevance of restricted stock transaction data as evidence for quantification of the discount for lack of marketability in Revenue Ruling 77-287. Revenue Ruling 77-287 is presented in Exhibit 17–8.
Revenue Ruling 77-287

Section 1. Purpose.
The purpose of this Revenue Ruling is to amplify Rev. Rul. 59-60, 1959-1 C.B. 237, as modified by Rev. Rul. 65-193, 1965-2 C.B. 370, and to provide information and guidance to taxpayers, Internal Revenue Service personnel, and others concerned with the valuation, for Federal tax purposes, of securities that cannot be immediately resold because they are restricted from resale pursuant to Federal securities laws. This guidance is applicable only in cases where it is not inconsistent with valuation requirements of the Internal Revenue Code of 1954 or the regulations thereunder. Further, this ruling does not establish the time at which property shall be valued.

Sec. 2. Nature of the Problem.
It frequently becomes necessary to establish the fair market value of stock that has not been registered for public trading when the issuing company has stock of the same class that is actively traded in one or more securities markets. The problem is to determine the difference in fair market value between the registered shares that are actively traded and the unregistered shares. This problem is often encountered in estate and gift tax cases. However, it is sometimes encountered when unregistered shares are issued in exchange for assets of the stock of an acquired company.

Sec. 3. Background and Definitions.
.01 The Service outlined and reviewed in general the approach, methods, and factors to be considered in valuing shares of closely held corporate stock for estate and gift tax purposes in Rev. Rul. 59-60, as modified by Rev. Rul. 65-193. The provisions of Rev. Rul. 59-60, as modified, were extended to the valuation of corporate securities for income and other tax purposes by Rev. Rul. 68-699, 1968-2 C.B. 327.

.02 There are several terms currently in use in the securities industry that denote restrictions imposed on the resale and transfer of certain securities. The terms are used to describe the class of securities involved, but they are sometimes referred to as "unregistered securities," "investment letter stock", "control stock", or "private placement stock." Frequently these terms are used interchangeably. They all indicate that these particular securities cannot lawfully be distributed to the general public until a registration statement relating to the corporation underlying the securities has been filed, and has also become effective under the rules promulgated and enforced by the United States Securities & Exchange Commission (SEC) pursuant to the Federal securities laws. The following represents a more refined definition of each of the following terms along with two other terms—"exempted securities" and "exempted transactions."

(a) The term "restricted securities" is defined in Rule 144 adopted by the SEC as "securities acquired directly or indirectly from the issuer thereof, or from an affiliate of such issuer, in a transaction or chain of transactions not involving any public offering."

(b) The term "unregistered securities," refers to those securities with respect to which a registration statement, providing full disclosure by the issuing corporation, has not been filed with the SEC pursuant to the Securities Act of 1933. The registration statement is a condition precedent to a public distribution of securities in interstate commerce and is aimed at providing the prospective investor with a fair basis for sound judgment in making investment decisions.

(c) The terms "investment letter stock" and "letter stock" denote shares of stock that have been issued by a corporation without the benefit of filing a registration statement with the SEC. Such stock is subject to resale and transfer restrictions set forth in a letter agreement requested by the issuer and signed by the buyer of the stock when the stock is delivered. Such stock may be found in the hands of either individual investors or institutional investors.

(d) The term "control stock" indicates that the shares of stock have been held or are being held by an officer, director, or other person close to the management of the corporation. These persons are subject to certain requirements pursuant to SEC rules upon resale of shares they own in such corporations.

(e) The term "private placement stock" indicates that the stock has been placed with an institution or other investor who will presumably hold it for a long period and ultimately arrange to have the stock registered if it is to be offered to the general public. Such stock may or may not be subject to a letter agreement. Private placements of stock are exempted from the registration and prospectus provisions to the Securities Act of 1933.

(f) The term "exempted securities" refers to those classes of securities that are expressly excluded from the registration provisions of the Securities Act of 1933 and the distribution provisions of the Securities Exchange Act of 1934.

Sec. 4. Securities Industry Practice in Valuing Restricted Securities.
.01 Investment Company Valuation Practices. The Investment Company Act of 1940 requires open-end investment companies to publish the valuations of their portfolio securities daily. Some of these companies have portfolios consisting of restricted securities, but also have unrestrictions securities of the same class traded on a securities exchange. In recent years the number of restricted securities in such portfolios have increased. The following methods have been used by investment companies in the valuation of such restricted securities:

(a) Current market price of the unrestricted stock less a constant percentage discount based on purchase discount;
(b) Current market price of unrestricted stock less a constant percentage discount different from purchase discount;
(c) Current market price of the unrestricted stock less a discount amortized over a fixed period;
(d) Current market price of the unrestricted stock; and
(e) Cost of the restricted stock until it is registered.

The SEC ruled in its Investment Company Act Release No. 5847, dated October 21, 1959, that there can be no automatic formula by which an investment company can value the restricted securities in its portfolio. Rather, the SEC has determined that it is the responsibility of the board of directors of the particular investment company to determine the "fair value" of each issue of restricted securities in good faith.

.02 Institutional Investors Study. Pursuant to Congressional direction, the SEC undertook an analysis of the purchases, sales, and holdings of securities by financial institutions, in order to determine the effect of institutional activity upon the securities market. The study report was published in eight volumes in March 1971. The fifth volume provides an analysis of restricted securities and deals with such items as the characteristics of the restricted securities purchasers and issuers, the size of transactions (dollars and shares), the marketability discounts on different trading markets, and the resale provisions.

This research project provides some guidance for measuring the discount in that it contains information, based on the actual experience of the marketplace, showing that, during the period surveyed (January 1, 1956, through June 30, 1969), the amount of discount allowed for restricted securities from the trading price of the unrestricted securities was generally related to the following four factors.

(a) Earnings. Earnings and sales consistently have a significant influence on the size of restricted securities discounts according to the study. Earnings played the major part in establishing the ultimate discounts at which these stocks were sold from the current market price. Apparently earnings pattern, rather than sales patterns, determine the degree of risk of an investment.

(b) Sales. The dollar amount of sales of issuers' securities also has a major influence on the amount of discount at which restricted securities sold from the current market price. The results of the study generally indicate that the companies with the lowest dollar amount of sales during the test period accounted for most of the transactions involving the highest discount rates, while their accounts for only a small portion of all transactions involving the lowest discount rates.

(c) Trading Market. The market in which publicly held securities are traded also reflects variances in the amount of discount that is applied to restricted securities purchases. According to the study, discount rates were greatest on restricted stocks with unrestricted counterparts traded over-the-counter, followed by those with unrestricted counterparts listed on the American Stock

continued on next page
Revenue Ruling 77-287 (continued)

Exchange, while the discount rates for those stocks with unrestricted counterparties listed on the New York Stock Exchange were the smallest.

(5) Resale Agreement Provisions. Resale agreement provisions often affect the size of the discount. The discount from the market price provides the main incentive for a potential buyer to acquire restricted securities. In judging the opportunity cost of freezing funds, the purchaser is analyzing two separate factors. The first factor is the risk that underlying value of the stock will change in a way that, absent the restrictive provisions, would have prompted a decision to sell. The second factor is the risk that the contemplated resale of legally disposed of the stock may not materialize. From the seller’s point of view, a discount is justified where the seller is relieved of the expenses of registration and public distribution, as well as of the risk that the market will adversely change before the offering is completed. The ultimate agreement between buyer and seller is a reflection of these and other considerations. Relative bargaining strengths of the parties to the agreement are major considerations that influence the resale terms and consequently the size of discounts in restricted security transactions. Certain provisions are often found in agreements between buyer and sellers that affect the size of discounts at which restricted stocks are sold. Several such provisions follow, all of which, other than number (3), would tend to reduce the size of the discount:

1. A provision giving the buyer an option to “piggyback,” that is, to register restricted stock with the next registration statement, if any, filed by the issuer with the SEC;
2. A provision giving the buyer an option to require registration at the seller’s expense;
3. A provision giving the buyer an option to require registration, but only at the buyer’s own expense;
4. A provision giving the buyer a right to receive continuous disclosure of information about the issuer from the seller;
5. A provision giving the buyer a right to select one or more directors of the issuer;
6. A provision giving the buyer an option to purchase additional shares of the issuer’s stock; and
7. A provision giving the buyer the right to have a greater voice in operations of the issuer, if the issuer does not meet previously agreed upon operating standards.

Institutional buyers can and often do obtain many of these rights and options from the sellers of restricted securities, and naturally, the more rights the buyer can acquire, the lower the buyer’s risk is going to be, thereby reducing the buyer’s discount as well. Small buyers may not be able to negotiate the large discounts or the rights and options that volume buyers are able to negotiate.

31 Summary. A variety of methods have been used by the securities industry to value restricted securities. The SEC rejects all automatic or mechanical solutions to the valuation of restricted securities, and prefers, in the case of the valuation of investment company portfolio stocks, to rely upon good faith valuations by the board of directors of each company. The study made by the SEC found that restricted securities generally are issued at a discount from the market value of freely tradable securities.

Sec. 5 Facts and Circumstances Material to Valuation of Restricted Securities.

51 Frequently, a company has a class of stock that cannot be traded publicly. The reason such stock cannot be traded may arise from the securities statutes, as in the case of an “investment letter” restriction; it may arise from a corporate charter restriction, or perhaps from a trust agreement restriction. In such cases, certain documents and facts should be obtained for analysis.

52 The following documents and facts, when used in conjunction with those discussed in Section 4 of Rev. Rul. 59-60, will be useful in the valuation of restricted securities:

(a) A copy of any declaration of trust, trust agreement, and any other agreements relating to the shares of restricted stock;

(b) A copy of any document showing any offers to buy or sell or indications of interest in buying or selling the restricted shares;

(c) The latest prospectus of the company;

(d) Annual reports of the company for 3 to 5 years preceding the valuation date;

(e) The trading prices and trading volume of the related class of traded securities 1 month preceding the valuation date, if they are traded on a stock exchange (if traded over-the-counter, prices may be obtained from the National Quotations Bureau, the National Association of Securities Dealers Automated Quotations (NASDAQ), or sometimes from broker-dealers making markets in the shares);

(f) The relationship of the parties to the agreements concerning the restricted stock, such as whether they are members of the immediate family or perhaps whether they are officers or directors of the company; and

(g) Whether the interest being valued or represents a majority ownership.

Sec. 6 Weighting Facts and Circumstances Material to Restricted Stock Valuation.

All relevant facts and circumstances that bear upon the worth of restricted stock, including those set forth above in the preceding Sections 4 and 5, and those set forth in Section 4 of Rev. Rul. 59-60, must be taken into account in arriving at the fair market value of such securities. Depending on the circumstances of each case, certain factors may carry more weight than others. To illustrate:

51 Earnings, net assets, and net sales must be given primary consideration in arriving at appropriate discount for restricted securities from the freely traded shares. These are the elements of value that are always used by investors in making investment decisions. In some cases, one element may be more important than in other cases. In the case of manufacturing, producing, or distributing companies, primary weight must be accorded earnings and net sales; but in the case of investment or holding companies, primary weight must be given to the net assets of the company underlying the stock. In the former type of companies, value is more closely linked to past, present, and future earnings while in the latter type of companies, value is more closely linked to the existing net assets of the company. See the discussion in Section 5 of Rev. Rul. 59-60.

52 Resale provisions found in the restriction agreements must be scrutinized and weighted to determine the amount of discount to apply the preliminary fair market value of the company. The two elements of time and expense are upon this discount; the longer the buyer of the shares must wait to liquidate the shares, the greater the discount. Moreover, if the provisions make it necessary for the buyer to bear the expense of registration, the greater the discount. However, if the provision of the restricted stock agreement makes it possible for the buyer to “piggyback” shares at the next offering, the discount would be smaller.

53 The relative negotiation strength of the buyer and seller of restricted stock may have a profound effect on the amount of discount. For example, a tight money situation may cause the buyer to have a greater balance of negotiation strength in a transaction. However, in some cases the relative strengths may tend to cancel each other out.

54 The market experience of freely tradable securities of the same class as the restricted securities is also significant in determining the amount of discount. Whether the shares are privately held or publicly traded affects the worth of the shares to the holder. Securities traded on a public market generally are worth more to investors than those that are not traded on a public market. Moreover, the type of public market in which the unrestricted securities are traded is to be given consideration.

Sec. 7 Effect on Other Documents.

Rev. Rul. 59-60, as modified by Rev. Rul. 65-193, is amplified.

Studies of Private Transactions before Initial Public Offerings

Before the 1980s, virtually all the empirical research directed at quantifying the value impact of marketability (or the discount for lack of marketability) focused on comparisons between the prices (1) of freely tradable shares of stock and (2) of restricted but otherwise identical shares of stock. There is a general consensus among analysts that price discounts for lack of marketability for ownership interests of closely held companies were greater than those for restricted shares of publicly held companies. This is because the closely held ownership interests had no established market in which they could eventually sell following the removal of certain trading restrictions. However, data for quantifying how much greater this price discount should be had not yet been collected and analyzed.

During the 1980s, an investment banking firm and a valuation consulting firm independently undertook the assemblage of data with which to address this question. The research proceeded along basically parallel lines, although each firm was unaware of the other’s efforts until their respective research was far along and each had enough data to reach some conclusions.

Both firms used data from registration statements, forms that companies must file with the SEC when they sell securities to the public. Each of the series of studies reported in the following sections used data from these forms in order to analyze prices of the private transactions relative to the public offering prices and market prices following initial public offerings.

Robert W. Baird & Company Studies

Eight studies were conducted under the direction of John D. Emory, first vice president of appraisal services at Robert W. Baird & Company, a regional investment banking firm headquartered in Milwaukee. The studies covered various time periods from 1981 through 2000.

The basic methodology for the eight studies was identical. The population of companies in each study consisted of initial public offerings during the respective period in which Baird & Company either participated or received prospectuses. The prospectuses of these over 2,200 offerings were analyzed to determine the relationship between (1) the price at which the stock was initially offered to the public and (2) the price at which the latest private transaction occurred up to five months prior to the initial public offering.

Emory gives the following explanation regarding the studies:

In order to provide a reasonable comparison of prices before and at the IPO, I felt it necessary both for the company to have been reasonably sound, and for the private transaction to have occurred within a period of five months prior to the offering date.

The transactions primarily took one of two forms: (1) the granting of stock options with an exercise price equal to the stock's then fair market value; or (2) the sale of stock.... In most cases, the transactions were stated to have been, or could reasonably be expected to have been, at fair market value. All ultimately would have had to be able to withstand SEC, IRS or judicial review, particularly in light of the subsequent public offering.24

Following the above guidelines, and after eliminating development-stage companies (i.e., companies with a history of operating losses) and companies with no transactions within the five months before the initial public offering, 310 qualifying transactions remained in the eight studies.

The mean price discount for the 543 transactions was 46 percent, and the median price discount was 47 percent. The fact that these averages are a little more than 10 percentage points greater than those shown in restricted stock studies is about what one might reasonably expect. This is because the transactions occurred when there was not yet any established market for the stocks at all.

A summary of the results of each of the eight Emory studies is presented as Exhibit 17–9.

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### Exhibit 17–9

**The Value of Marketability as Illustrated in Initial Public Offerings of Common Stock**

<table>
<thead>
<tr>
<th>Study</th>
<th>Number of IPO Prospectuses Reviewed</th>
<th>Number of Qualifying Transactions</th>
<th>Discount Mean</th>
<th>Discount Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997-2000</td>
<td>1847</td>
<td>266</td>
<td>50</td>
<td>52</td>
</tr>
<tr>
<td>1995-97</td>
<td>732</td>
<td>84</td>
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<td>41</td>
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<tr>
<td>1994-95</td>
<td>318</td>
<td>45</td>
<td>45</td>
<td>47</td>
</tr>
<tr>
<td>1991-93</td>
<td>443</td>
<td>49</td>
<td>45</td>
<td>13</td>
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<tr>
<td>1990-92</td>
<td>266</td>
<td>30</td>
<td>34</td>
<td>33</td>
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<tr>
<td>1989-90</td>
<td>157</td>
<td>17</td>
<td>46</td>
<td>40</td>
</tr>
<tr>
<td>1987-89</td>
<td>98</td>
<td>21</td>
<td>38</td>
<td>43</td>
</tr>
<tr>
<td>1985-86</td>
<td>130</td>
<td>19</td>
<td>43</td>
<td>43</td>
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<tr>
<td>1980-81</td>
<td>97</td>
<td>12</td>
<td>59</td>
<td>68</td>
</tr>
<tr>
<td>All 8 studies</td>
<td>2,241</td>
<td>543</td>
<td>46%</td>
<td>47%</td>
</tr>
</tbody>
</table>


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Willamette Management Associates Studies

Over many years, Willamette Management Associates has conducted a series of studies on the prices of private stock transactions relative to those of subsequent public offerings of stock of the same companies. The studies covered the years 1975 through 2002.

The Willamette Management Associates studies differed from the Emory studies in several respects. One important difference was that the source documents for the Willamette Management Associates studies were complete SEC registration statements primarily on Form S-1 and Form S-18. By contrast, the source documents for the Emory studies were prospectuses. Although the prospectus constitutes a portion of the registration statement, it is required to disclose only transactions with affiliated parties. Form S-1 and Form S-18 registration statements require disclosure of all private transactions in the stock within the three years before the public offering, in a section of the registration statement separate from the prospectus portion.

The Willamette Management Associates studies attempted to include only transactions that were on an arm's-length basis. The data analyzed included sales of stock in private placements and repurchases of treasury stock by the companies. All stock option transactions and sales of stock to corporate insiders were eliminated, unless there was reason to believe they were bona fide transactions for full value. Many registrant companies were contacted by telephone to validate the arm's-length nature of the transaction.

The Willamette Management Associates studies considered all public offerings in the files of the IPO Reporter. According to the IPO Reporter, they included all public offerings during the respective period except for offerings of closed-end fund companies. Eliminated from each of the studies were financial institutions, natural resource companies, offerings priced at $1 or less per share, and offerings that included units or warrants since such offerings might be thought to have unique characteristics. The private transactions analyzed took place from 1 to 36 months before the initial public offering. If a company had more than one transaction that met the study's criteria, all such transactions were included.

For each transaction for which meaningful earnings data were available in the registration statement as of both the private transaction and public offering dates, the price/earnings multiple of each private transaction was compared with the subsequent public offering price/earnings multiple. Companies that had no meaningful earnings as of the private transaction date and/or the public offering date were eliminated.

Because the private transactions occurred over a period of up to three years prior to the public offering, Willamette Management Associates made adjustments to reflect differences in market conditions for stocks of the respective industries between the time of each private transaction and the time of each subsequent public offering. Price/earnings multiples were adjusted for differences in the industry average price/earnings multiple between the time of the private transaction and that of the public offering.

The formula used to derive the discount for the private transaction price from the public offering price was as follows:

$$\frac{P/E_0 - P/E_0 \left(\frac{IP/E_0}{IP/E_p}\right)}{P/E_0}$$
where:
\[ P/E_o = \text{Price per share of the public offering} \]
\[ P/E_p = \text{Price per share of the private transaction} \]
\[ IP/E_o = \text{Industry price index at time of offering} \]
\[ IP/E_p = \text{Industry price index at time of private transaction} \]

Between 1975 and 1997, the Willamette Management Associates’ studies indicated mean discounts that ranged from 28.9 percent (1991) to 56.8 percent (1979), and median discounts that ranged from 31.8 percent (1991) to 73.1 percent (1984). Willamette Management Associates’ 1998 pre-IPO study indicated a mean discount for lack of marketability (DLOM) of 35 percent and a median of 49.4 percent.

The DLOM conclusions in Willamette Management Associates’ 1999 and 2000 studies were lower than the long-term trends and conclusions of other analysts. For example, the Emory studies for those years showed a mean discount of 50 percent and a median discount of 52 percent, whereas the Willamette Management Associates’ study returned only a mean discount of 26.4 percent and median discount of 27.7 percent in 1999 and a mean discount of 18.0 percent and median discount of 31.9 percent in 2000.

Willamette Management Associates has indicated that it believes the low conclusions could be the result of three factors. First, few IPO companies and private sale transactions qualified for inclusion in Willamette Management Associates’ study. Second, the height of the dot.com “bubble” occurred during this two-year period. Lastly, the average first-day returns for pre-IPO stocks were extraordinarily high in 1999 and 2000.\(^2\)

The Willamette Management Associates’ DLOM conclusions for 2001 and 2002 were also inconsistent with their previously published pre-IPO studies. The 2001 DLOM conclusions had a mean and median of negative 195.8 percent. The mean DLOM conclusion for 2002 was 55.8 percent, which was abnormally high when compared with the mean DLOM conclusions of the decade prior to 1999. These results can be explained by the fact that there were too few private market stock sale transactions in 2001 and 2002 that met the Willamette Management Associates’ criteria for the study results to be statistically meaningful—there were only two private market sale transactions in 2001, and only seven in 2002 that qualified.

**Criticisms of Willamette Management Associates Studies**

Over the years that Willamette Management Associates has used pre-IPO studies in support of the estimation of the lack of marketability discount, the work has been the subject of certain criticisms. In the following discussion, we will attempt to respond to some of these criticisms.

1. *The results are impossible to verify because Willamette Management Associates will not provide the underlying data or calculation.* The analyses are performed in response to individual client situations at great expense and

are proprietary. However, (1) they are based entirely on publicly available data, and (2) all the calculations can be replicated when needed, as the methodology is set forth in detail in several books and articles published by Willamette Management Associates professional staff.

2. There is a self-selection bias in the determination of “qualifying transactions,” resulting in an overestimation of the discount for lack of marketability by excluding “troubled” companies. The Willamette Management Associates studies exclude, by definition, companies that fail, or fail to go public. This is obvious because only companies that go public create a benchmark of liquidity for minority ownership interest shares. Conversely, companies that do not go public are useless for the purpose of deriving a marketable stock price. In order to estimate the lack of marketability discount, one should have a benchmark for comparison (i.e., a marketable price to compare with the nonmarketable price).

If there was a bias based upon the fact that the Willamette Management Associates studies include only “successful” companies, it would understated the size of the lack of marketability discount. One would expect a “troubled” company to be less liquid than a “successful” company, with fewer options for liquidity resulting in a greater lack of marketability discount.

An argument has been made that the less successful company may trade at a price below the price realized in an earlier transaction (presumably resulting in a premium, or negative lack of marketability discount). This may be true at first glance. However, since we adjust the pricing for changes in the price/earnings multiple, the resulting lack of marketability discount is more reliable. In other words, the exclusion of “troubled” companies, while necessary and logical, does not necessarily lead to an overestimation of the lack of marketability discount.

3. Many of the transactions are not arm’s-length transactions. A comprehensive effort is made to eliminate non-arm’s-length transactions. Each of the transactions included in the database has also passed the scrutiny of the SEC. Although the level of effort that Willamette puts forth to verify the validity of the arm’s-length nature of the pre-IPO transaction is subject to challenge, the small number of non-arm’s-length transactions that may have been inadvertently included would not skew the results.

Valuation Advisors Studies

Studies published using the Valuation Advisors’ database break down the number of transactions by length of time that the private transaction occurred prior to the IPO: 1–90 days prior, 91–180 days prior, 181–270 days prior, 271–365 days prior, and 1–2 years prior. Results for years 1999–2004 are shown in Exhibit 17–10.

Summary of Conclusions from Private Transaction Studies

The evidence from the Emory, Willamette Management Associates, and Valuation Advisors studies, taken together, is compelling. The studies covered hundreds of transaction over more than 30 years. Average differentials between private transaction prices and public market prices varied under different market conditions, ranging from about 40 percent to 72 percent, after eliminating the outliers.
This is very strong support for the hypothesis that the fair market values of noncontrolling ownership interests in privately held businesses usually are greatly discounted from their publicly traded counterparts.

Other Analysis of Discounts for Lack of Marketability for Minority Ownership Interests

Ultimately, of course, the value of the nonmarketable, minority ownership interest is the present value of the benefits it will produce for its owner. This fact is recognized in the Quantitative Marketability Discount Model (QMDM). The model simply estimates a time horizon at which the interest will be liquidated, a liquidating price based on annual percentage growth in value from the valuation date, and interim cash flows to the holder.

These estimated values are discounted back to a present value in the QMDM at a discount rate that is higher than the normal discount rate for cash flows for the subject company to reflect the illiquidity and extra uncertainty of being “locked up” for an indeterminate time. There are several factors to consider, and approximate percentage points for each factor add to the discount rate.

The model is sound, but the inputs require substantial subjective estimation. It is useful for identifying situations where the discount should be significantly above or below the averages shown by the restricted stock or pre-IPO studies.

The book Quantifying Marketability Discounts also analyzes some of the studies discussed in this chapter in detail.

Discounts for Lack of Marketability for Controlling Ownership Interests

It is often necessary to agree on the cash equivalent value as of a valuation date for a controlling business ownership interest. This is true whether or not the business will actually be sold. Examples of situations where this cash equivalency analysis is necessary include federal estate tax cases (in the case of a death of the controlling business owner) and many marital property cases (in the case of a marital dissolution).

Federal estate taxes, by law, require a cash equivalency value as of a date certain. The estate taxes themselves are paid in cash, not in kind by tendering shares of stock. Therefore, many analysts make an adjustment from the estimated (but uncertain) sale value of the subject controlling business interest at some undetermined time in the future to a cash equivalency value as of the valuation date, reflecting the time, costs, and risks attendant to achieving such a sale. And, of these three factors, the risk of actually being able to consummate the business sale is typically much more significant than the timing and the costs of the business sale.

This valuation adjustment, or discount, is the discount for illiquidity (i.e., the discount for lack of marketability of the controlling business ownership interest).

---

<table>
<thead>
<tr>
<th>Time of Transaction Before IPO</th>
<th>1-90 Days</th>
<th>91-180 Days</th>
<th>181-270 Days</th>
<th>271-365 Days</th>
<th>1-2 Years</th>
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<tbody>
<tr>
<td><strong>1999 Results</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Transactions</td>
<td>148</td>
<td>174</td>
<td>103</td>
<td>91</td>
<td>174</td>
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<td>Median Discount</td>
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<td>53.9%</td>
<td>75.0%</td>
<td>76.9%</td>
<td>82.0%</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Transactions</td>
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<td>116</td>
<td>91</td>
<td>141</td>
</tr>
<tr>
<td>Median Discount</td>
<td>28.7%</td>
<td>45.1%</td>
<td>61.5%</td>
<td>68.9%</td>
<td>76.6%</td>
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<td></td>
<td></td>
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<tr>
<td>Number of Transactions</td>
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<td>18</td>
<td>17</td>
<td>48</td>
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<td>33.2%</td>
<td>33.4%</td>
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<td>51.6%</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Transactions</td>
<td>9</td>
<td>13</td>
<td>7</td>
<td>16</td>
<td>36</td>
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<td>Median Discount</td>
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<td>17.3%</td>
<td>21.9%</td>
<td>39.5%</td>
<td>55.0%</td>
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<td><strong>2003 Results</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Transactions</td>
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<td>21</td>
<td>44</td>
</tr>
<tr>
<td>Median Discount</td>
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<td>38.4%</td>
<td>39.7%</td>
<td>61.4%</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Transactions</td>
<td>37</td>
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<td>63</td>
<td>59</td>
<td>101</td>
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<tr>
<td>Median Discount</td>
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<td>22.7%</td>
<td>40.0%</td>
<td>56.3%</td>
<td>57.9%</td>
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<td><strong>2005 Results</strong></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Number of Transactions</td>
<td>18</td>
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<td>58</td>
<td>62</td>
<td>99</td>
</tr>
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<td>26.1%</td>
<td>41.7%</td>
<td>46.1%</td>
<td>45.5%</td>
</tr>
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<td><strong>2006 Results</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Number of Transactions</td>
<td>25</td>
<td>76</td>
<td>69</td>
<td>72</td>
<td>106</td>
</tr>
<tr>
<td>Median Discount</td>
<td>20.7%</td>
<td>20.8%</td>
<td>40.2%</td>
<td>46.9%</td>
<td>57.2%</td>
</tr>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Transactions</td>
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<td>611</td>
<td>458</td>
<td>429</td>
<td>749</td>
</tr>
<tr>
<td>Median Discount</td>
<td>27.3%</td>
<td>37.5%</td>
<td>51.5%</td>
<td>61.7%</td>
<td>68.0%</td>
</tr>
</tbody>
</table>

SOURCE: The Valuation Advisors' Discount for Lack of Marketability Database. Database access is available at www.bvmarketdata.com. Used with permission. All rights reserved.

In many reported decisions, the U.S. Tax Court has recognized that discounts for lack of marketability for controlling ownership interests in closely held companies are appropriate. The courts have used language such as the following:

Even controlling shares in a nonpublic corporation suffer from lack of marketability because of the absence of a ready private placement market and the fact that flotation costs would have to be incurred if the corporation were to publicly offer its stock.27

Similarly, in the marital dissolution situation, the spouse most actively involved in the closely held business usually gets the controlling ownership interest in the business. And the nonoperating spouse usually gets much more liquid assets, such as cash, marketable securities, and real estate.

A rational argument can be made that the same factors discussed above should be reflected in the value of the illiquid controlling business ownership interest for marital dissolution valuation purposes.

Illiquidity Factors Affecting Controlling Ownership Interests

Unlike the owner of publicly traded securities, the owner of a controlling ownership interest in a closely held business cannot (1) call a securities broker, (2) sell that controlling ownership interest in seconds at a predetermined price and with a nominal transaction commission, and (3) realize the cash proceeds of the sale in three business days. Rather, selling a controlling business ownership interest is a lengthy, expensive, and uncertain undertaking. This assertion is equally true even if the subject investment is a 100 percent (i.e., absolute controlling) ownership interest in a closely held business enterprise.

The typical means of liquidating a controlling business ownership interest are as follows:

1. Consummate a public offering of the controlling block of stock.
2. In a private transaction:
   a. Sell the overall business enterprise (and equitably allocate the sale proceeds to all of the business owners).
   b. Sell the controlling ownership interest only (to the other minority ownership stockholders or to an independent third-party buyer).

Under various conditions in the public capital markets for stocks and the merger/acquisition markets for companies, one or more of the above transactional alternatives may be clearly more or less attractive—at any given point. The values realizable from these transactional alternatives usually have some relationship to each other. This is because potential acquirers of a closely held business may be public companies.

The controlling owner of a closely held business who wishes to liquidate his or her controlling ownership interest generally faces the following transactional considerations:

1. Uncertain time horizon to complete the offering or sale.
2. Cost to prepare for and execute the offering or sale.
3. Risk concerning eventual sale price.
4. Noncash and deferred transaction proceeds.
5. Inability to hypothecate.

**Time Horizon.** It may take many months, and in some cases years, to complete either an offering or a sale of a closely held business. To some extent, the time factor may be offset by cash flows available to the owner awaiting sale, if they are equal to or greater than the company’s cost of capital on a stand-alone basis.

**Costs.** There will be many costs attendant to the sale:

1. Auditing and accounting fees, to provide potential buyers the financial information and assurances they demand.
2. Legal costs, at a minimum to draft all the necessary documents and often to clear away potential perceived contingent liabilities and/or to negotiate warranties.
3. Administrative costs on the part of business owners to deal with the accountants, lawyers, potential buyers, and/or their representatives.

**Risk.** There is a high degree of risk concerning the amount of the actual sale price that will be realized relative to the estimated sale price. This is (1) partly because business valuations are only estimates and (2) partly because internal and/or external factors may influence the business value during the sale negotiation period.

Furthermore, in many cases, there is substantial risk concerning whether the business can be sold at all. There is always considerable risk as to whether a transaction or an initial public offering can actually be completed at any given stock price. The capital markets are more or less receptive to stocks of companies in different industries at different points. And, some closely held companies will not be accepted by the public markets at all.

**Form of the Proceeds.** Even when a sale is complete, the business sale proceeds may not be all in cash. Often, the seller may receive part of the business sale proceeds in a note or contingent compensation, or in stock of the acquiring company (and usually restricted stock if the acquiring company is a publicly traded company).

From 1975 to 1980, almost half the reported business acquisitions were for all cash. In 1999, about 46 percent of the business acquisitions were all cash, 30 percent were all stock, and 24 percent were some combination of cash, debt, and stock. In most of these cases, the stock received is restricted stock. Accordingly, the cash equivalency value of a closely held business sale transaction may be substantially lower than the announced deal price.

For closely held company sales through business brokers, seller financing through a note is involved in the vast majority of transactional cases. Usually, these seller paper notes are at interest rates below market rates for notes of comparable risk. Furthermore, many close corporation “deal prices” have a portion of the payments contingent on given levels of revenues or earnings, further reducing the cash equivalency value.

In the initial public offering transaction scenario, normally it is not possible to sell 100 percent of the company's stock at one time. Underwriters generally are not willing to sell an offering in which insiders are bailing out of all their stock. Thus, the closely held business seller usually is left with some unregistered (restricted) stock. This stock would still be subject to the discount for lack of marketability for restricted stocks as discussed in an earlier section.

**Inability to Hypothecate.** Ownership interests in closely held businesses, even controlling ownership interests, generally do not make satisfactory bank collateral. If, while awaiting a sale, an owner of a controlling ownership interest wants cash for an emergency or an opportunity or whatever, it will be time-consuming—and may be impossible—to borrow against the estimated value of the business interest.

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**Benchmark for the Illiquidity Discount for Controlling Ownership Interests**

If the appropriate standard of value is fair market value, the price ultimately expected to be reached between “a willing buyer and a willing seller”—before the costs and risks listed above are considered—is a benchmark from which the

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illiquidity discount could be taken. Other possibilities concerning the appropriate base from which an illiquidity discount on a controlling business ownership interest basis should be taken are:

1. The price one might receive in an initial or secondary public stock offering (i.e., the publicly traded equivalent value).
2. The price achievable in the private sale of the entire closely held business enterprise.
3. A control transaction of a publicly-funded company.

In addition to the underwriting commissions and the direct expenses, underwriters frequently receive stock warrants, especially in connection with smaller initial public offerings. Although this is not an immediate cash expense, it is a very real cost of the transaction if the company is successful, possibly amounting to several percentage points of dilution.

There are also other indirect transaction costs, such as a large commitment of top management's time to negotiate and to carry out a successful stock offering. If the illiquidity discount is a critical issue in the subject business valuation, it may be appropriate to obtain the most current data with regard to the cost of a public flotation.

Many of the same or similar costs are involved in preparing a company for a private sale. In addition, the cost of an intermediary to effect the sale may need to be considered. Also, if the benchmark for the estimated sale price is valuation multiples observed in acquisitions of public companies, data indicate that valuation multiples for acquisitions of private companies tend to be lower. This pricing phenomenon is discussed in the following section.

Differences between Private and Public Company Acquisition Price/Earnings Multiples

Every year, Mergerstat Review publishes a table presenting the average price/earnings multiples for the acquisitions of private companies for which they have data—compared with the average price/earnings multiples for the acquisitions of companies that had been publicly traded. Almost every year, the average price/earnings multiple for the acquisitions of private companies is significantly lower than the average price/earnings multiple for the acquisitions of public companies.

The public versus private acquisition price/earnings multiple table from the 2000 Mergerstat Review is presented in Exhibit 17–11.

Observers have hypothesized a number of reasons for this consistent and significant acquisition pricing differential. The most common reasons for this phenomenon are as follows:

1. Exposure to the market.
2. The quality of financial accounting and other information.
3. The size effect.

Exposure to the Market. The names and stock prices of publicly traded companies are published in hundreds of newspapers throughout the world every day. Publicly traded companies also issue many press releases every year with quarterly earnings and other information; these press releases are also published in hundreds of newspapers. Financial information on thousands of publicly traded companies is accessible online.
### Median P/E* Offered Public versus Private 1990–2005

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<th>Year</th>
<th>Acquisitions of Public Companies</th>
<th>Acquisitions of Private Companies</th>
</tr>
</thead>
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<td>13.2 (36)</td>
</tr>
<tr>
<td>1991</td>
<td>15.9 (93)</td>
<td>8.5 (23)</td>
</tr>
<tr>
<td>1992</td>
<td>18.1 (89)</td>
<td>17.6 (15)</td>
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<tr>
<td>1993</td>
<td>19.7 (113)</td>
<td>22.0 (14)</td>
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<tr>
<td>1994</td>
<td>19.8 (184)</td>
<td>22.0 (18)</td>
</tr>
<tr>
<td>1995</td>
<td>19.4 (239)</td>
<td>15.5 (16)</td>
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<td>1996</td>
<td>21.7 (288)</td>
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<td>1997</td>
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</tr>
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<td>1998</td>
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<td>1999</td>
<td>21.7 (434)</td>
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<td>2001</td>
<td>16.7 (261)</td>
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<td>2002</td>
<td>19.7 (161)</td>
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<td>2004</td>
<td>22.6 (188)</td>
<td>19.0 (168)</td>
</tr>
<tr>
<td>2005</td>
<td>24.4 (230)</td>
<td>16.9 (127)</td>
</tr>
</tbody>
</table>

* Denotes number of transactions reporting P/E.

*Excludes negative P/E multiples and P/E multiples larger than 100.


Publicly traded companies are required to file Forms 10-K, 10-Q, and 8-K, as well as other detailed financial information, with the SEC. Any company, or financial intermediary, interested in an acquisition in any industry has this list of publicly traded companies and the detailed financial information on them at its fingertips.

By contrast, there is no such comprehensive and reliable listing of closely held businesses. And privately owned businesses normally do not disclose financial data. Many privately owned businesses do not even disclose gross revenues. Therefore, acquisition seekers do not have privately owned businesses constantly exposed to them.

Business buyers have difficulty making a comprehensive list of available closely held businesses even if they attempt to do so. Generally, business buyers cannot get financial information regarding closely held businesses—short of a direct approach to the subject business, which they are often reluctant to take and which is often rebuffed. Often, private company sales are initiated by the seller, which may put downward pressure on the price paid for the private company.

**Quality of Financial Accounting and Other Information.** The SEC requirements for accounting information and other disclosures are far more stringent and extensive than what is required for an unqualified audit opinion under normal generally accepted accounting practices (GAAP) rules. Many analysts believe that this difference in the quantity and reliability of financial data has an impact on the differential in average price/earnings multiples paid for the acquisition of public companies versus the acquisition of private companies.

**Size Effect.** Empirical studies have proven that larger companies tend to be less risky than smaller companies. This phenomenon would generally result in a
lower present value discount rate and a higher price for larger companies. On average, the privately owned companies reported in Mergerstat Review are smaller in size than the publicly traded companies reported in Mergerstat Review.

This appears to be a contributing factor to the price/earnings multiple differential between privately owned and publicly traded company acquisitions reported in the Mergerstat Review. However, it is highly questionable whether this difference in average acquisition size is significant enough to account for the large magnitude of difference between privately owned and publicly traded company acquisition price/earnings multiples.

It is not possible, with the data currently available, to completely explain the relative impact of the various influences that cause privately owned business acquisitions to trade at much lower price/earnings multiples than publicly traded company acquisitions. In any case, the data are clear that privately owned businesses realize lower acquisition price/earnings multiples, on average, when compared with publicly traded companies. Additional research on this point is clearly warranted. Nonetheless, the three factors listed above (i.e., exposure to market, quality of financial accounting, and size effect) generally explain this phenomenon.

If the analysis of the value of a controlling ownership interest in a privately owned business is based on market prices for the acquisitions of publicly traded companies, these data suggest that some amount of valuation adjustment is applicable. For convenience, we may refer to this valuation phenomenon as a part of the illiquidity discount of a controlling business ownership interest.

Empirical data clearly suggest that a valuation discount is appropriate for controlling ownership interests (and, for that matter, for 100 percent ownership interests) in closely held businesses. This illiquidity discount applies—although to varying degrees—regardless of whether the subject business is valued by reference to discounted or capitalized economic income analyses, to guideline publicly traded companies, to consummated guideline acquisitions, or to an asset-based valuation method.

There is some empirical research supporting the notion that private companies sell for discounts relative to public companies.

Fuller, Netter, and Stegemoller studied the stock market returns of firms that acquired public and private targets over the period 1990 through 2000. They interpreted their results as supporting the idea of a liquidity discount for acquisitions of private companies, though they did not quantify the magnitude of the discount.

Koeplin, Sarin, and Shapiro compared controlling transaction multiples paid for privately held companies with a matching sample of publicly traded companies over the period 1984 through 1998. They examined multiples of enterprise value to EBIT, EBITDA, sales, and "book value" (book debt plus book equity). They calculated enterprise value as the offering price of equity plus book value of debt and preferred stock, less marketable securities. They found that median private deal multiples for domestic U.S. transactions were 0 percent to 31 percent smaller than median public multiples, depending on the multiple chosen for comparison. The median enterprise value/EBITDA ratio paid for private domestic companies in their samples was 18 percent lower than the median public company. For foreign transactions, the difference in median multiples ranged from 6 percent to 23 percent.29

Factors That Affect the Discounts for Illiquidity and Lack of Marketability

It is important to recognize that the discounts for illiquidity and lack of marketability are not a black-and-white issue. That is, an ownership interest is not necessarily simply "marketable," freely tradable in a public market, or "nonmarketable," not freely tradable. There are degrees of marketability. These degrees of marketability depend on the circumstances in each case.

The following are some of the factors that affect the degree of marketability. Although there is no empirically supported formula to assess the impact of each, consideration of these factors should guide the analyst's judgment about where the subject ownership interest should fall within the reasonable range of discounts for illiquidity and lack of marketability.

"Put" Rights

Generally, the most powerful factor that could reduce or eliminate a discount for lack of marketability would be the existence of a "put" right. A put is a contractual right that entitles the holder, at his or her option, to sell the ownership interest to a specified party at some time or under some specified circumstances, at the price (or mechanism for determining the price) specified in the contract. In other words, a put guarantees a market under specified circumstances. Put rights are most commonly found in connection with employee stock ownership plan (ESOP)-owned stock.

Dividend Payments

Stocks with no or low dividends suffer more from lack of marketability than stocks with high dividends. Besides being empirically demonstratable, this makes common sense. If the stock pays no dividend, the holder is dependent entirely on some future ability to sell the stock to realize any return. The higher the dividend, the greater the return that the holder realizes without regard for sale of the stock. For this reason, dividend-paying preferred stocks would typically be subject to a lower discount for lack of marketability than non-dividend-paying common stocks.

Potential Buyers

The existence of a reasonable number of potential buyers or even one strong potential buyer (often as demonstrated by past activity in the company's stock) could dampen the discounts for lack of marketability. For example, if an ESOP regularly purchases shares, the possibility of sometime selling shares to the ESOP may cause the discount for lack of marketability to be less than if the ESOP did not exist.

Size of Interest

Strictly from a marketability perspective, the empirical evidence cited in earlier sections suggests that larger blocks may tend to have larger discounts for lack of
marketability than do smaller blocks. There may be fewer potential buyers for a large block, and a large block transaction may be more difficult to finance.

One may logically conclude that a larger ownership interest may have higher value because of possible elements of ownership control, such as a swing vote position or a seat on the board of directors. However, this is a discount factor different from lack of marketability, as discussed in the previous chapter.

Ashok Abbott has developed a quantitative measure of the discount for lack of liquidity by studying the time it takes for different sizes of blocks of stock to become liquid. This method, while derived from observations of blocks of publicly traded stock, can be adapted to interests in privately held companies by estimating the discount for lack of liquidity for a similar size block using data for the corresponding time period for a peer group of publicly traded firms. Some of the conclusions reached by applying this method are that blocks of all sizes of publicly held stock are not equally liquid and that liquidity can differ significantly even within each market, depending on the attributes of the block and prevailing market conditions. Applying this method, Abbott concludes that as markets become more volatile and the liquidation periods get longer, the discounts for lack of liquidity become larger. Also, he concludes that discounts are not symmetric across the markets, but peak at different times.39

Prospect of Public Offering or Sale of the Business

An imminent public offering or sale of the business could decrease the discount for lack of marketability. However, such prospects are almost never certain, and the degree of offset to the discount for lack of marketability is problematic since much of the empirical evidence that illustrates the discount is taken from companies that subsequently went public. In some cases, even if such an event were to occur, all noncontrolling shareholders may not necessarily have the right to participate.

Conversely, a business being absolutely committed to remaining private and in the hands of current control owners for the foreseeable future would tend to increase the discount for lack of marketability.

Information Access and Reliability

The degree to which information is made available to noncontrolling equity owners and the reliability of that information affects the discount for lack of marketability. For example, a recent article on partnership interest valuations states, "An important basis for illiquidity discounts is the difficulty faced by prospective purchasers in obtaining information."31

31 Mark S. Thompson and Eric S. Spunt, "The Widespread Overvaluation of Fractional Ownership Positions," Trusts & Estates, June 1993, pp. 62–66. See also Michael J. Boletsy, "Adjustments for Differences in Ownership Rights, Liquidity, Information Access, and Information Reliability: An Assessment of 'Prevailing Wisdom' versus the 'Nash Hypotheses,'" Business Valuation Review, September 1991, pp. 94–110. Boletsy's position is that, conceptually, this is a factor separate from marketability, but he recognizes the reality that we have no good way to measure this factor separately.
Restrictive Transfer Provisions

Many closely held stocks are subject to provisions that severely restrict the rights of the holder to transfer stock. Any provision that limits the right of the holder to transfer the stock would tend to increase the amount of the discount for lack of marketability.

In some cases, the restrictive provision may fix the value or put a ceiling on it. The impact of such restrictions is a matter of judgment that should be analyzed in light of the provisions in each case, in some cases with the advice of legal counsel regarding enforceability.

Company Characteristics: Size, Performance, and Risk

Empirical evidence shows that private placement discounts are related to the financial condition of the company. Companies with a history of losses or high leverage tend to issue shares at higher discounts than companies with more solid financial conditions. Discounts tend to be higher for companies with other risk characteristics, including high stock price volatility, unstable earnings, or reliance on a speculative or unproven product line. Perhaps related to the above, larger companies tend to command smaller discounts.

Court Decisions on Discounts for Illiquidity and Lack of Marketability

There is a substantial body of judicial precedent with regard to the identification and quantification of the discounts for illiquidity and lack of marketability. Each of these judicial decisions depends on the facts and circumstances of the particular case in point. Therefore, it is inappropriate to rely on discount data from judicial precedent.

However, it may be useful for analysts to review published judicial precedent with regard to lack of marketability discounts. This review should not be used to extract a particular discount percentage. Rather, it may be used to better understand the various factors that the courts have considered in their estimates of the lack of marketability discounts.

There is a substantial amount of precedent related to lack of marketability discounts with respect to federal gift taxes, estate taxes, and income taxes. These cases are summarized in the Federal Tax Valuation Digest, published annually. Quantifying Marketability Discounts also offers an overview of marketability discounts in the tax court and detailed analysis of four cases.

The topics of illiquidity and lack of marketability arise in many other litigation contexts, including shareholder disputes, marital dissolution cases, and damages matters. One report, *BVR's Guide to DLOM Case Law 2008 Edition* covers (in addition to gift and estate tax cases) other federal and state cases where discounts were an issue in marital dissolutions, corporate disagreements, ESOPs, bankruptcy cases, income tax cases, dissenting stockholder cases, and other litigation.

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33 Mercer, *Quantifying Marketability Discounts*.
Mandelbaum v. Commissioner Reviews Lack of Marketability Factors

In Bernard Mandelbaum, et al. v. Commissioner. The Tax Court listed numerous factors that it considers in its quantification of an appropriate lack of marketability discount.

Valuers beware! The tax courts continue to emphasize the importance of detailed analysis of the closely held company being valued when using the many discount studies that practitioners often rely on to support their conclusions. In Bernard Mandelbaum, et al. v. Commissioner ... the Court cites nine factors to be considered when selecting a discount for lack of marketability, one of the most controversial areas in business valuations. This valuation of minority blocks of Big M, Inc., a closely held chain of women's apparel retail stores, was for gift tax purposes.

With these benchmarks established, the Court presented the following nine factors [among others] that should be considered in determining discounts for lack of marketability:

1. **Financial Statement Analysis**
2. **Company’s Dividend Policy**
4. **Company’s Management**
5. **Amount of Control in Transferred shares**
6. **Restrictions on Transferability of Stock**
7. **Holding Period for Stock**
8. **Company’s Redemption Policy**
9. **Costs Associated with Making a Public Offering**

The Court deserves praise for its willingness to address this important issue, as well as the depth of its analysis, even though some of its conclusions are arguable. The conclusions reached in this case continue a clear trend in the Tax Courts concerning discounts. They no longer seem satisfied by a blind application of discount studies. They want a much more detailed comparison of the particular characteristics of the ownership interest being valued with the characteristics of the companies that make up the studies, whether individually or in the aggregate.

Estate of Barge v. Commissioner Considers Lack of Marketability Factors

In the Estate of Barge v. Commissioner, the Tax Court also provided a very specific list of the factors that it considered in its estimation of the lack of marketability discount in this case.

In a more recent case, Barge, the Court used a quantitative model quite similar to the “quantitative model” generally used by appraisers and analyzed

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by the Court in Mandelbaum. The basic difference in Barge, however, is that all of the basic factors of a quantitative model were specified.

The discount for an undivided interest can be compared, by analogy, to the marketability discount applicable to minority interests in private businesses, since it deals specifically with the restrictions on sale and impediments to ultimate liquidity of the interest during a reasonably definable investment horizon. The factors considered by the Court included:

- Base Value
- Expected Holding Period
- Expected Growth Rate of Value
- Expected Dividends or Distributions
- Required Holding Period Return

The Tax Court continues to follow the line of reasoning found in Mandelbaum and furthered in Barge, and tends to accept the value opinions of business appraisers who develop improved methodologies to quantify marketability discounts in the appraisal of non-marketable minority interests of private businesses and in estimating the appropriate discounts when valuing undivided interests in real property.38

Okerlund v. United States Approves Pre-IPO Studies

For example, in Okerlund v. United States,39 a Court of Federal Claims case, to support discounts for lack of marketability on two valuation dates, both parties’ experts used data that relied on restricted stock studies and pre-IPO studies. Although the data were similar, there was a 15 percent gap between the respective experts’ DLOM conclusions for both dates—30 percent for the IRS, 45 percent for the taxpayer. The court found, however, that the taxpayer’s analysis was far more detailed and persuasive than the IRS expert’s, and commended the taxpayer’s expert (Shannon Pratt, the author of this book) for emphasizing the pre-IPO studies, which, the court determined, were more comparable to the subject company. The court said:

Dr. Pratt’s expert reports contain a far more detailed analysis of the empirical studies of trading prices of restricted shares and pre-initial public offering transactions than the AVG Report. According to Dr. Pratt, the discounts observed in restricted stock studies reflect the existence of a public market for the stock once the temporary restrictions lapse. For a variety of reasons, . . . purchasers of restricted stock ‘generally expect to be able to resell the stock in the public market in the foreseeable future.’ Pre-IPO discounts, on the other hand, are based on purely private transactions before a company enters the public market, a situation more comparable to closely held companies.

The court thus concluded a 40 percent DLOM for one date and 45 percent for the other.

Okerlund demonstrates the importance of a thorough analysis and explanation of both the restricted stock and pre-IPO studies when supporting a discount for lack of

39 Okerlund v. United States, 53 Fed. Cl. 341 (Fed. Cl. 2003), motion for new trial denied, 2003 U.S. Claims LEXIS 42 (Fed Cl. 2003), aff’d, 365 F.3d 1044 (Fed. Cir. 2004). See also Chapter 28 for a discussion of this case.
marketability. Other cases, while not relying on the restricted stock and pre-IPO studies, have said as much.

**McCord v. Commissioner** Lacks Rebuttal

In **McCord v. Commissioner**, the taxpayer’s expert opined that a 35 percent marketability discount was appropriate based on his analysis of the restricted stock studies, including the SEC study, the Silber study, the Standard Research Consultants (SRC) study, and the Hertzel & Smith study. He also testified that pre-IPO studies, including the Willamette Management Associates study and the Emory studies, supported this discount. The IRS expert determined a 7 percent discount based on the expert’s own study of 88 private placements (the “Bajaj study”). The Tax Court found that of the 88 private placements, only the 29 middle placements were useful. Using these, the court concluded a 20 percent DLOM. There was no rebuttal to the IRS DLOM evidence in this case. Although the court rejected the pre-IPO studies, the court did review the taxpayer’s expert’s restricted stock study analysis, and found a number of flaws in his reasoning and methodology. Expressly because of these errors, the court rejected his restricted stock analysis. Nonetheless, the court did not completely reject the restricted stock studies as a source of marketability discount data, but concluded that the expert had not adequately analyzed the data from the studies in reaching his 35 percent discount.

**Howard v. Shay** Upholds 50 Percent DLOM

In **Howard v. Shay**, the appraiser (also Shannon Pratt, the author of this book) applied a 50 percent discount for lack of marketability on the sale of a block of ESOP stock constituting about 38 percent of the outstanding stock. This discount reflected the facts that (1) the company’s stock was not publicly traded and (2) the ESOP plan participants did not have the right to “put” the stock to the company. In successfully defending the suit brought by beneficiaries for alleged undervaluation, the appraiser used the Willamette pre-IPO database, isolating transactions constituting 25 to 49.9 percent of the outstanding stock. This case, which is discussed more thoroughly in Chapter 33, resulted in the largest discount for lack of marketability that a court has ever accepted.

## Summary

This chapter presented a substantial amount of evidence to assist in estimating appropriate discounts (1) for lack of marketability related to noncontrolling business ownership interests and (2) for illiquidity related to controlling business ownership interests. In the final analysis, however, as with many other valuation issues, this estimation should be made in light of a studied examination of the facts.

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and circumstances of each valuation assignment. The specific data that the analyst collects and relies on for each valuation should relate as closely as possible in time and other characteristics to the valuation subject.

Ownership interests in closely held businesses, most of which will never be freely tradable, suffer much more from lack of marketability than do restricted shares of publicly traded companies. In general, they also have fewer prospects of being marketable than do shares of companies that are considering (or are already in the process of attempting) an initial public offering.

Some recent decisions have failed to reflect the full impact of lack of marketability, due primarily to weak evidence presented. The levels of discounts allowed in most judicial decisions still seem to be below what the empirical evidence related to arm's-length transactions tends to suggest.

We hope that business owners, their legal and accounting advisers, and valuation analysts, will use the types of data presented in this chapter, along with continuing related research, to reduce the disparity between the (often low) discounts concluded in judicial decisions and the illiquidity and lack of marketability discounts empirically evidenced in actual market transactions.

Bibliography


